MARINE JOURNAL

BEACON

JULY 2023



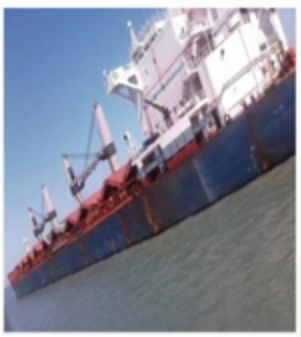
30 Year Celebration

MARINE SURVEYORS ASSOCIATION OF BANGLADESH

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30 Year Celebration
MARINE SURVEYORS
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Tributes



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Captain Shafayet Ahmed Khan
Captain Nur Ahmed
Captain M. Nazrul Kamal
Marine Engineer Elahi Chowdhury
Captain A S M Shamsuz Zaman
Captain Iftekhar Uddin Ahmed Chowdhury
Captain Abdur Rashid
Captain Mesbahul Alam Ansary
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Published in
July 2023

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NOKSHA
+880 1819 397 994 | www.nokshaworld.com

Published by
Marine Surveyors Association of Bangladesh
HALL MSAB, 11, Finlay House, 4th Floor, Agrabad C/A
Chattogram-4100, Bangladesh | www.msabweb.com

Editorial

Sharing our understandings, experiences and knowledge in the community is certainly an inordinate matter.

Marine Surveyors Association of Bangladesh (MSAB), being an assembly of the top skilled professionals in the maritime sector in Bangladesh, also being the most vibrant group of maritime professionals here, there was no media platform to stage the marine expertises as of now.

In this class of people, not only the marine surveyors are there, we have here many multi-skilled successful mentors such as teachers, authors, consultants, technical experts, inspectors, auditors, assessors, port captains, cargo experts, bay pilots, marine lawyers, maritime logistic & management experts, ship building, shipping, chartering, ship management professionals and entrepreneurs, ship demolition consultants, salvage expertise, in-water survey experts, various marine services entrepreneurs etc. Not to mention, it's simply a citadel of mastery and command!

As it is said, better late than never, BEACON is now on the steering to set a course for a novel isle of marine philosophy. Grateful to MSAB for backing such an imperative event of publishing BEACON. Gratitude to all members and well-wishers of MSAB on the grand 30th anniversary of the association. Warm regards to all of our sponsors.



(Captain Mohammad Sakhawat Hossain)

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Message from
SECRETARY
Ministry Of Shipping



Shipping industry has a massive contribution in the economy, trade and commerce of the nation. Being an important stakeholder of the shipping industry, the marine surveyors are performing a vibrant part. It is my great pleasure to know that Marine Surveyors Association of Bangladesh (MSAB) is the only professional platform for independent ship surveyors.

In 1989, the Ministry of Shipping took initiative to regularize the ship surveying profession by implementing related rules and then issuing provisional certificates for the surveyors. Over the time, rules have been amended as required for the good sake of the industry.

Since this assocation is a formation of top skilled professionals, our expectations are higher as well. I praise MSAB for the glorious 30th anniversary.

I hope the marine journal "BEACON" will be a success for the purpose.

20.06.2023

(Md. Mostafa Kamal)
Secretary
Ministry of Shipping
Govt. of the People's Republic of Bangladesh
Bangladesh Secretariat, Dhaka-1000

Message from

DIRECTOR GENERAL

Department of Shipping
Government of the People's Republic of Bangladesh



I congratulate the Marine Surveyors Association of Bangladesh (MSAB) on its 30th anniversary with great pleasure and pride. This milestone is a testament to the dedication and commitment of the surveyors who have played a crucial role in shaping the maritime industry in our nation.

Marine surveying holds immense significance in the shipping business worldwide and Bangladesh in no exception. The breadth of responsibilities entrusted to ship surveyors is vast and vital. From assessing the quantity, quality, and condition of shipping goods to representing local authorities, entrepreneurs, ship owners, and cargo suppliers, their contributions are indispensable.

As the Director General of the Department of Shipping, I am privileged to oversee the certification of ships surveyors. However, I am aware that our current regulations, enacted in 2003, must be updated to align with the rapid technological advancements, 21st-century maritime challenges, environmental concerns and the growing maritime activities in Bangladesh. Therefore, we are updating our ship surveyor licensing regulations to enhance their knowledge base in order to meet International Standards.

I urge marine surveying professionals to embrace this opportunity for professional development and strive for excellence. Together, let us elevate the standards of marine surveying in Bangladesh, making them globally recognized and accepted by local and overseas clients. The evolving economic landscape of our country demands nothing less than the highest standards of professionalism and expertise.

Once again, I congratulate MSAB on its significant contributions to the shipping industry. I am confident that MSAB will continue to excel in its endeavors, supporting our nation with unwavering dedication.

I wish every success of "BEACON" and hope this journal will continue its journey and hope "BEACON" will contribute in enriching vision, knowledge and skill of the marine professionals.

May the future be filled with prosperity and achievements for all.

Commodore Mohammad Maksud Alam, (E),
BSP, NUP, BCGM, BCGMS, ndc, psc, BN

Message from
PRESIDENT FBCCI

Federation of Bangladesh Chambers of Commerce & Industry



I extend my heartfelt congratulations on the momentous occasion of the 30th anniversary of the Marine Surveyors Association of Bangladesh (MSAB) and the upcoming launch of your marine journal, 'BEACON'.

The launch of 'BEACON' marks a significant step forward in promoting knowledge-sharing, industry insights, and best practices within the maritime community. This publication will serve as a beacon of knowledge, enlightening readers with valuable information, technical expertise, and industry trends which will eventually contribute to the growth and advancement of the marine sector in Bangladesh.

Aligned with Bangladesh's development trajectory, the current Board of FBCCI has undertaken various initiatives such as applied research, trade facilitation, transformation technology delivery, ecosystem entrepreneurship, innovation, venture capital investment, business process reengineering and 4IR-based programs bridging the gap between industry and academia, improving business processes to be part of global value chains, prioritizing our MSME's after LDCs towards SDGs and 2041.

The blue economy is set to play a pivotal role in the future of Bangladesh, holding significant importance for the nation's growth and development. With its abundant marine resources and strategic coastal location, Bangladesh has immense potential to harness the benefits of the blue economy and drive sustainable economic prosperity. I firmly believe that the Marine Surveyors Association of Bangladesh will play a crucial role in seizing the opportunities presented by the blue economy.

Once again, I extend my heartfelt congratulations to the MSAB for the launch of the marine journal, 'BEACON'.

(Md. Jashim Uddin)
President, FBCCI

Message from
PRESIDENT IIMS



Dear friends and colleagues of the Marine Surveyors Association of Bangladesh (MSAB), it gives me great pleasure to write this opening welcome to celebrate your 30th anniversary. Thank you to your President, Captain Mahfuzul Islam, for inviting me to contribute this short introduction.

It is a marvellous achievement that you as an organization have succeeded and matured to now celebrate your 30th year. We at the International Institute of Marine Surveying (IIMS) share common goals with you, similar aspirations, and challenges of being marine surveyors in the modern maritime industry.

We are committed to quality, honesty and integrity in our membership and how we conduct ourselves as marine surveyors and as an organization. The IIMS has established itself as the leading global membership organization for marine surveying with members in over 100 countries.

As you know 'Marine Surveying' is a huge subject and as such we need people with different skill sets and wide experiences to fulfill the diverse tasks and assignments that we are asked to report on. The unfortunate truth is that anyone can call themselves a 'Marine Surveyor' with no formal qualifications - not like a doctor or a lawyer, a Captain or a Chief Engineer, who have to undergo formal training over a long period to gain a professional qualification before they can practice their trade, and then needing to continue their professional development to maintain their qualifications.

IIMS has developed a robust membership vetting process, ensuring all applications for membership are assessed by the Professional Assessment Committee members. You cannot just join the IIMS without providing some credible experience and verification of your abilities by references and providing examples of your survey reports for scrutiny. We do not just allow you to join IIMS for a fee. And that's how it should be. We care about the quality of the applications and the people who genuinely have the experience and knowledge to call themselves a marine surveyor.

We also strongly encourage our members to keep up to date with current technology and industry best practice. As you know the marine industry is changing rapidly and technologies are advancing almost daily. We all need to keep up with our Continued Professional Development (CPD) and IIMS encourages its members to provide evidence of CPD through our user-friendly App.

It is inspiring that MSAB has reached its milestone 30th anniversary, but you may be looking around and wondering where the next generation of marine surveyors will come from. 'Who will follow me?' The subject of succession planning across the marine industry is a huge problem, with fewer and fewer young people being attracted to go to sea, to learn from the ground up.

We must work together to encourage governments to invest in the marine industry and our profession, to stimulate growth and help prepare for the future. I belive that we are already a long way behind and there is a big vacuum to fill.

I hope that MSAB and IIMS can share our common goals and experiences in the future and gain more support and development for professional marine surveyors across the marine industry and across the globe.

I wish you well for your 30th anniversary celebrations and a safe and prosperous future.

Peter Broad CEng, CMarEng, FIIMS, FIMarEST
President, International Institute of Marine Surveying

Message from
PRESIDENT OF MSAB



It has been a momentous and evenful year for our beloved organisation - Marine Surveyors Association of Bangladesh (MSAB), an association of professionals, where we have jointly worked to achieve our shared goal of serving the purpose in most professional manner to upkeep the interest of all concerned parties and thrive towards excellence.

It is the members who furnished Marine Surveyors Association of Bangladesh (MSAB) to a stronghold platform besides mobilizing us today to celebrate the glorious 30th anniversary of the association. I congratulate and convey my heartiest greetings and felicitations to the members of MSAB on this grand occasion.

It has been my utmost pleasure and honour to serve as the President of MSAB and my success in leading this association has only been possible due to the tremendous support and active participation of my follow EC members, colleagues and peers.

I hope the progressive role and contibution of the ship surveyor members towards the trade and commerce of the country will be continued with their engaged efforts. MSAB will remain alongside its members with complete commitment and high optimism to move forward with the phase.

A Beacon is a spark of light – a guidance in the dark – an aid to navigation - a path finder for the seafarers at sea. The first ever journal "BEACON" published by MSAB would be a landmark in this community I trust. The publication of this marine Journal gives me immense pleasure and I hope this will continue to be a part of MSAB's regular dissemination in the coming years to unfold and commemorate all our achievements and successes. I congratulate the Editorial and Advisory Board for their relentless efforts in publishing this wonderful journal.

With great joy and anticipation, I welcome you to read this amazingly resouceful marine Journal and hope the readers and associates would find this Journal a worthy one.

(Captain Mahfuzul Islam)



Congratulations!

Congratulations
to the **Marine Surveyors Association of Bangladesh (MSAB)** on completing 30 successful years of providing outstanding marine solutions.

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Marine Surveyors Association of Bangladesh (MSAB): Antiquity

As a profession and part of the industrial practice, independent Marine surveying is well existing in the past and post free Bangladesh. It is a fact that surveying activities were relatively limited due to the then narrow pattern and situation of ocean trading, however it was not late to obtain a dynamic look day by day.

Chittagong and Chalna ports were maintaining a significant role in the maritime trade in post independent Bangladesh. Regarding the marine surveying, qualified Marine Officers mainly Master Mariners and Chief Engineers used to conduct the surveys behalf of the interested parties. Formerly, surveys were mostly carried out for the import grain and crude oil cargoes. It is to note that scope of marine surveys were quite limited in those periods of time since the shipping industry was about to flourish in the newly independent Bangladesh. As such, only a handful of survey professionals were available in this sector till the late eighties. Surveys for loss prevention, claim and insurance matters were as well in place as required by the foreign and local principals. Number of surveys and surveyors started to grow gradually in the late eighties while the shipping industry got momentum and trading patterns became vibrant. However, due to minor volume of the job scopes that is less in number of the surveys and surveyors, yet the necessity of formation of an association of the marine surveying professionals was not being highlighted.

Following statistics (based on limited information) we attach here as a reference to focus on growth of shipping business at Chittagong port, the principal sea port of Bangladesh -

Fiscal year	Import (m tons)	Export (m tons)	Fiscal year	Nos. of vessels
1946-47	1,55,907	87,177	1994-95	1360
1950-51	4,26,431	12,68,600	1995-96	1409
1963-64	5,63,483	32,97,790	1996-97	1482
1970-71	37,55,100	4,11,844	1997-98	1389
1974-75	42,40,616	2,57,924	1998-99	1425
1980-81	49,35,936	5,38,933	2003-04	1764
1994-95	89,28,514	13,54,360	2004-05	1892
1996-97	91,17,259	14,36,990	2005-06	1957
1998-99	1,22,05,906	16,97,362	2006-07	1945
2003-04	1,94,13,460	24,58,972	2007-08	2099
2004-05	2,29,89,122	28,95,769	2008-09	2167
2005-06	2,39,36,103	30,89,550	2015-16	2875
2006-07	2,42,36,261	33,92,974	2018-19	3699
2007-08	2,44,92,707	37,04,862	2020-21	4062
2008-09	2,67,18,834	37,63,747	2021-22	4231

The major export goods of the port of Chittagong are jute and jute products, hides and skins, tea, naphtha, molasses, frozen fish, shrimps, readymade garments, leather goods, chemicals and fertilizer. The main imports are food grain, cement, petroleum, sugar, salt, fertilizer, general cargo, cotton, fabric, cattle-chicken-fish feed, iron materials, chemicals, vehicles, machineries, electrical & electronic items etc.

Sources:

1. https://en.banglapedia.org/index.php/Chittagong_Port
2. http://www.cpa.gov.bd/site/page/7dfad3ff-830c-4d54-b1ae-4b1992cea2ca/-

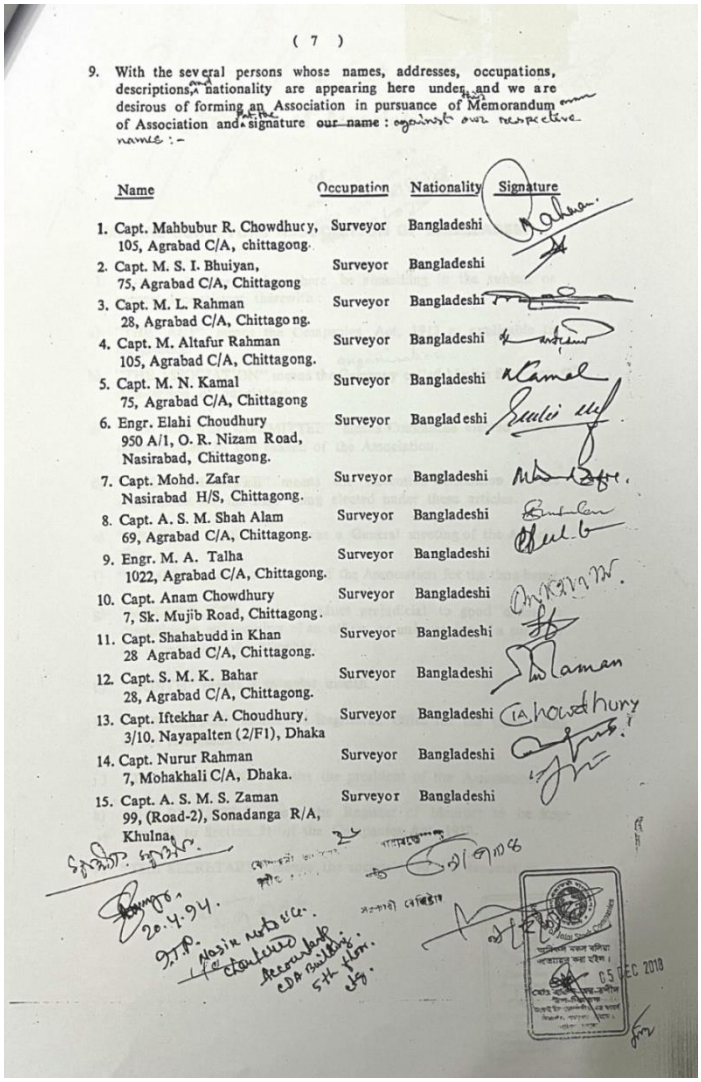
As an emerging economic power, the maritime sector in Bangladesh had high potentiality for trade, businesses and so as for the independent professional marine surveying. In the late nineties, some of the veteran Master Mariners and Chief Engineers were involved in the surveying profession, who were serving the purposes independently and forming companies as well. Surveys were also being undertaken by some of the on board master mariners and chief engineers while they were on vacation. The shipping industry and international trades started turning to an eventful segment at the then decade and as a result, the demand of all the sector wise work scope became enlarged. The market then absorbed many of the senior marine officers and engineers who were aiming to settle ashore after completion of their successful voyages on board.

The authorities then started to adopt various policies for the shipping sector which was established under The Bangladesh Merchant Shipping Ordinance 1983 (BMSO 1983). From 1989, under this ordinance BMSO 1983, the Department of Shipping granted qualified Class 1 CoC holders as Independent Ship Surveyor to carry out marine surveys.

In 2003, through a government gazette namely 'Ship Surveyors (Certificates) Regulations 2003', criteria of the independent ship surveyors under section 500 of BMSO 1983 was ruled more specified.

A good number of surveying professionals then and there progressively started to get engaged in this sector after 1990's. Consequently, rational interaction, connection and communication among the marine surveying professionals was generated within no time. Such collaboration led to various dialogue, argument and conference among the surveyors time to time on issues and interests related to the occupation. The independent marine surveyors then comprehended to develop an organization of their own. Undeniably, an association makes its members comfortable, resilient, bold, united, connected, focused, cooperative, humble and last but not the least – feel safer.

In view of above as stated, on 20 April 1994, practicing marine surveyors amicably agreed to form an association. Following 15 independent surveying professionals as mentioned below, took the great step to establish Marine Surveyors Association of Bangladesh (MSAB):

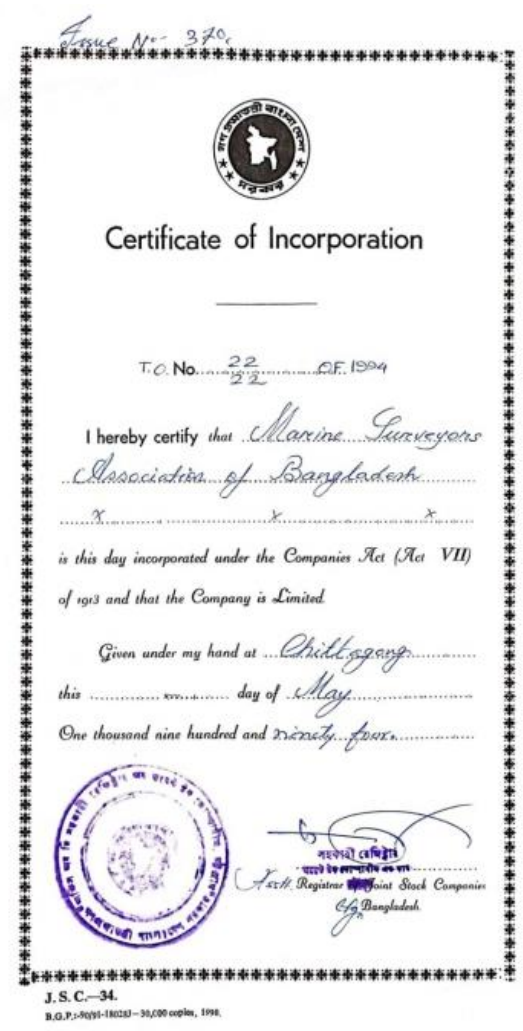


(7)

9. With the several persons whose names, addresses, occupations, descriptions, nationality are appearing here under, and we are desirous of forming an Association in pursuance of Memorandum of Association and signature our name : against our respective names :-

Name	Occupation	Nationality	Signature
1. Capt. Mahbubur R. Chowdhury, 105, Agrabad C/A, chittagong.	Surveyor	Bangladeshi	
2. Capt. M. S. I. Bhuiyan, 75, Agrabad C/A, Chittagong	Surveyor	Bangladeshi	
3. Capt. M. L. Rahman 28, Agrabad C/A, Chittago ng.	Surveyor	Bangladeshi	
4. Capt. M. Altafur Rahman 105, Agrabad C/A, Chittagong.	Surveyor	Bangladeshi	
5. Capt. M. N. Kamal 75, Agrabad C/A, Chittagong	Surveyor	Bangladeshi	
6. Engr. Elahi Choudhury 950 A/1, O. R. Nizam Road, Nasirabad, Chittagong.	Surveyor	Banglad eshi	
7. Capt. Mohd. Zafar Nasirabad H/S, Chittagong.	Surveyor	Bangladeshi	
8. Capt. A. S. M. Shah Alam 69, Agrabad C/A, Chittagong.	Surveyor	Bangladeshi	
9. Engr. M. A. Talha 1022, Agrabad C/A, Chittagong.	Surveyor	Bangladeshi	
10. Capt. Anam Chowdhury 7, Sk. Mujib Road, Chittagong.	Surveyor	Bangladeshi	
11. Capt. Shahabudd in Khan 28 Agrabad C/A, Chittagong.	Surveyor	Bangladeshi	
12. Capt. S. M. K. Bahar 28, Agrabad C/A, Chittagong.	Surveyor	Bangladeshi	
13. Capt. Iftekhar A. Choudhury. 3/10. Nayapalten (2/F1), Dhaka	Surveyor	Bangladeshi	
14. Capt. Nurur Rahman 7, Mohakhali C/A, Dhaka.	Surveyor	Bangladeshi	
15. Capt. A. S. M. S. Zaman 99, (Road-2), Sonadanga R/A, Khulna.	Surveyor	Bangladeshi	

20.4.94.



Issue No- 370.

Certificate of Incorporation

T.C. No. 22/22 OF 1994

I hereby certify that Marine Surveyors Association of Bangladesh

x x x

is this day incorporated under the Companies Act (Act VII) of 1913 and that the Company is Limited.

Given under my hand at Chittagong this ..... day of May One thousand nine hundred and ninety four.

Asstt. Registrar Joint Stock Companies Bangladesh.

J. S. C.—34.

B.G.P.:-90/95-18023—30,000 copies, 1995.

- The first adhoc committee was formed in the same meeting comprising 07 members which was headed by Captain M.L. Rahman and Captain M. Altafur Rahman was selected as General Secretary. Then the big job began. It is said that power comes with responsibility. Utterly, the adhoc committee had very hectic days with a restless mission to brand the association to an effective and meaningful one. The beginners worked for preparing a Memorandum, to set an Article of The Association, plan and execute for an election of executive committee, rules to verify in line with the existing Company Act and Trade Organisations Ordinance, exchange views with the stakeholders, to get enlisted in the Registrar of Joint Stock Companies and Firms, to get affiliated with Federation of Bangladesh Chambers of Commerce and Industries, to get enlisted in the Department of Trade Organization under Ministry of Commerce, to liaison with Department of Shipping, membership drive, prepare various documents, hire an office space etc.
- Accordingly, the association got enlisted with the Registrar of Joint Stock Companies and Firms on 09 May 1994. First executive committee election was held on 29 August 1994 to designate seven members for the committee. First executive committee was formed then headed by Captain M. S. I. Bhuiyan as President and Captain M. A. Hashim as General Secretary. Subsequently, MSAB got affiliated with Federation of Bangladesh Chambers of Commerce and Industries in September 1994 and with the Department of Trade Organization in October 1994.
- MSAB is the only registered association in Bangladesh representing professional marine surveyors. Top most priority of this association is to bring all professional surveyors under one shed, provide necessary training to the members and to conduct marine surveys with professional attitude upholding dignity of the business and to defend safeties of the trades and patrons. MSAB promotes the highest standards of marine survey methods and conduct connected with the occupation of marine surveyors without prejudice to the national interest. MSAB collects and circulates data, statistics and information relating to marine surveys and all matters pertaining thereto.
- Number of members of MSAB as of July 2023 is 166. MSAB carried out several online seminars for members on Marine Surveying and survey procedures. New joiners are being trained up on marine surveying theoretically and practically as well while undergoing the internships under experienced surveyors. Marine surveying industry and the marine surveyors are contributing a great role to the national economy being directly involved with the merchants and government regulatory and revenue authorities while we are carrying out about 6000 surveys in a year now. This survey industry also has opened up huge job opportunities for on-site and in-house co-workers. Regular interactions with the overseas entrepreneurs by the surveying industry is not only bonding the business matters up but also creating new opportunities to enrich our national reserve.

Team Beacon

An Introduction to the Marine Surveying Profession

Captain Zillur Rahman Bhuiyan

Survey

Survey has several meanings, all of which come from Medieval Latin and Anglo words for looking over. As a noun, survey can mean a detailed study of something, and synonyms are appraisal, assessment, valuation, estimation etc.

As a verb survey is,

- looking closely at or examine something,
- examine and record the area and features of (an area of land) so as to construct a map, plan, or description,
- an investigation of the opinions, behaviour, etc. of a particular group of people, which is usually done by asking them questions.

Marine surveying

Marine surveying falls into the activities of looking closely at or examine marine vessels and other watercrafts in order to assess damage, evaluate, inspect their condition and that of any cargo on board. Some marine surveyors act as investigators and expert witnesses in marine accidents.

According to ChatGPT, marine surveying is the profession of inspecting, assessing, and evaluating marine vessels, cargoes, and equipment for a variety of purposes, including safety, compliance with regulations, and insurance coverage.

The primary goal of a marine surveyor is to ensure that a vessel or piece of equipment is safe and seaworthy for its intended use. They may also investigate accidents and incidents to determine the cause and recommend preventive measures. Based on the surveyors report the marine claims are settled.

Marine surveyors are typically employed by ship owners/ship charters & their agents, insurance companies, government agencies, and other maritime entities.

Marine surveyors can specialize in a particular area of expertise, such as cargo, hull & machinery, or small craft/yacht surveying. They may also work in different types of environments, including shipyards, ports, offshore installations, and marine insurance industry.

Overall, the marine surveying profession plays a crucial role in maintaining the safety and efficiency of the maritime industry by ensuring compliance with regulations and assessing damage for repair and insurance purposes.

Types of marine related surveying

Surveyor	Function	Authorized by	Qualification
Government Surveyor	Maritime Administration, Flag State Inspection, Port State Inspection	Government	Master Mariner and Marine Engineer with experience as required by the Government.
Class Surveyor	Recognized Organization on behalf of Flag State administration and Classification Society	Classification Society	Marine Engineer, Naval Architect and Master Mariner with experience as required by the Classification Societies.
Insurance Surveyor	Survey under the insurance policy of Marine Cargo, Hull, Fire, Motor, Engineering, Aviation and Miscellaneous.	For Bangladesh: Insurance Development and Regulatory Authority (IDRA) under Ministry of Commerce	Graduate degree holder with 5 years working experience in an authorized insurance survey company.
Cargo and Commercial Ship Surveyor	Given below	For Bangladesh: Certificate of Ship Surveyor from the Department of Shipping.	Master Mariner (Class 1 Deck Officer) with two years command experience or Class 1 Marine Engineer with 2 year's Chief Engineer Experience.

The engagement and function of the cargo and commercial ship surveyor are as follows:

Engaged by	Type of survey	Purpose
Ship-owner, Charterer, Ship Agents	Cargo damage, Cargo short landing, Draft survey, Ullage survey, Bunker survey, On-Hire & Off-Hire condition survey	Loss Control and Claim Management.
Cargo Exporters & Importers	Cargo quantity & condition survey, Cargo damage, Draft survey, Ullage survey, Cargo delivery survey,	Loss Control and Claim Management.
Charterers	Port Captaincy	Loss Control and Expedition of loading/discharge
Overseas Cargo Insurers	Cargo/heavy-lift Pre-loading, Pre-discharge, Discharge supervision, Warranty survey, Towage and Lashing Approval.	Loss Control, Loss Prevention and Claim Management.
Hull & Machinery Insurers, P&I Clubs/their local, correspondents, Overseas claim consultants	Grounding damage, Fire damage, Collision damage, Cargo damage, Damage to port/shore properties, Pollution, Injury & loss of life, Salvage operation, Stowaway investigation.	Incident/accident Investigation leading to Loss Assessment and Claim Management
Hull & Machinery Insurers, P&I Clubs, Charterers	Vessel condition survey	Risk Assessment and Loss Prevention.
Ship buyers/brokers	Pre-Purchase Inspection	Risk & condition Assessment
Scrap vessel buyers	Pre-Demolition survey	Risk Assessment
Maritime lawyers/law firms	Technical advice and court witness	Providing expert opinion in settlement of claims in court of law

Based on the scope of work, the marine surveying profession encompasses the Cargo and Commercial Ship Surveyors (CCSS) in general internationally and in Bangladesh specifically.

Qualification of CCSS

Internationally there is no set qualification to be a CCSS. The qualifications and requirements to practice marine surveying profession can vary depending on the specific type of surveying being performed and the jurisdiction in which the work is taking place.

Some marine surveyors complete formal apprenticeship programmes in reputed marine surveying companies that combine mentoring and paid on the job training. Most employers provide on the job training to enable new marine surveyors to learn the required policies and procedures. Many marine surveyors obtain recognition as a Marine Surveyor from the International Institute of Marine Surveying (IIMS), Lloyd's Maritime Academy or Maritime Training Academy in the UK to remain competitive in the field.

In general, however, marine surveyors typically need to have a strong background in nautical science, marine engineering, naval architecture, or a related field, as well as relevant work experience in the maritime industry. They may also need to obtain specialized training and certification in areas such as cargo, hull and machinery, yacht and small craft, or offshore energy.

In addition to technical knowledge and experience, marine surveyors should possess good communication skills, attention to detail, and an ability to work independently and manage their own workload. They should also have a thorough understanding of the regulations and standards that apply to the type of surveying they are performing, as well as the ability to stay up-to-date with changes and updates in these areas. In most of the countries individual independent marine surveying (CCSS) must work through or for a surveying company registered with the government.

Above all, the insurance companies and P&I Clubs have preference of surveyors with some sort of formal training or academic qualification like Diploma in Marine Surveying.

CCSS profession in Bangladesh

After independence of Bangladesh, shore based senior master mariners and marine chief engineers were the marine surveyors without any formal qualification or any type of certification or licensing.

In 1987 the Bangladesh Government (Department of Shipping) started issuing of Certificate for Practicing Profession of Ships' Surveyor and in 1993, the name of the certificate was changed to Certificate for Practicing Profession of Independent Surveyor of Ships'. Since 2003, Certificate of Ship Surveyor is issued by the Department of Shipping to the master mariners with two years command experience or the Class 1 Marine Engineer with 2 year's Chief Engineer Experience.

Marine surveying is a profession not a career

A marine surveyor (CCSS) does not have a career, but he is a professional. A mariner can have a successful and eventful career after getting a suitable shore-based employment, on the job training, satisfying work experience and high job profile. He emphasizes on growth and development in respect of duties and responsibilities holding highest positions and handsome remuneration.

On the other hand, professionals are in charge of providing services to the clients. Customers pay professional fee for the services provided; hence practicing professions do not rely on salaries. Happiness and fulfillment are indicators of professional success.

- Profession emphasizes service, while the career emphasizes growth and development.
- There is no code of behaviour for a Career, but there is one for a Profession.
- A Career is more about ambition and enthusiasm than a Profession focused on training, education and professional development.

- A Career is an individual's work-life, whereas a Profession is a specific field of work and a paid activity which necessitates a set of skill and knowledge in the speciality that needs formal education and training.

Progression in marine surveying profession

Like medical and legal profession, progression and success in marine surveying (CCSS) is directly dependent on customer satisfaction in respect of meeting their requirement with proficiency.

A marine surveyor without being mentored and continued professional development (CPD) will have a static professional life by having a fixed local client with a limited set of assignments. In order to gain proficiency and have a dynamic professional standing, a rising marine surveyor need to be mentored by seniors, should have membership in one or more of the international marine surveying organizations like International Institute of Marine Surveying (IIMS), UK, National Association of Marine Surveyors (NAMS), USA, Society of Accredited Marine Surveyors (SAMS) USA, etc.

A marine surveyor's affiliation with local P&I correspondents, with internationally reputed survey companies and obtaining a Diploma in marine surveying would definitely enhance the professional status and financial standing of a marine surveyor by being exposed to international survey domain and attain international stature.

For an aspiring marine surveyor, he/she must be committed to the learning process for the first 2 to 3 years after starting the profession and gain confidence of the customers through field work and report writing. However, for a real professional marine surveyor the learning process is endless, and he keeps on learning even after he retires.

Report writing

Survey Report is the product of marine surveyors and to be used by the customer to fulfil the purpose for which the surveyor was appointed.

A marine surveyor is worth his report writing skill. It is said in the forward of a survey report writing book that "While it is necessary for surveyors to possess sound technical knowledge it is certain that without an ability to adequately convey their findings in their reports, and sometimes also opinions, they will never become competent and respected surveyors.

Ethical and legal consideration in practicing the profession of marine surveying

A marine surveyor must follow a Code of Ethics and Rules of Practice encompassing:

- Be competent, prompt, diligent and demonstrate respect for the survey profession.
- Accept only assignments that can be completed with professional competence.
- Respect the confidential nature of marine surveying.
- When representing the client: endeavour to present facts and opinions without prejudice.

- Refrain from suppressing, over-emphasizing or manipulating facts.
- Avoid assignments that would create a conflict of interest.
- Not make false, misleading, deceptive or unfair statements concerning fellow surveyors or the surveyor's services, qualifications or integrity.

In general, marine surveyors are exposed to liability under both the law of contract and the law of negligence/law of tort. The exposure of a marine surveyor to liability under the law of contract will vary depending upon the terms of the individual contract between the surveyor and his customer.

In addition to the duties of a marine surveyor under his contract with his client, he also owes the client a duty of care under the law of tort. There might be claim against a marine surveyor for acting negligently as well as in breach of contract.

A separate article is required to explain the surveyor's responsibility and liability under these two laws.

Conclusion

Marine surveying is a promising profession with independency and much rewarding, but challenges are there. Commitment and endurance are the key words for a beginner marine surveyor. Even after having a sound marine background or a marine surveying qualification the initial few years are challenging facing the rigorous physical strain in conducting survey in inclement weather conditions out at sea and onboard ships, not much family time to be ready to serve 24/7 and 365 days in a year, ready to be out from home with the survey bag after a phone call from the client while the initial financial outcome may not be gratifying. There is no alternative to patience, determination and thirst for learning leading to excellence in the local and global marine surveying field attaining at an international image with well secured life and financial status.



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He is the immediate past president of Bangladesh Merchant Marine Officers' Association (2014 to 2018) and past President of Marine Surveyors Association of Bangladesh (2019-2021).

Navigating Charter Party Disputes: Understanding of Holidays, Laytime Calculation and Force Majeure

B K Chowdhury

Introduction

Charter Party (C/P) agreements are the cornerstone of international shipping, facilitating the smooth transportation of goods across the seas. However, even with meticulous drafting, disputes can arise under these contracts. In this article, we delve into the complexities of laytime calculation and explore the implications of some terms and clauses, particularly in light of the COVID-19 pandemic.

Laytime calculation and holiday exceptions

One common point of contention in charter party is the exclusion of laytime during specific holidays. The case of a ship calling at Chattogram Port during the COVID-19 period provides an excellent example. The ship faced a 'General Holiday' from 26/03/2020 to 30/05/2020, declared by the government to enforce lockdown measures for public and health safety. The question that emerged was whether this 'General Holiday' period could be excluded from laytime calculation.

To address the implications, we need to understand ‘Holidays’ in broader perspective, the local trade practice, charter party, BIMCO, International Chamber of Commerce.

In the local trade practice, the holidays are described as:

1. **Chamber Holidays** for Commercial Organisations /Establishments.
2. **Public Holidays** for Govt. and Semi Govt. offices, autonomous and semi-autonomous bodies.

3. **Public Holidays** under Executive Orders for Govt. and Semi Govt. offices, autonomous and semi-autonomous bodies.
4. **Public Sectional Holidays** for Govt. Semi Govt. offices, autonomous and semi-autonomous bodies.
5. **Weekly Holidays.**(Weekend Holidays Friday/Saturday).

In contrast to the aforesaid holidays, C/P term usually contain clause relating to holiday reading as " It is understood the word 'holidays' as it appears throughout this Charter Party includes local and/or national and/or public and/or stevedore holidays". None of these holiday is continuous as was the case with the General Holiday.

Traditionally, holidays under serials 1 to 5 are observed on different dates of the annual calendar and are not continuous making the 'General Holiday' during the pandemic unique in its uninterrupted duration.

If Holidays are continuous for say two months, then it can no longer be termed as a "Holiday" as the characteristics of the term "Holiday", as defined from ancient time and as applicable to Shipping Trade, stands frustrated.

The C/P contained the terms "PWWD FHS NOON EX EIU".

Legal authorities have opined that Sundays and holidays are not counted as lay days unless specifically indicated otherwise. The term "PWWD FHS NOON EX EIU" - 'per weather working day Friday holiday Saturday excluded (excepted) even if used' - is commonly employed in charter party clauses. It was contended that "holiday" in this context meant excepting holidays even if they were used for discharge operations. Therefore, laytime during the 'General Holiday' should not be taken into account.

Laytime exception clauses

Exception clauses are crucial in these situations. The burden of proving an excepted contingency lies with the charterer, and these clauses are construed against the party who benefits from them. Careful consideration and unambiguous language in the contract can help mitigate disputes arising from laytime calculation.

Fixed discharge rate and liability

Charter parties may also contain fixed discharge rate clauses, leading to disputes when impediments prevent cargo operations within the stipulated period. Such clauses make the charterer liable for non-performance unless exceptions apply or if the impediments arose due to the ship owner's fault.

Interpreting force majeure clauses

In extraordinary circumstances like the COVID-19 pandemic, force majeure clauses become pivotal. However, their applicability depends on the contractual language, and English law lacks a statutory definition of force majeure. Therefore, contracting parties must clearly agree on its application and scope.

For instance, some charter party agreements explicitly name "epidemics" as force majeure events. In such cases, parties may not be liable for non-performance due to an epidemic, including COVID-19. Nevertheless, challenges may arise, warranting a careful review of the contractual language.

Properly recording circumstances in the SOF

In any charter party dispute, the Statement of Facts (SOF) plays a crucial role. Accurate and detailed recording of circumstances leading to delays, especially those covered by exception clauses, is essential to determine laytime exceptions and mitigate potential disputes.

Conclusion

Contracts are made in good faith with clear intention that each party to the contract will perform and meet the respective obligations and duties, yet under charter party contracts unexpected disputes arise from breaches not intentionally committed by either of the parties but caused by conditions and situation not contemplated by either of the party in the contract.



B K Chowdhury

With decades of experience, the author has accomplished expertise, skills and knowledge in handling and resolving intricate maritime disputes and claims of high magnitude, has an acute understanding of the implications of maritime contractual terms, their illuminating insights are the cornerstone for solving the often challenging territory of shipping disputes.

Maritime Industry: Marine Survey, Insurance, and Claim

Commodore Syed Ariful Islam BN (Retd)

Introduction

Global maritime shipping industry is known to be the most transparent and compliant industry in the world. In conducting global trade throughout the oceanic route maintaining standard set out by the International Maritime Organization (IMO) and the national legislation of the respective flag state, coastal state and the port state, qualified surveyors are must to inspect, survey and examine not only for the condition of the vessel but its equipment, machinery the cargo, ship's crew and many more. The survey, inspection and the examinations conducted by a marine surveyor is followed by a report that will have financial, operational, and administrative consequences. Therefore, report of the surveyor should generally include a summary of the incident based upon witness observation and the facts based on evidence. Surveyor has no liberty to speculate and comment on liability. Marine surveying is closely associated with marine insurance, damage and salvage, accident, and fraud investigation.

Marine Insurance is a type of insurance that covers cargo losses or damage caused to ships, cargo vessels, terminals, and any transport in which goods are transferred or acquired between different points of origin and their destination (Wallet, 2020). It is a long practice in the shipping business to provide different types of insurance to ships, its cargo and to the personnel involved in it. Thus, the marine surveyors are closely connected to the insurance and claim.

Marine surveyors

A Marine Surveyor is a person who inspects, surveys, or examines marine vessels in order to assess damage, inspect or monitor their condition and that of any cargo on board. Marine surveyors also inspect equipment intended for new or existing vessels to ensure compliance with various standards or specifications. Marine Surveyors are highly qualified and usually selected through rigorous evaluation procedures. Their duties apply to a wide range of seafaring vessels (Wikipedia, 2023).

In the ports of Bangladesh huge amounts of bulk and break-bulk cargo is handled. While handling this cargo in the port, often there are claims of shortage. In such a situation the vessels remain under the threat of detention or cash settlement. To avoid such situation a joint draft survey by all concerned party's surveyor is a must. The High Court of Bangladesh accepts the joint draft survey in estimating the quantity of cargo discharged.

There are many different types of Survey required for the Commercial vessels. It is required for the Ship Owner, Flag State, Port State, Importer, Exporter, Insurers and many more. Flag state survey is generally conducted by the Department of Shipping or in its behalf the Classification Society.

Surveyors maintain professional autonomy in order to provide an unbiased view. Independent marine surveyors are often employed by the clients of marine insurers to provide evidence in support of damage claims made against the insurer.

Marine insurance

The concept of Marine Insurance was originated in Greek as soon as the shipping business started getting prominence. Though it was not insurance in real sense, still it was a well-developed form and covered risk to a certain extent through providing loans. This model of marine insurance in the form of marine loan were widely practiced among the Greek and Romans in the early days of introducing such insurance facilities. In the medieval ages it was the risk hedging instruments to mitigate risk and were named as Sea/ Marine loans, Commenda Contract and Bill of Exchange.

During the seventeenth century the shipping business flourished worldwide. At the same time the ship-owners were interested to make the travel plan of their ships under marine insurance.

Accordingly, during early seventeenth century the modern marine insurance law was first adopted in the United Kingdom (UK) in the name of Lex mercatoria (law merchant). In 1601, a specialized chamber of assurance, separate from the other Courts was established in England. (Wikipedia, 2020)

The growth of the London insurance market led to the standardization of policies and judicial precedent further and developed marine insurance law. In 1906 the "Marine Insurance Act" codified the previous common law and became a concise piece of work.

Basic framework for marine insurance

Like any other insurance on property or lives, the contract of Marine Insurance is based on the fundamental principles of Indemnity, Insurable Interest, Utmost Good Faith, Proximate Cause, Subrogation and Contribution. The fundamental principles of Marine Insurance are described below (Insurance Council, 2020)

Indemnity: The object of an insurance contract is to place the assured after a loss in the same relative financial position in which he would have stood in a way that no loss occurred. By the Marine Insurance Act, the indemnity that is provided is "in manner and to the extent agreed." Thus, in every case of marine insurance a "commercial" indemnity is provided. Commercial indemnity would necessarily mean an amount of money agreed between the insurer and the client.

- **Insurable Interest:** It states that there must be a physical object exposed to marine perils and that the insured must have some legal relationship to the object, in consequence of which he benefits by its preservation and is prejudiced by loss or damage happening to it or where he may incur liability in respect thereof.
- **Good Faith:** Every contract of insurance is a contract of "Good Faith". In Marine Insurance, it is the duty of the proposer to disclose clearly and accurately all material facts related to the risk. A material fact is a fact, which would affect the judgment of a prudent Underwriter in considering whether he would enter a contract at all or enter it at one rate of premium or another and subject to what terms.
- **Proximate Cause:** Proximate cause means the active, and efficient cause that sets in motion a train of events which brings about a result, without the intervention of any force started and working actively from a new and independent source. The proximate cause is not necessarily that which is proximate in time, but that which is proximate in efficiency. It is the dominant, effective, and operative cause of the loss.
- **Subrogation:** Subrogation is the right which one person has of standing in place of another and availing himself of all the rights and remedies of the other, whether already enforced or not. Subrogation is a matter of equity, the purpose of which is to ensure that the insured is not over-indemnified for the same loss.
- **Contribution:** Sometimes one risk may be covered by more than one insurer. In that case it is desirable not only to ensure that the insured does not receive more than an indemnity but that any loss is fairly spread between all the insurers involved.

Marine insurance claim

It is often difficult to resolve the cargo damage claim in Bangladesh. Receiver of the cargo may refuse to take delivery. It is also difficult to compel the receiver to take delivery because of the complicacies of the local law. Thus, to make a marine insurance claim following steps may be followed:

- Take immediate steps to minimize damage or loss.
- Report the occurrence to the nearest office of the insurance company or claim settling agent specified in the insurance policy.
- If the damage occurs while the shipment is on ship or at a port, arrange for a joint ship or port survey.
- File insurance claim within the time specified in the policy.

Finally, a surveyor determines the nature, cause and extent of the loss or damage and relays the approximate value of the loss or damage to the insurer.

Insurance law in Bangladesh

Insurance business is not new in Bangladesh. During the British rule in India, some companies started insurance business, both in life and general insurance, in this region. After the war of liberation in 1971 this business gained momentum in Bangladesh and the business was regulated by the Insurance Act 1938. This Act contained provisions regarding matters like definition of insurer and insured, commission

payable to agents, licensing of agents, appointments of staff, register of policies and register of claims powers of the controller of insurance, acquisition of surrender value by policy, statistical report, deposits, investments, loans, valuation of assets and liabilities, account, and balance sheets etc. Insurance Act 2010 replaced the previous Act 1938.

Conclusion

For a qualitative maritime trade and commerce, the global shipping industry is under compulsion of adhering to the national and international rules, regulations, and the industry best practices across the globe. All these standards, of trade and shipping are mostly maintained by the qualitative services rendered by the marine surveyors. While discharging their services as the marine surveyor, in one end they need to be qualified and skillful in their respective field of survey and on the other, must have the knowledge about Insurance, Damage Surveys, Cargo Claims etc. Concerted effort of the administration, the surveyor and the insurance clubs can enhance the quality of the shipping industry to the standard required by the global maritime industry.

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Being Commissioned in January 1987, Commodore Syed Ariful Islam, BN (Retd) served Bangladesh Navy for about 36 years. He also served on deputation as the Serjeant-At-Arms at the Bangladesh Parliament and Director General Department of Shipping under the Ministry of Shipping. While serving as Director General, Shipping, he headed the Maritime Safety Administration of Bangladesh both for domestic and maritime shipping sector. Commodore Islam authored and presented papers on issues relating to Seafarers' Rights, Domestic Ferry Safety in Bangladesh, Enhancing jobs for Seafarers, Ship Recycling and Shipbuilding, Regulatory Issues in Shipping, Port and Shipping Management, Coastal Shipping between India and Bangladesh at different seminars and workshop both at home and abroad. He holds a Master's degree on Defense Studies from Bangladesh National University and M Phil in Strategy and Development Studies from Bangladesh University of Professionals.

Key Notes on Common Mistakes by Ships: Accidents at Chattogram Anchorage and Approaches

Captain M A Fasihur Rahman

Introductions

Chattogram is a very busy port and can be termed as the Gateway to Bangladesh. Reportedly over four thousand vessels called Chattogram during the last year. Unfortunately, significant number of incidents of collision & grounding takes place at Chattogram Anchorage & Approaches, raising concern by Ship-Owners, Charterers, Managers, Underwriters, Agents, Cargo Receivers and several other stakeholders.

If we look into the causes of the above incidents, we will find that majority of the incidents are caused due to some common mistakes or errors by ships - mainly for not following the basics of safe navigation at sea. Eliminating these errors will greatly reduce the number of such incidents.

The objective of this article is to look into the common mistakes by ships and raise awareness and also discuss the correct procedure of navigation while approaching Chattogram Port or its designated anchorages.

Common mistakes

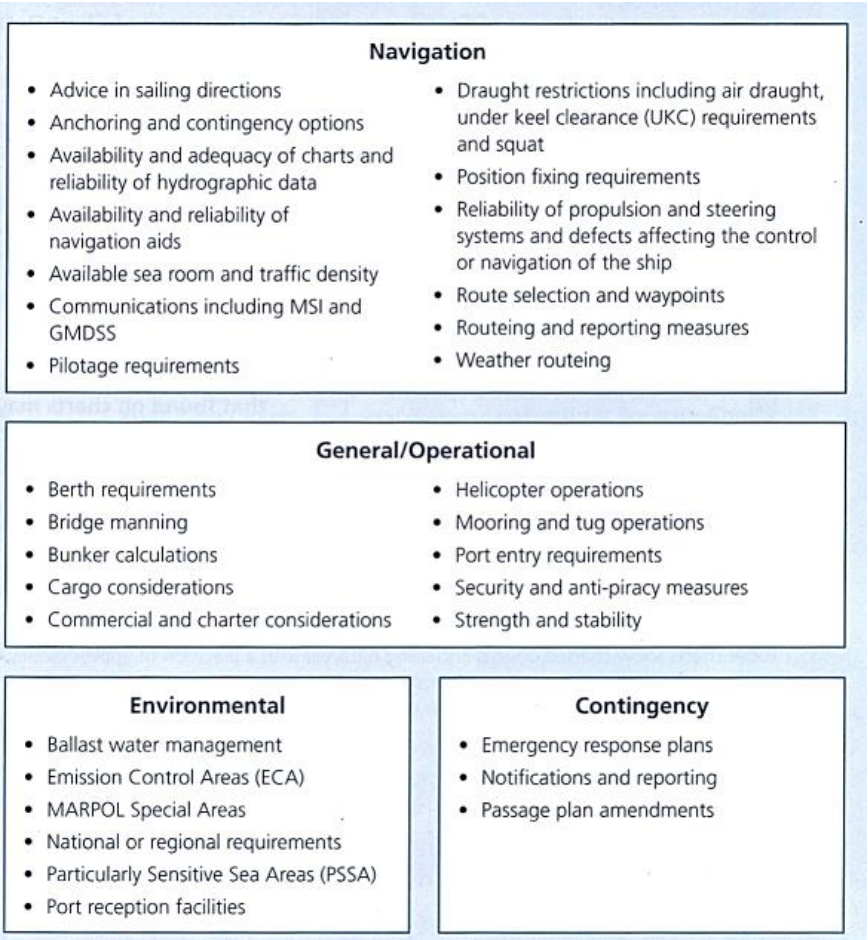
- Not following the prescribed directions while approaching Chittagong
- Failure to judge the effect of tidal current and error in navigation
- Not calculating the tidal rise
- ECDIS- misinterpretation
- Excessive draft & Low Under Keel Clearance (UKC)
- Lack of good seamanship practice

Steps to be taken

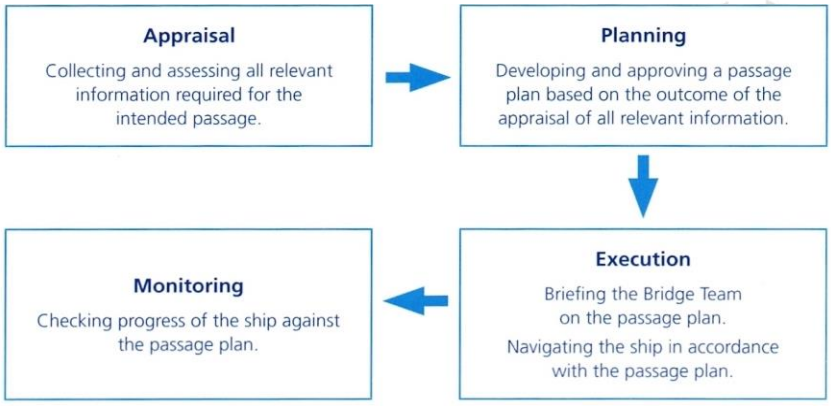
The following steps are to be considered to avoid the incidents listed above.

- **Passage Planning:** First step for safe navigation to a destination by sea is to develop a comprehensive plan for safe conduct of the ship from berth to berth.
  - The procedure for Passage Planning is detailed in the Bridge Procedure Guide published by the International Chamber of Shipping and the publication is mandatory to be carried onboard by all seagoing ships.
  - Chapter 2 of the Bridge Procedure Guide deals with Passage Planning.

Appraisal (Gathering information)



Principles of Passage Planning



Publications



Incidents at Chittagong

Undue occurrences concerning seagoing vessels at Chattogram may be categorized as follows:

- Incidents concerning deep draft vessels while approaching Kutubdia Roads
- Incidents at Kutubdia Roads
- Incidents while approaching designated anchorages of the port

- Incidents at designated anchorages of the port
- Incidents while picking up pilot for berthing in Inner Harbour

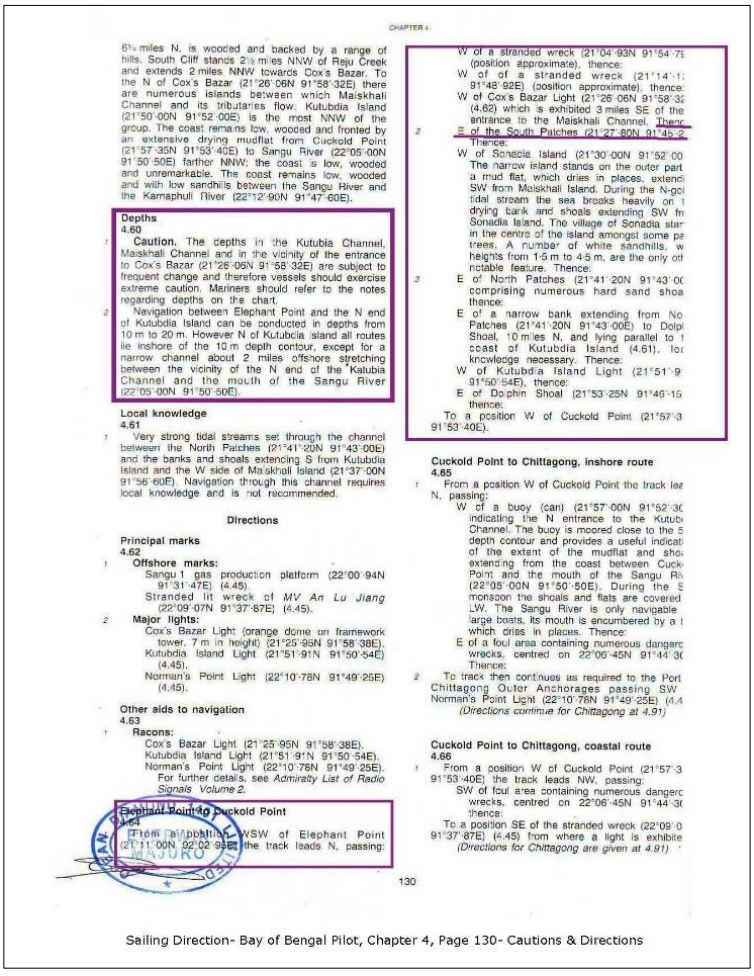
Incidents while approaching Kutubdia

- Most Bulk Carriers drawing between 14 & 11 metres, discharge part of their cargo at Kutubdia Roads to reduce draft prior to shifting to Chattogram Anchorage.
- There are reported incidents of grounding by vessels approaching Kutubdia Roads.

Reasons are for

1. Not following prescribed directions
2. Not carrying out calculation for tide
3. Using uncorrected charts

Direction to approach Chittagong



Depths
4.60
1 Caution. The depths in the Kutubia Channel, Maiskhali Channel and in the vicinity of the entrance to Cox's Bazar (21°26·05N 91°58·32E) are subject to frequent change and therefore vessels should exercise extreme caution. Mariners should refer to the notes regarding depths on the chart.
2 Navigation between Elephant Point and the N end of Kutubdia Island can be conducted in depths from 10 m to 20 m. However N of Kutubdia island all routes lie inshore of the 10 m depth contour, except for a narrow channel about 2 miles offshore stretching between the vicinity of the N end of the Kutubia Channel and the mouth of the Sangu River (22°05·00N 91°50·50E).

Local knowledge
4.61
1 Very strong tidal streams set through the channel between the North Patches (21°41·20N 91°43·00E) and the banks and shoals extending S from Kutubdia Island and the W side of Maiskhali Island (21°37·00N 91°56·60E). Navigation through this channel requires local knowledge and is not recommended.

Directions

Principal marks
4.62
1 Offshore marks:
Sangu 1 gas production platform (22°00·94N 91°31·47E) (4.45).
Stranded lit wreck of MV An Lu Jiang (22°09·07N 91°37·87E) (4.45).
2 Major lights:
Cox's Bazar Light (orange dome on framework tower, 7 m in height) (21°25·95N 91°58·38E).
Kutubdia Island Light (21°51·91N 91°50·54E) (4.45).
Norman's Point Light (22°10·78N 91°49·25E) (4.45).

Other aids to navigation
4.63
1 Racons:
Cox's Bazar Light (21°25·95N 91°58·38E).
Kutubdia Island Light (21°51·91N 91°50·54E).
Norman's Point Light (22°10·78N 91°49·25E).
For further details, see Admiralty List of Radio Signals Volume 2.

Elephant Point to Cuckold Point
4.64
1 From a position WSW of Elephant Point (21°11·00N 92°02·90E) the track leads N, passing:
W of a stranded wreck (21°04·93N 91°54·75
(position approximate), thence:
W of of a stranded wreck (21°14·1
91°48·92E) (position approximate), thence:
W of Cox's Bazar Light (21°26·06N 91°58·3
(4.62) which is exhibited 3 miles SE of the
entrance to the Maiskhali Channel. Thenc
2 E of the South Patches (21°27·80N 91°45·2
Thence:
W of Sonadia Island (21°30·00N 91°52·00
The narrow island stands on the outer part
a mud flat, which dries in places, extend
SW from Maiskhali Island. During the N-go
tidal stream the sea breaks heavily on
drying bank and shoals extending SW fr
Sonadia Island. The village of Sonadia star
in the centre of the island amongst some pa
trees. A number of white sandhills, w
heights from 1·5 m to 4·5 m, are the only ot
notable feature. Thence:
3 E of North Patches (21°41·20N 91°43·0
comprising numerous hard sand shoa
thence:
E of a narrow bank extending from No
Patches (21°41·20N 91°43·00E) to Dolp
Shoal, 10 miles N, and lying parallel to
coast of Kutubdia Island (4.61), for
knowledge necessary. Thence:
W of Kutubdia Island Light (21°51·9
91°50·54E), thence:
E of Dolphin Shoal (21°53·25N 91°46·15
thence:
To a position W of Cuckold Point (21°57·3
91°53·40E).

Cuckold Point to Chittagong, inshore route
4.65
1 From a position W of Cuckold Point the track lea
N, passing:
W of a buoy (can) (21°57·00N 91°52·30
indicating the N entrance to the Kutub
Channel. The buoy is moored close to the S
depth contour and provides a useful indicat
of the extent of the mudflat and sho
extending from the coast between Cuck
Point and the mouth of the Sangu Ri
(22°05·00N 91°50·50E). During the S
monsoon the shoals and flats are covered
LW. The Sangu River is only navigable
large boats, its mouth is encumbered by a
which dries in places. Thence:
E of a foul area containing numerous dangerc
wrecks, centred on 22°06·45N 91°44·30
Thence:
2 To track then continues as required to the Port
Chittagong Outer Anchorages passing SW
Norman's Point Light (22°10·78N 91°49·25E) (4.4
(Directions continue for Chittagong at 4.91)

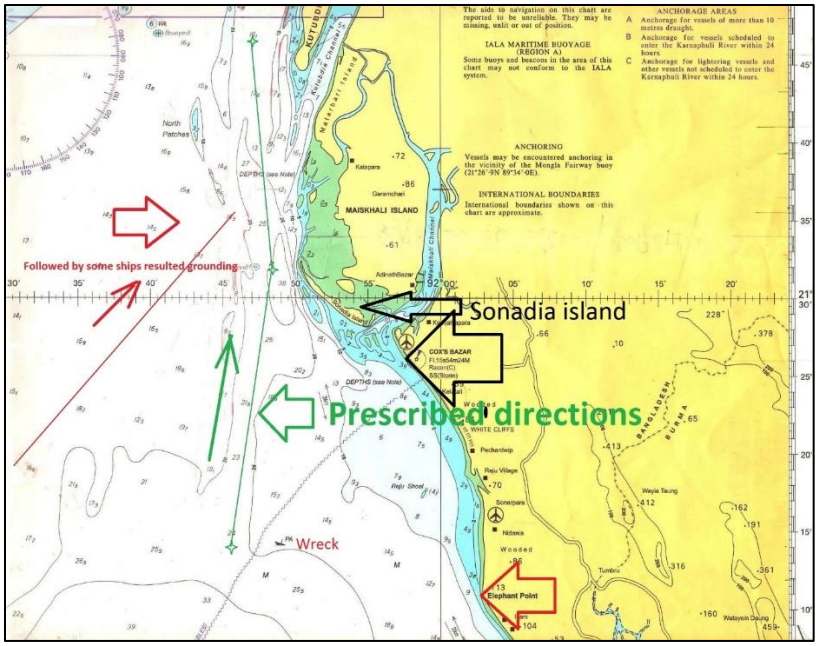
Cuckold Point to Chittagong, coastal route
4.66
1 From a position W of Cuckold Point (21°57·3
91°53·40E) the track leads NW, passing:
SW of foul area containing numerous dangerc
wrecks, centred on 22°06·45N 91°44·30
thence:
To a position SE of the stranded wreck (22°09·0
91°37·87E) (4.45) from where a light is exhibite
(Directions for Chittagong are given at 4.91)

130

Sailing Direction- Bay of Bengal Pilot, Chapter 4, Page 130- Cautions & Directions

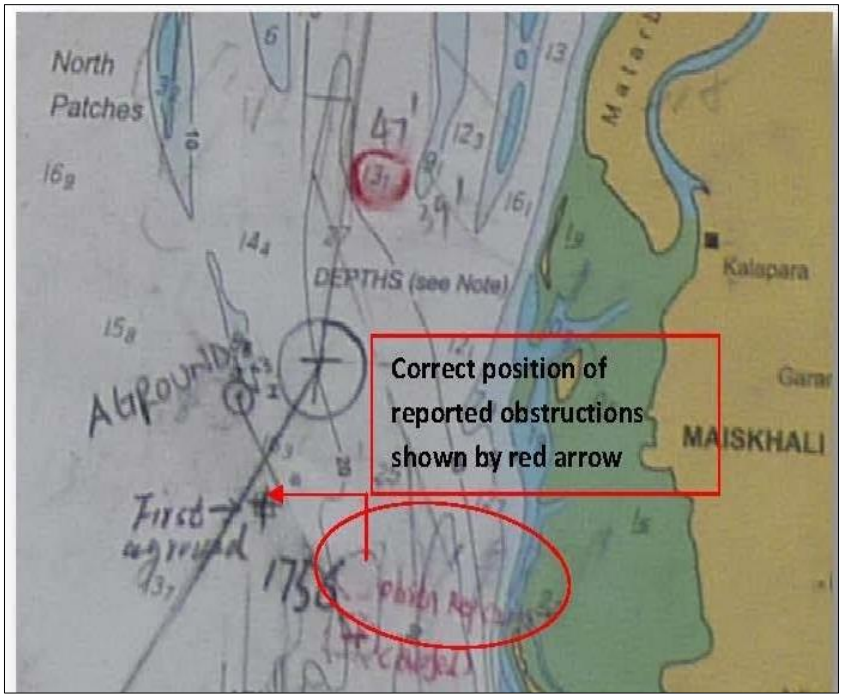
The extract has been derived from the Nautical Publication– Bay of Bengal Pilot, Chapter 4 and page 130.

Directions plotted on BA Chart 90



Grounding incident

The following is an example showing wrongly corrected chart. Obstruction shown at wrong position that resulted grounding of a vessel which did not follow the recommended directions.



Incidents at Kutubdia Roads

- Incident of anchor dragging is reported at times.

Cause of anchor dragging may be due to:

Cause	Prevention
Low U.K.C	Look for position with over 3 meters U.K.C. from Chart Datum while anchoring
Not paying out enough anchor chain	As many lengths of chains as is possible is to be paid-over 10 shackles is good
Strong tidal current	High Holding Power (HHP) Anchor minimise risks. Use engine during the period of strong current to keep vessel in position.

Incidents while approaching Chittagong

Majority of the incidents occur while loaded vessels approach for anchoring or to pick up pilot. Usual incidents are:

- Collision incidents
- Grounding incidents

Causes

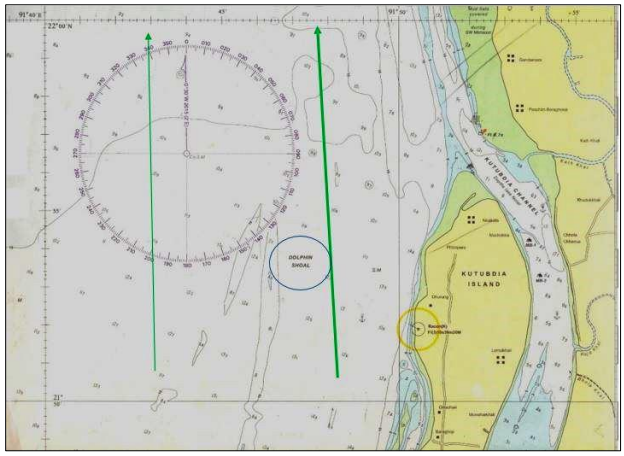
1. Error in passage planning
2. Error in Maneuvering
3. Excessive draft- low Under Keel Clearance (UKC)

Approaching

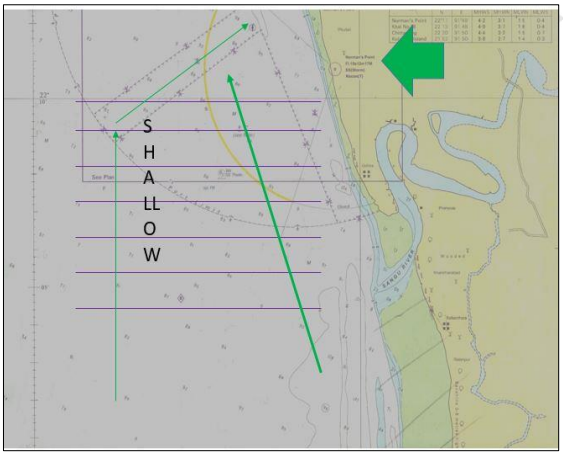
Approaching Chattogram Anchorage and/or approaching Pilot Ground need careful planning, monitoring and execution. Vessels need to cross the Outer Bar having Charted Depth (CD) of water between 7 to 8.2m as can be seen from the scanned copies of the Chart. Range of tide at Chattogram is quite high and generally height of tide at High Water time ranges between 4 to 5.5 m depending on phases of the moon and the seasons. Height of tide is more during rainy season between June & August and less during dry seasons between November & February. Tidal current at Anchorage area & approaches is also very strong and can reach 6 o 7 Knots at times during spring tide.

Naturally, the Outer Bar area has to be passed during flooding / High Water. Usually deeper draft vessels pass to the east of Dolphin Shoal and shallower draft vessels pass to the west of the Dolphin Shoal as the later area has less traffic.

Prudent navigators plan their passage to pass the Norman's Point during high water and the time of High Water at Norman's Pt. is about 50 minutes before High Water at Chattogram Port (Sadar Ghat) as mentioned in the British Admiralty Tide Table or can be found in approved relevant software for tide.



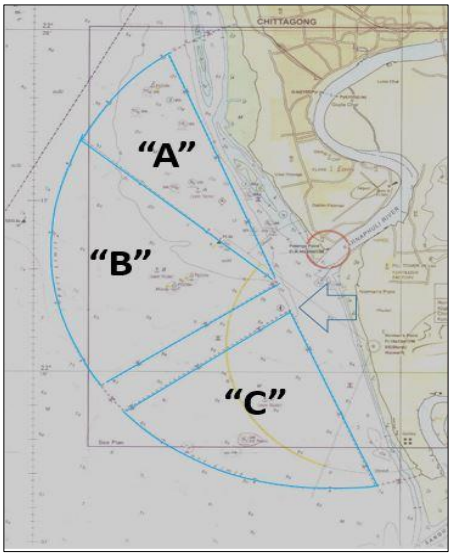
British Admiralty Chart-84



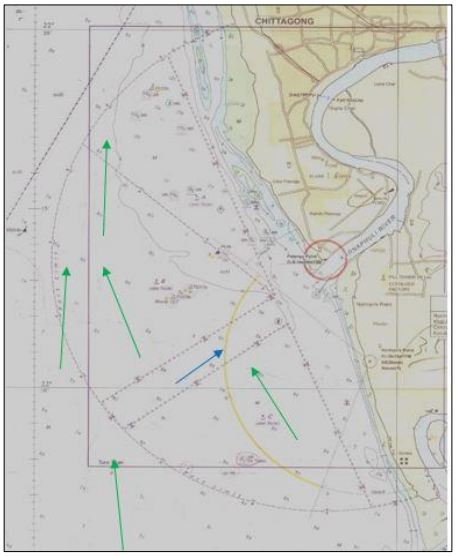
Shallow areas at the Outer Bar

Designated anchorage of Chattogram Port

- There are three designated anchorage at Chattogram namely Alpha, Bravo & Charlie Anchorage.
- Anchorage "A" is suitable for vessels up to 10.5m draft although there are a few areas where vessels over 11m draft can also anchor.
- Anchorage "B" is suitable for vessels up to 8.5m draft and
- Anchorage "C" is suitable for vessels up to 8.0m draft

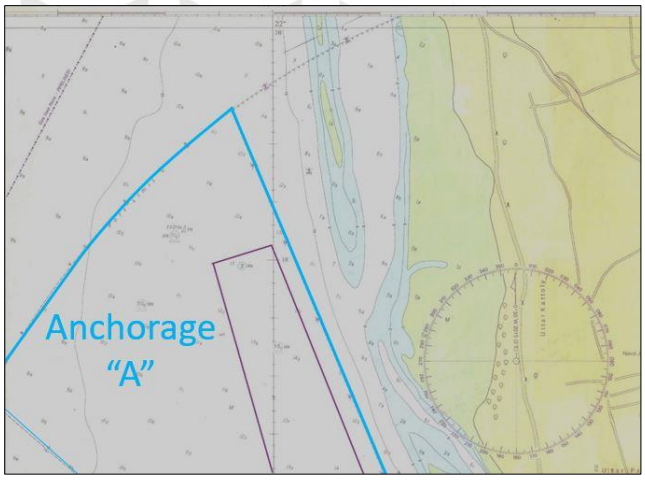


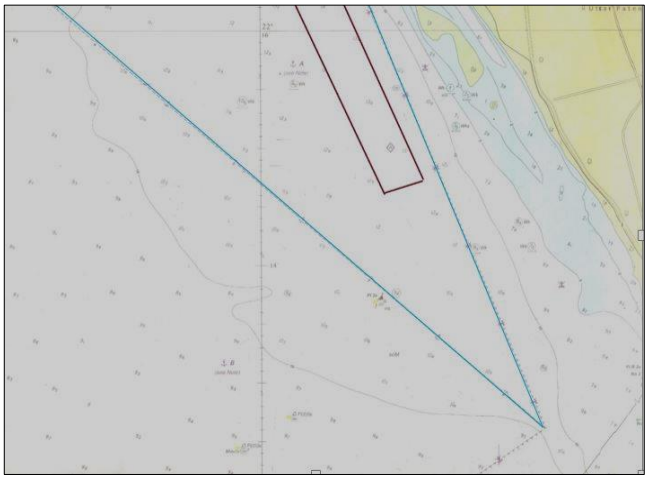
Anchorage A, B & C



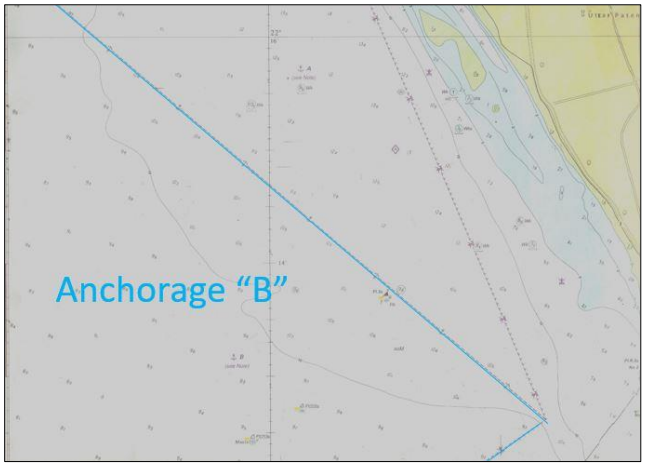
Directions for approaching at Anchorages

Anchorage "A"- close up

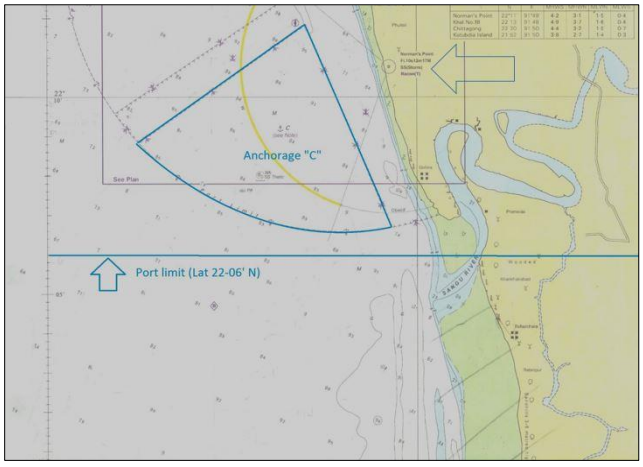




Anchorage "B"



Anchorage "C"



Error in passage planning

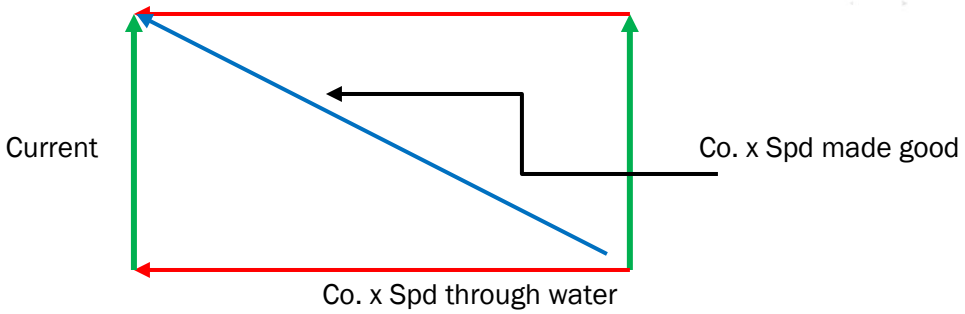
Ideally vessels should arrive at the anchorage at the time of high water when the tide is slack so that vessels do not drift on to anchored vessels during maneuvering. This can be achieved by passing Norman's Pt. Lt. Ho. at the time of High Water as mentioned earlier. Vessels should start from Kutubdia at about 3 hours before HW at Norman's Pt. and maintain 6-7 Knots speed with a following flooding tide.

But in many cases it is not done and vessels find themselves arriving at the Anchorage too early when the tidal current is strong and height of tide is inadequate which makes maneuvering difficult for the deeper draft vessels causing collision or grounding.

Maneuvering error

Most accidents at Chattogram Anchorage occurs due to maneuvering errors by ships. Errors are mostly as follows:

1. Crossing the bow of an anchored vessel
2. Misconception of drift resulting from strong tidal current
3. Misinterpretation of ECDIS



ECDIS misinterpretation



Making mistake by considering co. x spd. through water instead of considering co. x spd. made good represented by true vector.

Collision while approaching for Pilot

Chittagong is a tidal port and pilotage in an out of the harbor is always done during flooding while the tide is rising. The outgoing ships are piloted first and then the incoming ships receives pilot and the

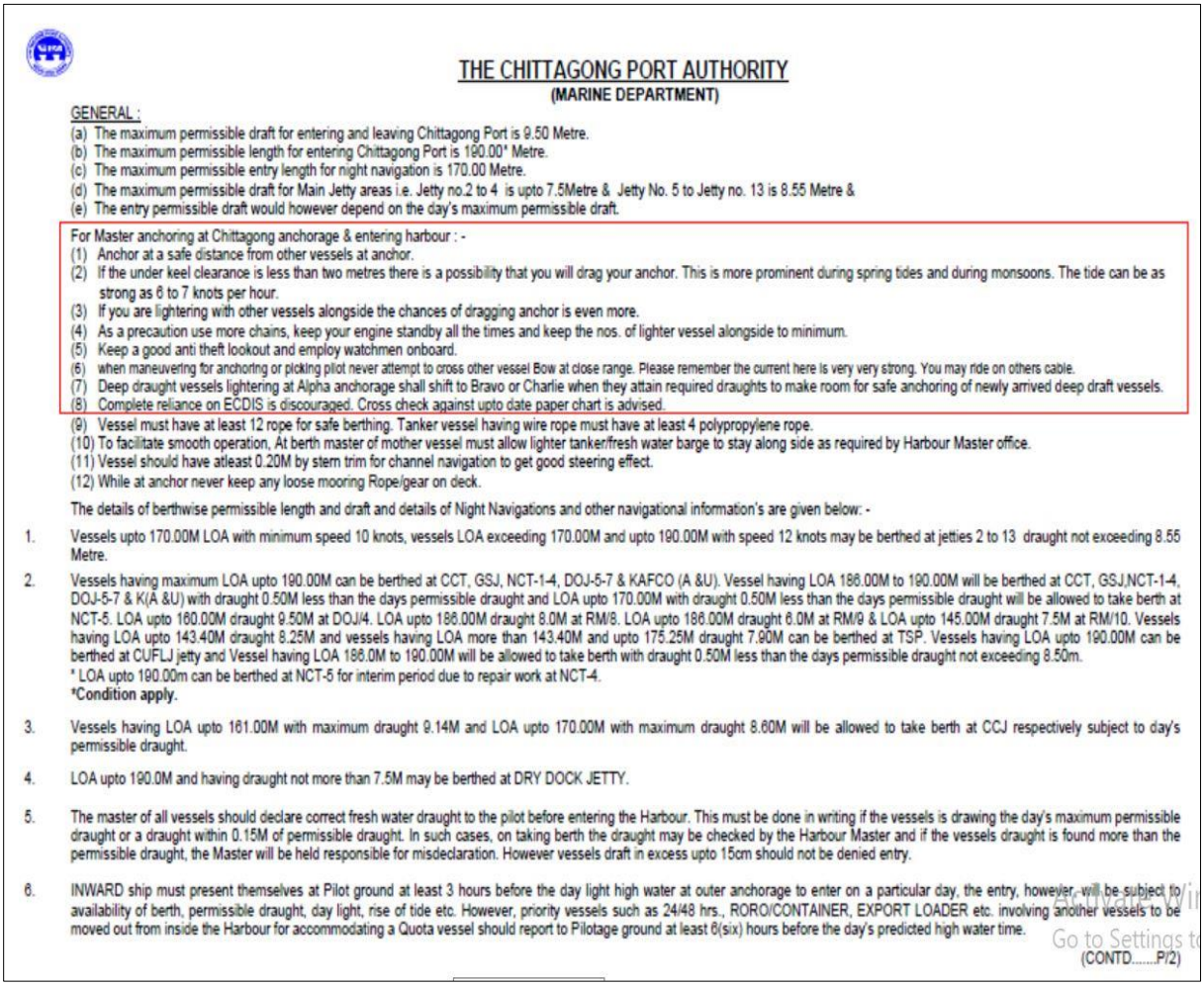
vessels are instructed to come to the pilot ground at a particular time usually about 3 to 1 hour before High Water when the tide is quite strong.

Ideally vessels should approach for pilot along the approach channel free from anchored vessel adjusting for drift and then turn to head the flooding tide while waiting for pilot.

Sometimes vessels directly approaches for pilot from the south / from Anchorage “C” and fails to stop or turn due to strong tidal current and involve in collision with vessels at anchor at Anchorage “B” close to the approach channel.

Instructions to Mariners by Port

In the website of Chattogram Port Authority, there are clear instructions for vessels anchoring at Chattogram Anchorage and entering harbour. Following these instructions will significantly reduce the number of accidents / incidents relating to seagoing vessels at Chattogram Port.



THE CHITTAGONG PORT AUTHORITY
(MARINE DEPARTMENT)

GENERAL :

(a) The maximum permissible draft for entering and leaving Chittagong Port is 9.50 Metre.
(b) The maximum permissible length for entering Chittagong Port is 190.00* Metre.
(c) The maximum permissible entry length for night navigation is 170.00 Metre.
(d) The maximum permissible draft for Main Jetty areas i.e. Jetty no.2 to 4 is upto 7.5Metre & Jetty No. 5 to Jetty no. 13 is 8.55 Metre &
(e) The entry permissible draft would however depend on the day's maximum permissible draft.

For Master anchoring at Chittagong anchorage & entering harbour : -
(1) Anchor at a safe distance from other vessels at anchor.
(2) If the under keel clearance is less than two metres there is a possibility that you will drag your anchor. This is more prominent during spring tides and during monsoons. The tide can be as strong as 6 to 7 knots per hour.
(3) If you are lightering with other vessels alongside the chances of dragging anchor is even more.
(4) As a precaution use more chains, keep your engine standby all the times and keep the nos. of lighter vessel alongside to minimum.
(5) Keep a good anti theft lookout and employ watchmen onboard.
(6) when maneuvering for anchoring or picking pilot never attempt to cross other vessel Bow at close range. Please remember the current here is very very strong. You may ride on others cable.
(7) Deep draught vessels lightering at Alpha anchorage shall shift to Bravo or Charlie when they attain required draughts to make room for safe anchoring of newly arrived deep draft vessels.
(8) Complete reliance on ECDIS is discouraged. Cross check against upto date paper chart is advised.
(9) Vessel must have at least 12 rope for safe berthing. Tanker vessel having wire rope must have at least 4 polypropylene rope.
(10) To facilitate smooth operation, At berth master of mother vessel must allow lighter tanker/fresh water barge to stay along side as required by Harbour Master office.
(11) Vessel should have atleast 0.20M by stern trim for channel navigation to get good steering effect.
(12) While at anchor never keep any loose mooring Rope/gear on deck.

The details of berthwise permissible length and draft and details of Night Navigations and other navigational information's are given below: -

1. Vessels upto 170.00M LOA with minimum speed 10 knots, vessels LOA exceeding 170.00M and upto 190.00M with speed 12 knots may be berthed at jetties 2 to 13 draught not exceeding 8.55 Metre.
2. Vessels having maximum LOA upto 190.00M can be berthed at CCT, GSJ, NCT-1-4, DOJ-5-7 & KAFCO (A &U). Vessel having LOA 186.00M to 190.00M will be berthed at CCT, GSJ,NCT-1-4, DOJ-5-7 & K(A &U) with draught 0.50M less than the days permissible draught and LOA upto 170.00M with draught 0.50M less than the days permissible draught will be allowed to take berth at NCT-5. LOA upto 160.00M draught 9.50M at DOJ/4. LOA upto 186.00M draught 8.0M at RM/8. LOA upto 186.00M draught 6.0M at RM/9 & LOA upto 145.00M draught 7.5M at RM/10. Vessels having LOA upto 143.40M draught 8.25M and vessels having LOA more than 143.40M and upto 175.25M draught 7.90M can be berthed at TSP. Vessels having LOA upto 190.00M can be berthed at CUFLJ jetty and Vessel having LOA 186.0M to 190.00M will be allowed to take berth with draught 0.50M less than the days permissible draught not exceeding 8.50m.
   * LOA upto 190.00m can be berthed at NCT-5 for interim period due to repair work at NCT-4.
   ***Condition apply.**
3. Vessels having LOA upto 161.00M with maximum draught 9.14M and LOA upto 170.00M with maximum draught 8.60M will be allowed to take berth at CCJ respectively subject to day's permissible draught.
4. LOA upto 190.0M and having draught not more than 7.5M may be berthed at DRY DOCK JETTY.
5. The master of all vessels should declare correct fresh water draught to the pilot before entering the Harbour. This must be done in writing if the vessels is drawing the day's maximum permissible draught or a draught within 0.15M of permissible draught. In such cases, on taking berth the draught may be checked by the Harbour Master and if the vessels draught is found more than the permissible draught, the Master will be held responsible for misdeclaration. However vessels draft in excess upto 15cm should not be denied entry.
6. INWARD ship must present themselves at Pilot ground at least 3 hours before the day light high water at outer anchorage to enter on a particular day, the entry, however, will be subject to availability of berth, permissible draught, day light, rise of tide etc. However, priority vessels such as 24/48 hrs., RORO/CONTAINER, EXPORT LOADER etc. involving another vessels to be moved out from inside the Harbour for accommodating a Quota vessel should report to Pilotage ground at least 6(six) hours before the day's predicted high water time.

(CONTD.....P/2)

Instructions to Mariners by Port

7. OUTWARD ship of light draught will leave with first day light flood & ship with maximum draught for a particular day will leave about 2 hours before the high water.

8. SHIP MOVEMENT generally commences about 4/5 hrs. before the day's High water Time.

9. MOVEMENT OF VESSELS on the day's marked AM & PM depend upon draught, rise of tide, availability of berth & available day light. All concerned are to consult the Harbour Master 24hrs. before the movement. In such cases Ship's with day's maximum draught will be handled during AM or PM depending on the availability of day light hours.

10. DURING the spring tide/freshets/foul weather vessels under 7 knots will not be normally handled and all such vessels will be classed as GRADE-II for operational purposes and shall be handled conveniently. Agents of such vessels are required to consult the undersigned well in advance.

11. The port will not be responsible if the declared draughts are reduced due to conditions arising out of freshet effect or other causes which cannot be forecast. Owners & Owners agent are advised to consult the undersigned regarding deep draught vessels in advance.

12. Vessels entering or leaving port must have full power on main engine & deck machinery's, both anchors with full length of chain must be available for use at all time.

13. All vessels entering/leaving port shall display their signal letters.

14. (a) **Arrived/Departed Ship** : Line drawing $22^{0}06.0^{/}$ N from land towards sea, Vessel Crossing line will be treated arrived ship (North Bound) at Chittagong Port & allocation of berth will be on first come first serve basis.
(b) VTMIS has been installed by CPA, system is running and operational round the clock.
(c) Ship Masters are required to anchor clear of the "PROHIBITED ANCHOREAGE".
(d) Ship Masters must not anchor their vessels near the River entrance.
(e) Ship Masters must manoeuvre with great care while embarking/disembarking pilots.
(f) Pilot ladder as per regulation must be provided.
(g) Ship Masters must note that the strong tidal conditions prevail at outer anchorage and utmost. care must be taken while manoeuvering anchoring or heaving up anchors.
(h) Crossing of bow at close range shall never be attempted.
(i) Vessels proceeding to anchor at Chittagong Roadsteads with more than 8.0m draft and specially vessels to be engaged in lightering operation must use at least 9 shackles of chain in water.
(j) Keep the second anchor and engines standby for immediate use. This is particularly important in monsoon season.
(k) While anchoring master should keep minimum 5 shackle distance from other vessel, and avoid Fore and Aft line of another vessel.
(l) Vessel should anchor in designated anchor berth with the approval of VTMS control room. Scrap vessel should anchor in the designated area for them.

15. Ship master are advised in their own interest to maintain watch on the Fo'castle and poop deck while the vessels are at outer anchorage.

16. Ship master must sent their ETA, DRAUGHT and other particulars to the undersigned well in advance.

17. All ships in port to provide requisite "RAT GUARDS" in the mooring ropes.

18. Ship master on arrival and prior to departure, are required to ensure that the vessels draught marks are clearly visible for pilots to read the draught correctly.

19. Ship master are required to ensure that no major chipping of ships side is carried out while their vessels are in port.

20. UNDUE "SMOKING" from the vessels funnel within the port area is strictly prohibited.

21. DICHARGING of water on the jetty and listing of vessels while alongside is strictly prohibited.

22. Karnafulli being tidal river, it is essential for vessels entering port to have six good ropes (HAWSER & WIRE) forward and similar six ropes aft. for mooring purpose.



Captain M A Fasihur Rahman AFNI MIIMS

Captain M A Fasihur Rahman AFNI MIIMS is a Master Mariner and has over nineteen years' experience of working on board ocean going ships including four years command experience. He is one of the Directors of the nationally & internationally renowned marine industry survey company Marinecare Consultants Bangladesh Limited and working in the fields of Marine Industry Survey and Consultancy for the last 15 (fifteen) years. In 2010 he was awarded Diploma with Merit from the International Institute of Marine Surveying (IIMS), U.K. with specialization in Marine Warranty Surveys, Specific Surveys, Marine Accident Investigation and Insurance Damage Surveys (Hull). He is also a Liberian Flag State Auditor. He is former General Secretary of MSAB (Session 2013~14) and former Chairman of the Nautical Institute, Bangladesh.

The Salvage of MV Haian City at Chattogram Port, Bangladesh (May - June 2022) By Prantik Bengal Salvage & Diving

Mar. Engr. Md. Golam Sarwar

The motor vessel Haian City is a 2008 built, double hull, Vietnamese flagged, 21458 MT dwt, 172m length over all, 1577 TEU capacity cellular container vessel owned by a Vietnamese company HAI AN TRANSPORT AND STEVEDORING J.S.C.

She had sailed out from the Chattogram Port on 14th April 2022 after completion of cargo operations and port formalities, for her next port of call Singapore Port with 1105 TEUs of containers onboard, out of which 718 TEUs were fully laden while the rest were empty. Regrettably, while underway, the vessel collided with another tanker vessel on the same day at Kutubdia Roads, sustaining major damages causing severe breach of hull on her port side between cargo holds no. 4 and 5 of the ship, extended to adjacent fuel tank and ballast tank including inner hull and tank top of the both cargo holds. The hull breached on an extreme level about 8 meters by 10 meters in size. The damage sustained was an unprecedented event in the history of Bangladeshi waters. The ship owners, with the approval of vessel insurers, awarded this critical salvage job to 'Prantik Bengal Salvage & Diving', a concern of Prantik – a group of specialized marine companies with headquarters in Chittagong, Bangladesh. Chattogram Port Authority also approved Prantik Bengal as the salvage contractor. At the time of the collision, the vessel carried almost $100 million worth of export cargo.

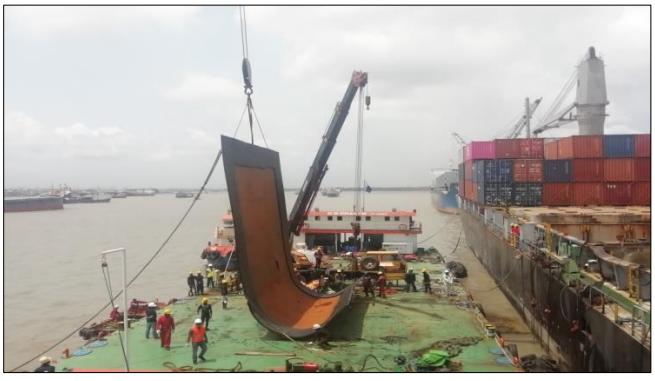


Haian City at Kutubdia Roads after the incident

The vessel was brought inside the Karnaphuli River channel with the utmost safety, escorted by 5 tugs. The vessel's draft was 10.8 meters with having list 7 degree to her port side, while her a ballast tank, a fuel tank and two cargo holds were flooded. A vessel with such draft and unusual stability was never allowed to enter in the history of the Chattogram Port. Upon underwater inspection of the damaged area, Prantik came up with a salvage plan and methodology which was then approved by the ship owners, insurers, Class NKK and the Chattogram Port Authority.


Haian City at River Karnaphuly approaching berth for repairs

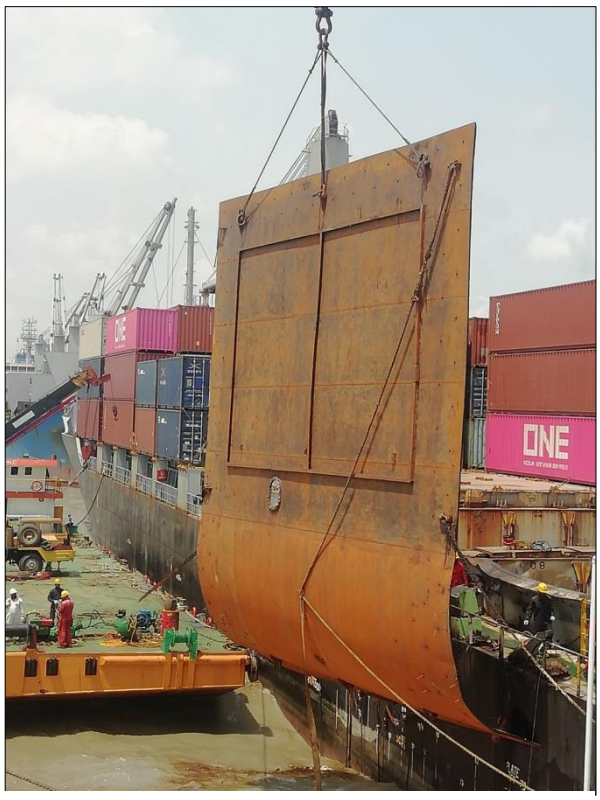
The methodology of salvage and initial temporary repairs was fundamentally divided into two stages. The first being to seal off the ruptured shell on the port hull with a temporary steel patch of 10 meters by 12 meters in size of 12 mm thickness steel plate in combination with 50 mm rubber gasket seal. The second followed after dewatering of the fuel tanks, ballast tanks and cargo holds, 2 steel structure boxes would be fitted in the severely damaged cargo hold along the inner hull. It took the combined effort of 40 salvage crewmembers who worked relentlessly over a period of 45 days to make the vessel sea worthy. The steel patch was fixed to the hull underwater by 104 toggle bolts with accurate precision for a positive sealing.


Steel patch (curved at one end for bottom hull) prepared with rubber gasket



The steel patch fixed. Maximum portion was in water.

On successful sealing work, the dewatering operation from the cargo holds and fuel tanks started. On completion of the dewatering, it was found that the shell plates were forced into the containers inside the cargo holds. Since a lot of eyes were upon us to get the job done safely as soon as possible, the decision to make steel structure boxes was taken. It required the containers to be removed from the cargo holds for accessibility of wielding works. The ingress of water inside the cargo hold caused the containers to become overweight beyond the safe working limit of the vessel's crane; thus, the decision was taken to cut out the containers to lighten the weight by removing the cargoes from the containers.



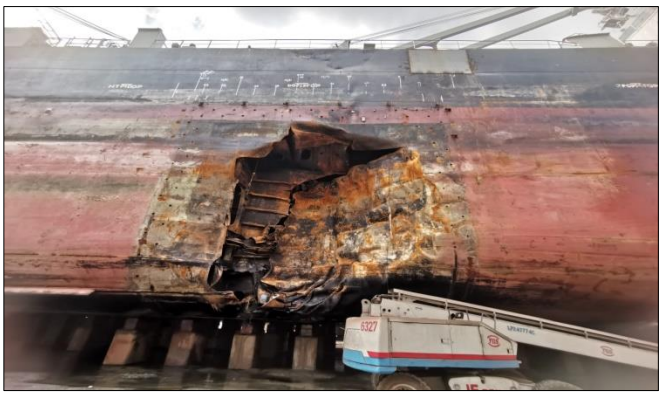
The steel patch erected and preparing for fixing

With the utmost efficiency, Prantik managed to build, lift and install the boxes on the cargo holds by welding. Having it inspected by the Class surveyor and the necessary tests done, the vessel was deemed sea worthy. The removed containers were loaded back on the ship and the vessel stability calculation was done.

Finally, the vessel sailed out from the repair jetty of Chattogram Port to its next destination, Singapore, where the permanent steel works would take place. The vessel reached Singapore safely to discharge all containers and eventually, docked at the shipyard for permanent repair.



Fabrication of huge boxes in the cargo holds


View of ruptured hull, vessel at dry dock for permanent repairs

This salvage operation was yet another milestone event in the history of Prantik's salvage works. Had the containers fallen off the ship and blocked the port channel, the estimated costs to the Bangladeshi

economy could have potentially crossed 10 figures in USD. Prantik time and again takes up such challenging marine emergency jobs in Bangladeshi waters, completing them the best and thus taking immense pride to serve our nation as such. Prantik thanks the ship owners, insurer surveyors and the Chattogram Port Authority for having complete trust and confidence in Prantik.

Visit the link https://www.youtube.com/watch?v=SofCH1wZ_Wc to view the Video Presentation Or

Scan the QR Code



Md Golam Sarwar CEng CMarEng FIMarEST FRINA FCILT MBA MSNAME PGD
Managing Director & Founder, Prantik Group

Marine Engineer Md Golam Sarwar holds numerous degrees including a Class-1 Marine Engineering (UK), MBA in Digital Technology Management (Royal Roads University, Canada), Post Graduate Diploma in Maritime Law (London Metropolitan University, UK), and has done a Critical Design Thinking course from MIT, USA. He is a Chartered Engineer of the Engineering Council, UK, Chartered Marine Engineer and Fellow of the Institute of Marine Engineering, Science & Technology, UK, Fellow of Royal Institute of Naval Architects, UK, Member of Society of Naval Architects and Marine Engineers, USA, and Fellow of the Chartered Institute of Logistics & Transport, UK.

Synopsis of Bangladesh Shipbuilding Industry

Mar. Engr. Arifur Rahman Khan

International Shipbuilding (building for foreign buyers) was altogether a new chapter for Bangladesh until 2007. International standard (Classed) Shipbuilding is a complex, highly technical, & skilled labor-intensive industry, requiring adequate infrastructure, skilled manpower and long term investment.

The sector with its merits & demerits, and ultimate outcome/benefit were not much known to the Shipping Industry and /or relevant departments/authorities of the country. Last one decade there were numbers of seminars, features, news, high-level presentations etc., in order to create awareness & affinity by the investors, stakeholders & Govt. policy makers which has generated an interest in the shipbuilding industry by the Govt. and the Private sectors of Bangladesh. This has eventually created a very good positive impact in the Local Shipbuilding Industry but could not create much impact in the international market.

Till 2007, there was not a single vessel built in Bangladesh, under supervision and approval of Classification society. During this time drawing approvals and construction supervision of the vessels were mostly a paper work. Vessels were constructed from few proto type designs and mostly on experience. Naval Architects passing from BUET hardly got any chance to hold on their own profession, many of them joined other profession for their lively hood.

Thanks to the entrepreneurship and the courage demonstrated by the sponsors of Ananda Shipyard and Western Marine Shipyard to explore the possibility of building ocean going vessels for the international buyers under strict rules and regulation of the Classification Society which also has to comply with all IMO rules and regulations for the vessels plying over seven seas.

While building vessels under classification society for ocean going vessels for the foreign buyers, Bangladesh Ship Building Industries gradually developed the knowhow and the skilled manpower to build quality vessels, which has largely benefitted local shipbuilding industries and the regulatory bodies of Bangladesh to improve the quality of vessels for the inland and coastal water. It is of great encouragement that recently Department of Shipping has made it mandatory for the new Coastal Vessel to be fully Classed vessel. It is now a proven fact that Bangladesh Shipbuilding Industries are fully capable of building all types of vessels with very good quality for the inland water with much less price than the imported one's. Bangladesh shipyards are now building very good Tug Boats, Deep Sea Fishing Trawlers, Tankers, Coastal Container vessels, LPG Vessels, Self-unloading bulk carriers and many other types, for the local market with good reputation. The industry need Govt. Support to discourage/ban any import of these kinds of vessel which are already being made by the local industries.

The export oriented shipbuilding industries which started their ambitious venture in 2006 to establish Bangladesh as an exporter of unrestricted, ocean-going vessels to the overseas client and to render the country another avenue/opportunity for diversification of export, is yet to achieve commercial sustainability & eventual financial success. There is no confusion about our technical capability to build different types of ocean going and specialized vessel; the challenge is how to make it commercially a successful venture. Still there is no third shipyard in Bangladesh that took the challenges of exporting vessels other than Ananda and Western Marine. The reasons may be that both the leading shipyard of the country are struggling to make it viable & profitable, though they have exported good number (over sixty) of vessels to the foreign buyers. Local Companies initiating the Foreign Shipbuilding, have had multiple reasons for not performing well in the financial aspect, which can be summarized, as follows:

1. Lack of comprehensive understanding of the Shipbuilding as an industry with respect to local involvement & global impact.
2. Ambitious speculation without proper risk assessment.
3. The business and its overall likely impact were hazy, uncertain at that time & not fully explored.
4. Lack of expertise while bidding for the orders.
5. Desperation to grab foreign orders.
6. Great shipping recession of 2008 & 2009 which had compelled the ordering builders/owners not to take delivery of the vessels and place new orders. Cancellation was rampant.
7. Very high rate of bank borrowing.
8. Lack of cash flow.
9. Late delivery resulting from various hiccups, fund constraints, & unforeseen circumstances.
10. Lack or inappropriate Market segment focusing.
11. Lack of repeat or similar kind of orders.
12. High investment & difficulties, to train the manpower (first generation skilled hands for shipbuilding).
13. Aggressive development of the shipyard & its infrastructure, resulting in under utilization of facilities and manpower due to non-matching of orders.

14. Failure to apprehend the market volatility.

Now the question is that how to make the export-oriented shipbuilding industry profitable and viable so that the time and energy invested on this sector in last one decade can be turned into a major diverse export sector for the country. For the general or indigenous investor in shipbuilding of Bangladesh, our landscape, rivers and sea, estuarial terrain, trained manpower, suits for building small range of specialized vessels. I will not go into the multimillion-dollar investment programme where big ships are built inside huge docks.

For the general investors, who are interested in foreign shipbuilding project, I will say from my experience of last one decade, that foreign shipbuilding (exportable) can be good investment, if certain discipline can be maintained during the process. The following are the key areas to make it happen, although not limited to:

1. Proper feasibility study and project planning.
2. Target on small range vessels, within max 120m length, 20m breadth and 4.5 m draft.
3. Target type of vessel you want to build, such as Tug Boat, Patrol Vessel, Supply vessels etc. which has good overseas demand.
4. For a small shipyard, Appx 4-acre land will be adequate with few covered sheds and a good quality control team.
5. Avoid making different varieties of vessels till such time your infrastructure supports comfortably & safely.
6. Work for repeat orders or similar kind of orders.
7. Focus and develop your expertise in particular type of vessels.
8. Regularly attend overseas fair and meeting focused on your specific type of vessels.
9. Try to draw Policy makers attention, & Seek Govt. patronization in this type of meeting and forum.
10. Try to ensure Govt refund guarantee for the foreign new building projects.
11. Engage experience and expert people with good academic background who has overall expertise on all the departments of shipbuilding.
12. Ensure your commitment & also of the employees to build quality vessel.
13. Foreign shipbuilding under classification society is a very controlled process, so experienced and dedicated good work force has great importance to its success.
14. Try to avoid bank finance for infrastructure building, failing which, try to avail soft term loan for a longer tenure for the same.
15. Maintain strict financial discipline.
16. Design shipyard in such a way that new building and docking of vessels can be done in parallel. Plan your shipyard to dock vessels with minimum 4.5m draft so that most of the inland and coastal vessel can be docked. This will generate constant flow of revenue even if there is slowdown in new-building activities. Shipyard owner will have good liberty for better bargain in the new-building contracts.

Some of the world class ships built in Bangladesh:



MPC Vessel–Built 2010, for Germany. Made in Bangladesh



Passenger Vessel Mataliki – Built 2015,
For New Zealand. Made in Bangladesh



Passenger Ferry – Built 2015
for Denmark. Made in Bangladesh



OPV–Daria, 35 Knots, Built 2017
For Kenya. Made in Bangladesh

Over the last decade, the foreign shipbuilding sector of the country have developed, seasoned & matured in many ways at the expense of the two-pioneer shipbuilding Company, Ananda & Western Marine Shipyard. Now we have a strong and confidant work force to take over any international projects. Trained work force from Ananda and Western Marine is now contributing to build quality vessels all over Bangladesh. As a country, we have exported MPC vessels, Passenger Vessels, Bulk carriers, Tug Boat, LCT vessel and Offshore Petrol Vessel (OPV) to Germany, Ecuador, Denmark, New Zealand, Tanzania, Pakistan, India and Kenya. Over the years, the industry has groomed, learned a lot from its mistakes and success, alike. Now given the positive mind set from the Government and the Private sector, we can nurture the expertise that we have achieved so far, and make this industry an effectively diversified export-oriented venture of the country. Thus it can contribute to the foreign reserve as well as generate employment for skilled & semi-skilled workers.

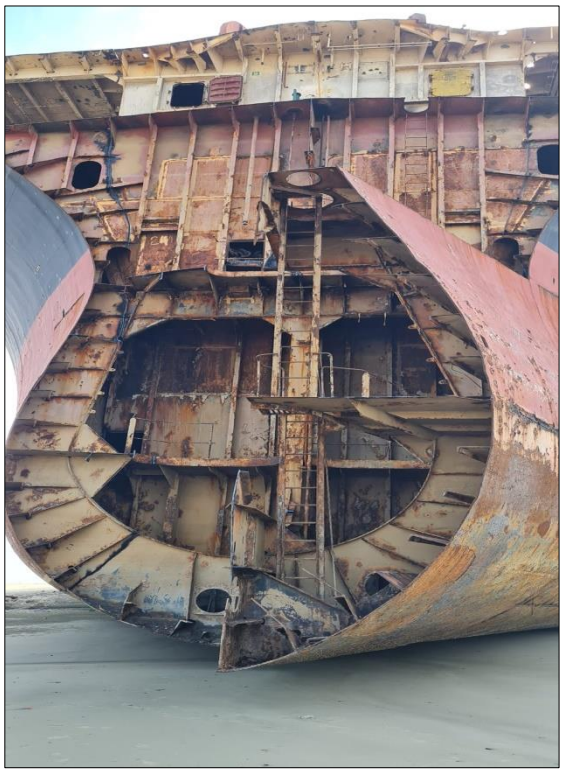


Arifur Rahman Khan CEng CMarEng FIMarEST (UK)
Ex-Chairman, Institute of Marine Engineers, Science and Technology
BMA 19 E.

M.V Crystal Gold- A Challenging Demolition at Parki Beach

Mar. Engr. Mohammad Mahbubur Rahman

Introduction



I am engaged in Ship Recycling Industry since 2011 as a ship recycling consultant. Under my supervision, different types of vessel were dismantled in Ship Recycling Industries in Bangladesh. As a marine engineer, it was a great opportunity to engage in ship recycling activities as the recycling process completely carry out under IMO guidelines. Applicable resolutions are MEPC 196 (62)-2011, MEPC 210 (63)-2012, MEPC 211 (63)-2012, MEPC 222(64)-2012, MEPC223 (64)-2012 and MEPC 269(68)-2015. Initially ship recycling process was monitored and guided by the Ministry of Environment and later our honorable Prime Minister Sheikh Hasina declared it as an Industry and Ship Recycling activity switched under the Ministry of Industries. Bangladesh is a nature-dependent country and our socio-economic dive force is our nature. I should say we are one of the strongest nature-adopted populations in the world. The ship recycling industry is a gift of nature. In the Year 1960, a Devastating Cyclone

grounded MV. Mac Alpine on The Coastal Belt of Chittagong, Gave Birth to A Misfortune. Later on in 1964, the Owner of Alpine Decided to Dismantle the Ship, Thus Misfortune Turned into Fortune. Slowly ship recycling started in the northern part of Chittagong commercially in 1980. Very recently Bangladesh Government declared a "Ship Recycling Zone" for this specialized activity located at northern Chittagong (Fauzdarhat to Kumira). By law, it's restricted to carry out any ship recycling activity out of the declared zone. But the demolition of M.V Crystal Gold was a critical and exemplary consideration by the Department of Environment along with other related departments as per guidance from the Honorable Supreme Court. Initially, there were several attempts to float the vessel and remove it from the grounded position but it was in vain. Finally, there was a feasibility study and survey to declare the vessel as "Unable to remove from current location". The demolition story begins.

Background

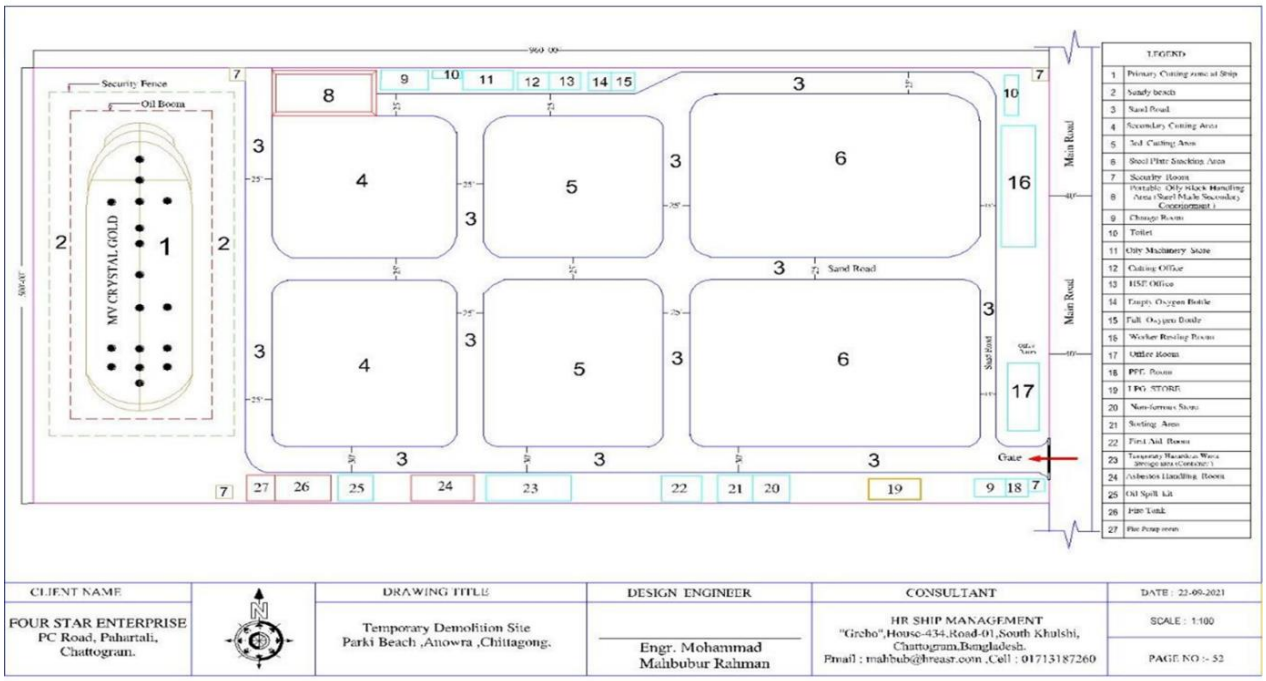
M.V. Crystal Gold was a running vessel owned by a Bangladeshi Ship owner. The Vessel was grounded on 13th May 2017 by Cyclone Storm "MORA at Parki Beach, Anowara, Chittagong. The Ship was a Bulk carrier, LDT 5687 MT and it was under the Registrar General & Marshal of the Supreme Court of Bangladesh. In an open auction bedding, a local entrepreneur purchased the vessel from the Admiralty Court. After the auction for about 3.5 years, the vessel was untouched due to an environmental embargo. There were several instructions and monitoring guidelines for the demolition of the vessel. I was fortunate to engage with this massive and critical demolition of the vessel as a recycling consultant.

Why it was necessary to remove the vessel from Parki Beach

Parki Beach is a sandy beach in Bangladesh. This beach is between a river and a delta in Anwara of Chittagong. It is 20-kilometre (12 mi) from the city of Chittagong. This beach is situated near the Karnaphuli River. Particularly during sunset, the sky takes on a different form and the sea below also transforms into something which is utterly majestic to be expressed in plain words. The vessel" Crystal Gold" grounded off Parki Beach which was causing a hindrance to siltation at the shoreline due to obstruction by the stranded vessel. As a result, local forestation is getting uprooted due to a lack of siltation at the shoreline. The tourist spot was gradually eliminated due to the damaged shoreline. On the other hand, several accidents happened due to careless movement around the grounded ship by tourists.

Demolition Process

Initially, an Environmental Management Plan was prepared to get approval from the Department of Environment. Once it was approved, a temporary ship recycling facility plan was prepared and the site was declared "Restricted "for unauthorized entry.



Drawing: Temporary site preparation

The following pertinent laws and guidelines were considered during planning:

- Bangladesh Ship Recycling Act 2018
- Bangladesh Ship Breaking and Recycling Rules 2011
- Bangladesh Environment Conservation Act, 1995 (Act, 1 of 1995 amended on 2010
- Bangladesh Environment Conservation Rules 1997
- Bangladesh Labour Act, 2006
- Bangladesh Labour Rules 2015
- ODS Control Rules 2004
- Hazardous Waste and Ship-Breaking Waste Management Rules 2011
- Occupational Safety and Health Regulations- OSHA 2004
- MEPC 210(63)- 2012 Guidelines for Safe and Environmentally Sound Ship Recycling
- MEPC 196(62) 2011 Guidelines for The Development of The Ship Recycling Plan

Preparation of the IHM Survey and SRP (Ship Recycling Plan)

Before the demolition of a vessel, it is mandatory to carry out IHM (Inventory of Hazardous Materials) followed by preparing ship-specific SRP. Job hazard analysis and risk assessment were conducted and Hazmat samples were taken for lab analysis as part of the IHM survey. Downstream waste management was prepared as per the IHM report and included in Ship Recycling Plan.

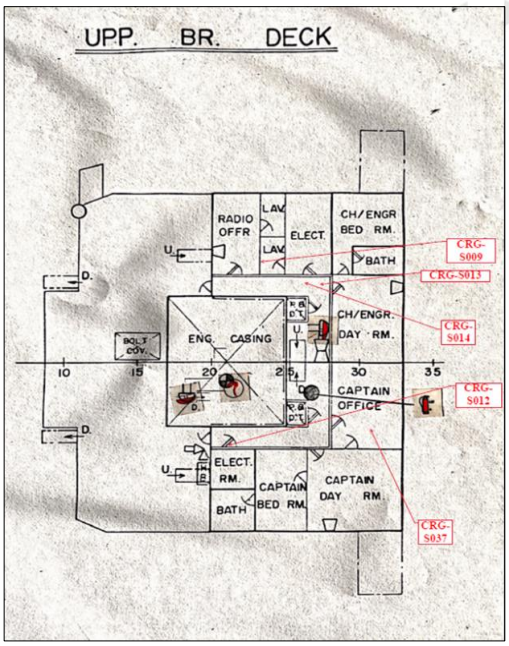
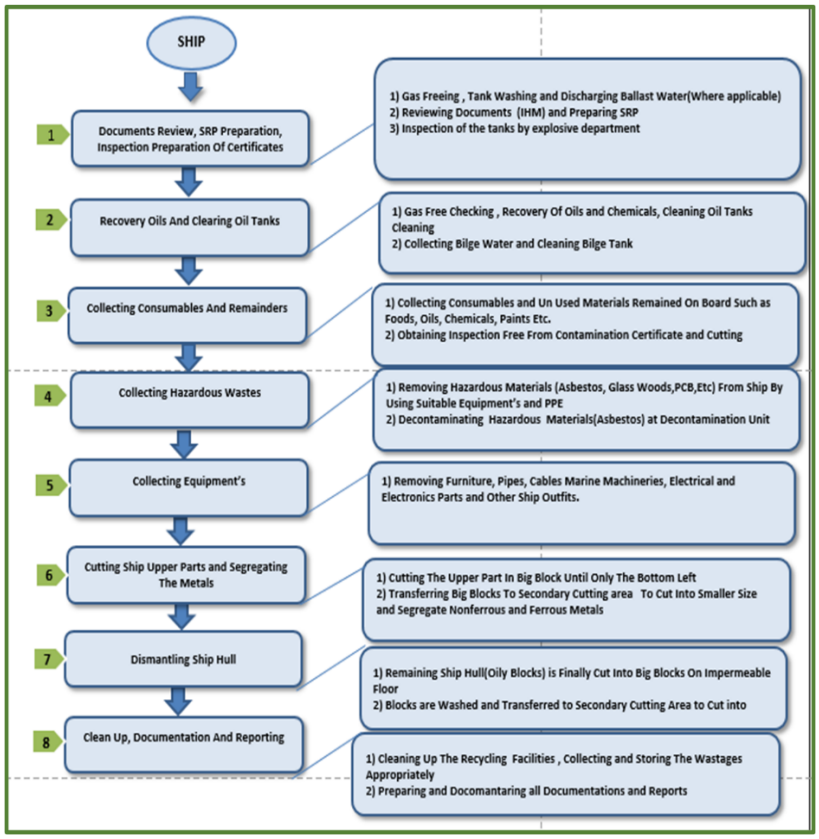


Fig: IHM Sample Location Marking

The Recycling activity flowchart was as followed:



Demolition Monitoring process

- Job-specific training was conducted
- At-site fire and emergency preparedness training carried out
- A daily block monitoring log was maintained
- Daily Activity Log was maintained
- Downstream waste management was logged
- Followed all checklists and OCP related to ship recycling
- A temporary first aid center and firefighting arrangements were established
- A temporary waste storage facility was set up.

Cutting sequences

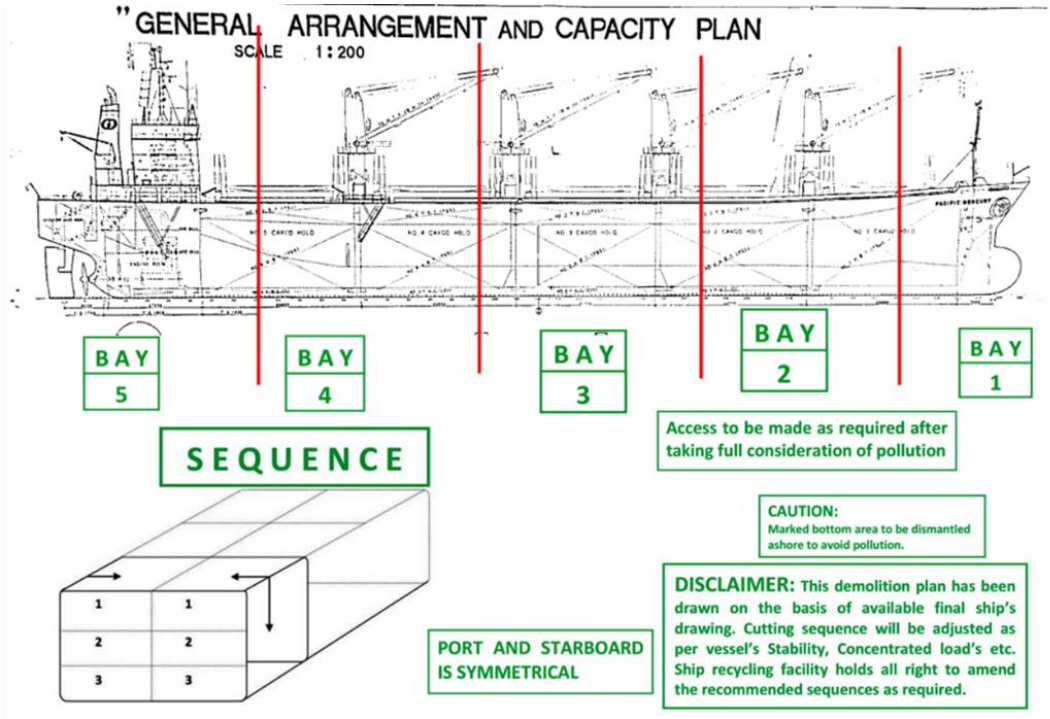
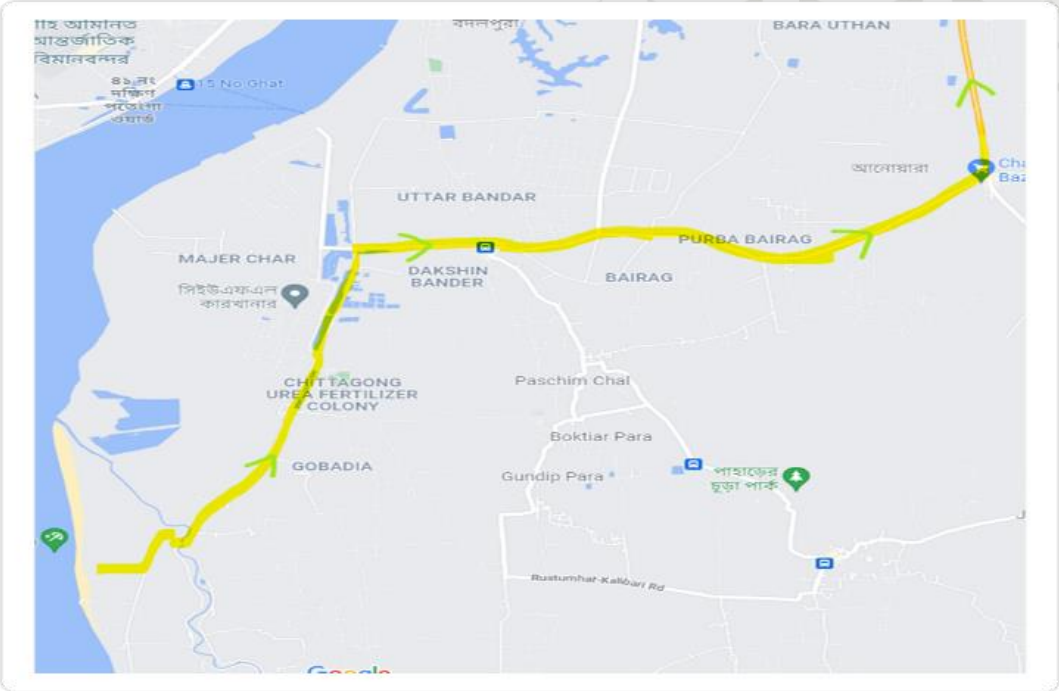


Fig: Cutting sequence plan

Material movement route

As the demolition site was restricted and remote from the commercial areas, it was the threshold to maintain a safe route to carry materials collected from the vessel. A feasibility study was made and a safe route was established.



Conclusion

It took 2.5 months to complete the total project with a successful outcome without any incidents. Periodic environmental monitoring was carried out during the total tenure. A technical team was engaged during the total process. After the completion of the demolition process, Parki Beach tourist place was restored and economic activities started again. The shoreline reformed naturally by tidal effect and sand restoration. I was privileged and honored to work as a Ship recycling Consultant on this challenging project.



Mar. Engr. Mohammad Mahbubur Rahman CEng, FIMarEST
Ship Recycling Consultant (Lloyd's Academy, UK)
CEO, HR Ship Management

Mohammad Mahbubur Rahman, CEng, FIMarEST. is a Chartered Marine Engineer and Fellow of the Institute of Marine Engineering, Science, and Technology. He is a Marine and Ship Recycling Consultant (Lloyd's Academy, UK) and founder of HR Engineering and Ship Repairs Ltd. and HR Ship Management Ltd. Mohammad Mahbubur Rahman is involved in various industrial safety training and implementation issues. He is the Vice President of Bangladesh Merchant Marine Officers' Association (BMMOA) since last two consecutive sessions.

IIMS and the Professional Marine Surveyor

Mike Schwarz

Let me start this article by sending my hearty congratulations to the Marine Surveyors Association of Bangladesh (MSAB) for reaching their milestone 30th anniversary; and thanks to President, Captain Mahfuzul Islam, for his kind invitation to write this article.

Marine surveying is a noble and skilled profession going back in time. But these days people who engage a professional surveyor, someone who really knows his/her craft, seemingly want to pay as little as possible for their services. I recently heard IIMS (International Institute of Marine Surveying) President, Peter Broad, addressing the Institute's Conference in Southampton. He said, "Fees chargeable are only going downwards in real terms and are at the same level now as they were five or more years ago." Yet everything else in the world is going up in price, (or so it seems), so why are surveying fees not keeping pace and what is the disconnect with the value of employing a professional surveyor?

I find it extraordinary that people want to drive down the cost of fees for such an important and vital service that is an integral part of the shipping industry and process. Why would someone negotiate rates down when the survey and subsequent report may be the difference between keeping people safe at sea, or not, to say nothing of the valuable assets and cargoes they carry too.

It seems that those in the shipping and boating industry just do not value the work of a marine surveyor highly enough. And I for one agree - they don't! Being a marine surveyor is a tough and uncompromising job at times, but you don't need me to tell you that. Of course, it has compensations too.

In the past decade at the helm of IIMS, I have long argued that marine surveyors should charge a fair price for the work they do which will inevitably vary from country to country. Of course, it is understood there are commercial pressures on all businesses and for sure you can't charge the same hourly or daily rate as a doctor, lawyer or accountant, for example; but you are just as much a professional and expert in your field of work as they are. Certainly in England we would never dream of trying to negotiate a lawyer's daily fee downwards, but haggling with a surveyor over fees is acceptable. Why?

When I took up the post as Chief Executive Officer at IIMS, I thought the main function of my role was to grow the membership. Perhaps back then it was one of the most important considerations. But not so much these days, even though membership has grown appreciably over the years. In my view It is more important to a) drive up the standard of marine surveying across the planet, no matter which organization a surveyor belongs to and b) to spread information about the vital and essential work surveyors are involved with, much of it unseen and unheralded. Many are not affiliated to any membership organisation and whilst on the face of it this may seem to be an issue, it is not necessarily so. Even as a non-member, IIMS can add value to a surveyor's role by disseminating vital information through its various communications channels.

Of course, there must be tangible benefits offered to members of an association or institute and a good communication strategy to keep them fully engaged, or why join? IIMS has worked hard over the years to build its brand and image around the world, not just amongst the marine surveyor community, but also with those who touch the profession. Ten years ago, I would not have been able to have a meaningful dialogue with the Loss Prevention Director of a major P&I Club, as they would not have taken my call. Times have changed. I am regularly in conversation with such individuals as well as with underwriters, insurers, and even senior maritime regulators too. These days IIMS has a presence in the maritime industry and has become recognised and accepted as the leading professional body for the marine surveying profession.

Over the past 20 years the Institute has educated hundreds of marine surveyors who have come through the award-winning and comprehensive IIMS distance learning programme in commercial ship and small craft surveying. For those coming to study without previous sea time or boatbuilding experience, this is a tough course requiring hundreds of study hours to pass and is equivalent to a first year University degree course. But beware of cheap imitations for they are all around you. Inferior qualifications or courses offering a discount of 90% are to be avoided. They are inexpensive for a reason. Always study with a recognised organization is my best advice. IIMS Regional Director, Captain Zillur Rahman Bhuiyan, is always pleased to assist and mentor students studying for the IIMS Diploma.

This leads me to ask where the next generation of marine surveyors will come from. Today's young people seem to have a different work ethic and a totally different outlook on life. They don't want to be

waiting for a ship to berth in the middle of the night in inclement weather – well they certainly don't in the UK! This means as an industry we need to and have a responsibility to enthuse the next generation about the surveying profession and that is a challenge. They will need mentoring too. When a surveyor retires, with him/her goes many years of experience. Consider mentoring a younger surveyor and passing on your skills and knowledge. It can be very rewarding to pass what you know on to another.

The Covid pandemic has changed the lives of most people around the world in one way or another and marine surveyors are no different. The pandemic forced surveyors to approach their work differently. Ships still needed to sail with cargo, but it became increasingly hard to board a vessel (and in some cases impossible) to do the work. So, along came the art of remote surveying utilising a camera at one end linked by the internet to a shore-based surveyor watching the survey being undertaken online. This might work when needing to inspect documents and certificates, but every surveyor I know will tell me they want to get onboard to smell the engine room, to run their hands along parts of the vessel's structure and to use their own eyes and ears to do a thorough and forensic inspection. I remain very unconvinced about the role of remote surveying.

It is not just the disruptive change of remote surveying that is challenging those in the profession these days. The huge shift to decarbonising the shipping industry is now well underway and gathering pace. That means new fuels to contend with, new technology, new propulsion systems, new hull structures too, (including putting modern sails on to ships) – lots of new things for a surveyor to understand. How current and up-to-date is your CPD (Continuing Professional Development)? As technology ramps up almost daily around us, we need to acquire new skills just to stand still, as well as brushing up on what we once knew. Complacency is the surveyor's enemy and a big threat. And it is important to stick to your areas of specialisation. All too often surveyors have got into problems because they have accepted an assignment that does not fully match their skill set and which they are not competent to handle. In many applications submitted for membership of IIMS that are put before the Institute's Professional Assessment Committee for review, the applicant is seeking twenty plus specialisations. I have long argued that a surveyor cannot have more than perhaps five key specialisations. Don't become a generalist, rather stick to your areas of expertise. It is important to note that IIMS thoroughly reviews each application for membership and as an organisation we are only as strong as our weakest member. Those who cannot evidence their specialisations will not be granted them and some are denied membership altogether.

The history of IIMS

In 1990, the first International Marine Surveying Conference sponsored by IMarEST and the Nautical Institute was held in London. Following this conference, a group of likeminded surveyors decided that their profession needed more recognition to meet the demands of the changing maritime world. In April 1991, over thirty surveyors from eighteen countries met at The Baltic Exchange. After a long meeting, the International Institute of Marine Surveyors was formed, more recently changing its name to the International Institute of Marine Surveying, or IIMS for short.

In the early years, the then President encouraged members of the Institute to set up education programmes for the training of marine surveyors; and so, a distance learning programme was launched which over time has become two Professional Qualifications in Yacht & Small Craft and Commercial Ship & Cargo marine surveying leading to a Diploma. In 2017 IIMS was recognised for the quality of its education programme when it was presented with an IMC Golden Shield Excellence Award and is widely accepted as an expert in the area of marine surveying training and education.

In 2004 the Institute became a Limited company. A new range of meetings, conferences, seminars, training days, courses and other support elements were developed for the benefit of the members which continue to this day.

In late 2014, the Institute's web site www.iims.org.uk was completely reconstructed from scratch and the foundations were laid for what is now the most valuable online resource to be found anywhere online for marine surveyors. Each month, on average, the site attracts over 1,000,000 page impressions and an average of 15,000 unique visitors. There are more than 3,000 stories and features to browse, access to essential surveyor guidance, yacht codes, rare shipping regulations, videos, podcasts and much more. Fresh content is added almost daily. The website is constantly being upgraded to enhance the experience including page load speed, layout and design.

In 2016, the Institute celebrated its Silver Jubilee with a year-long celebration, culminating in a major London Conference and Awards Ceremony to recognise excellence in marine surveying and a sparkling Gala Dinner befitting the occasion.

In 2020 IIMS purchased Murrills House in Portchester UK as its permanent headquarters. This jewel in the crown, a valuable asset for members, is a delightful Grade II listed structure that can trace its history back 500 years and IIMS is proud to be the present custodian of a heritage property so rich in history. Over the past three years, the Institute has invested funds to bring the property back to its former glory as a stylish country house.



Murrills House, Portchester - home to the IIMS secretariat

Today the IIMS boasts 1,000 members in over 100 countries.

Nick Parkyn, an IIMS member from Australia, said, "The IIMS has re-invented itself to become the essential ecosystem provider and enabler for the marine surveying profession. It is the catalyst that brings the fraternity together to ensure the capability, integrity, and professionalism of the practitioners. The IIMS is in a commanding position to fully embrace the technological advances of the Fourth Industrial Revolution (Industry 4.0)."

Benefits of IIMS membership

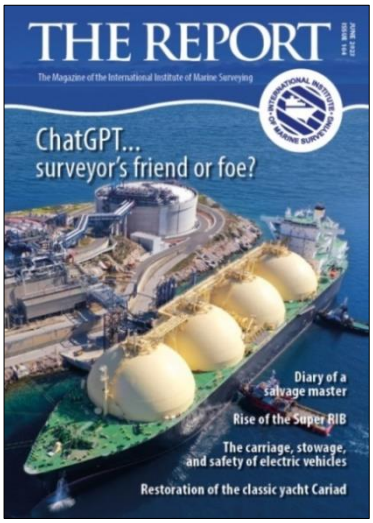
As with everything, membership of any organisation depends upon what you want and need to get out of it. Most members of the IIMS have joined to show their commitment to their profession, to improve their knowledge, gain additional skills and to have the backing and support of the most proactive marine surveying organisation in the world working for them. IIMS has never made any promise or guarantee that being a member will generate business, but many members feedback that this is indeed the case. Networking with other surveyors, both locally and internationally, is an important aspect too. So, what might you want?

Some of the benefits of membership are as follows

- Recognition by the shipping industry of your membership of the world's leading, international, professional body for marine surveyors by using IIMS post nominal letters after your name (certain grades only).
- Use of the IIMS logo on your business cards and website (some grades only).
- Comprehensive listing on the IIMS web site with your contact details and specialisations, duplicated on the Marine Surveyor Search App (the only one of its kind).
- Receipt of a dated membership identity card annually – helpful for getting access to ports and other secure facilities.
- A forum for discussing surveying concerns with fellow members.
- Your voice, as a valued member surveyor, being heard at local, national and international levels.
- Advice and assistance in resolving disputes.
- Attendance at IIMS international branch training events (where branches exist) and other hybrid events organized by the Institute.
- Access to in-country and overseas experts to seek solutions to surveying problems.
- Access through the Institute website and Search App to the network of IIMS members.
- Notification of the electronic publication of the Institute's monthly News Bulletin and quarterly Report Magazine.
- Access to the IIMS continuing professional development App.
- Access to the IIMS bespoke travel scheme.
- Distance learning Professional Qualifications enabling self-study to improve knowledge at a discount for members looking to study and extend their skill range.

- Access to over 300 videos on all aspects of marine surveying made by IIMS via the Institute's YouTube channel.
- Access to various social media platforms and online groups including Twitter and the IIMS LinkedIn Group.
- Access to one of the many established WhatsApp groups. There is one for UK inland waterways surveyors, another for surveyors in West Africa and more for those in Europe, Australia and Canada. It is a free networking service, open to members only and more are planned.
- Notification of safety briefings as they occur with unlimited access to hundreds of incident and accident reports.
- Access to hundreds of copyright free images that can be used in marketing material, websites and anywhere else, all available via a password protected page.
- Access to a discounted website building solution to help surveyors create an effective online presence.
- Opportunity to acquire various items of IIMS branded protective and casual clothing.

Full details about the Institute and membership are available in a 16 page pdf document which is available to download at https://bit.ly/3XoI04x.



The Report Magazine

I'd like to finish my article with a few words about the Institute's award-nominated, quarterly Report Magazine, which is free for all to read. The readership of each edition is unknown but estimated to be over 10,000. It has become essential reading for IIMS members, but equally importantly for many others in the shipping industry who touch, engage and contract with the surveying profession. Each edition averages 128 pages, the most recently published edition extended to 144 pages, the largest ever issued. Much of the content, which is deliberately diverse to represent the spread of membership, is specially commissioned for publication. I recommend the magazine to you. It can be downloaded in pdf or eReader formats. The current and past editions are available at https://bit.ly/2WQTosu.

Good luck and survey well.



Mike Schwarz
Chief Executive Officer
International Institute of Marine Surveying

Legal Liabilities of Marine Surveyor

Captain Sabbir Mahmood

Introduction

Marine surveyors are highly qualified and technically sound professionals who are to assist the judgment of the Master as to his proceedings to repair, manage, operate, and handle contingency. The survey is designed to protect the master in the fair discharge of his difficult and often critically responsible duty by giving him the aid of specialized knowledge, incredible experience, and sound judgment. Marine surveyors are normally selected from experience Master mariners or Chief engineers of sea-going vessels. The independent surveyors are closely associated with marine insurance and often act as eyes and ears of underwriters concerning the cause, nature, and effect of losses including preventive measures. But unfortunately due to the over-reliance upon marine surveyors, if something goes wrong, they are often the first to be blamed. The objectives of the research are to conduct a review of the legal principles underlying the legal liability of marine surveyors and analyze the case precedence to ascertain the regime of liability.

Cases where Liability Imposed on Marine Surveyor

Normally marine surveyors are exposed to liability under both the law of contract and the law of tort. The exposure of a marine surveyor to liability under the law of contract will vary depending upon the terms of the individual contract between the surveyor and his customer. Sometimes the contract between two parties depends on the inspection and report of the surveyor which imposed more burden on the marine surveyor.

In the case of the “Pacific Crown” decided by the British Columbia Supreme Court in 1978, where the clause of the purchase contract was depending on satisfactory inspection by a marine surveyor. Although the survey was conducted for condition assessment and valuation of the ship and performed

primarily for insurance purposes, the surveyor knew that the purchaser was going to be relying upon his survey to decide whether or not to purchase the boat. Accordingly, there was a sufficient relationship between the purchaser and the surveyor to impose liability for negligence.

A second case where liability was imposed upon a marine surveyor is the case of the “Triton”, decided by the British Columbia Court of Appeal in 1984. This case involved a survey of a 37-foot aluminum houseboat while it was undergoing a refit on dry land. After the refit, the boat capsized. The court's decision in the "Triton" was also noteworthy for the fact that it imposes liability for negligence though the survey was for the condition and valuation of the ship. The court further held that “if the location of the through hull fittings or the overboard discharge system created an unusual risk then that risk should have been disclosed in the survey report whatever the type of survey”.

Surveyors have been held liable for their negligence or breach of the implied warranty under various circumstances. In Riverway Co. v. Trumbull River Services, Inc., 674 F.2d 1146 (7th Cir. 1982), Riverway hired a marine surveying company to inspect the RW-381, a loaded barge which was made fast with another barge in Trumbull’s fleet, *the* MWT-122 and do what was necessary to prevent the RW-381 from sinking. The surveyor went to the site and determined the RW-381 was not in imminent danger of sinking. He decided to take no action until the following day and rejected the offer of Trumbull’s employee to cut the steel cable holding the RW-381 to the submerged MWT-122. The surveyor did not report his findings to River Way that night. The following day, the RW-381 sank. The district court held the marine surveying company one-third at fault for the RW-381‘s sinking because it was hired to conduct an inspection and take appropriate remedial action but failed to do so.

In Bosnor, S.A. de C.V. v. Tug L.A. Barrios, 796 F.2d 776 (5th Cir. 1986), a surveying company, World Marine Associates, was hired by a freight forwarder to attend the loading of steel pipe onto a barge and perform a loading and securing survey. At the time of loading, World Marine advised the freight forwarder that the barge’s trim and list were “undesirable” but reported that the cargo was properly loaded, stowed, and secured for the intended voyage. After the tow commenced, the barge was in a collision with another barge, which resulted in the breakage of some of the securing bands around the pipe. The barge also experienced several days of heavy weather after which the stanchions securing the pipe broke and most of the pipe was lost overboard. The trial court did not allocate any fault to World Marines even though it found the list and trim of the barge contributed to the casualty. The appellate court disagreed and remanded the case to the district court for the assessment of some fault against World Marines.

In Royal Embassy of Saudi Arabia and Ins. Co. of N. Am. v. SS IOANNIS MARTINOS, 1986 AMC 772 (E.D. N.C. 1984), a cargo insurer declined to insure cargoes carried to Saudi Arabia on vessels chartered by Trans American Steamship Corporation unless The Salvage Association approved the loading, stowage, and securing of the cargo. During the voyage, cargo loaded on three hatch covers was lost overboard in anticipated weather conditions. The court denied The Salvage Association’s motion for summary judgment reasoning the evidence showed The Salvage Association did more than merely observe and

report but became actively involved in the stowage and thus owed a duty of workmanlike service. It found breach of that duty created an unseaworthy condition on the vessel. Moreover, the court held The Salvage Association could be liable to charterer Trans American, a third party with which it was not in direct contractual privity.

Bradshaw v. Monk, 1952 A.M.C. 53 (Super. Ct. Wash. 1952) case is a comparatively early surveyor malpractice case, underscoring one aspect of the marine surveyor's professional obligations. In Bradshaw, a purchaser of a leaky yacht sued a surveyor for failing to discover the yacht's need for repair at the time of purchase. The court relied on the general principle in admiralty malpractice cases that "*ordinary care is that degree of skill which reasonably may be expected of one in the given circumstances. It is that degree of skill that prudent men in the business in hand would be likely to exercise under the same circumstances"*.

Cases where no Liability Imposed on a Marine Surveyor

A clear-cut example of an unsuccessful attempt to impose liability upon a marine surveyor is the case of the "Con Brio", decided by the Supreme Court of British Columbia in 1986. This case involved a pre-purchase survey of a sailboat. The survey report noted that the forward and aft end of the keel section of the fiberglass hull contained fractures that were being repaired by a reputable fiberglass repairer. In an action against both the sellers and the marine surveyor, the court dismissed the case against the surveyor and held that the failure of the surveyor to describe the seriousness of the damage to the prospective purchaser was not fatal.

A good example of a case where a court refuses to extend liability beyond the original scope of a survey is the "Hiyu". In its reasons for judgment, the court said, *"liability for negligent advice is owed normally only to those persons the advisor knows, or should reasonably know, will rely upon his opinion."* In this case the surveyor was told to survey bank loan purpose and there was no connection with the purchaser.

In Y*oung v. Clear Lake Yacht Basin, Inc.*, 1972 AMC 2329 (S.D. Tex. 1972), a marine surveyor has been sued but found not liable. The case was due to an explosion and fire caused by leaking fuel, which was ignited when the yacht owner pulled the switch to activate the electric blower and bilge pump. The court held the surveyor not liable because even if he were negligent in failing to detect the leak or certifying the repairs, there was no evidence his actions proximately caused the loss. Instead, the loss was caused by the negligence of the yacht owner in turning on an electrical switch when he smelled fuel. Further, the court recognized the surveyor was retained to do an insurance survey, which involved a less rigorous examination than a pre-purchase survey.

In Miller-Schmidt v. Gastech, Inc., 1990 AMC 41 (5th Cir. 1989) a marine surveyor was held not liable for the deaths of two workers on a drilling rig when they were overcome by fumes in a compartment. The appellate court agreed with the trial court that the surveyor's inspection focused on the structural integrity of the drilling rig and not on atmospheric testing aboard the rig.

A recent example of an unsuccessful case against a marine surveyor is the “Key Largo” decided by the Provincial Court of British Columbia (Small Claims Division) in June of 1998, where the court noted that the surveyor’s opinion that the boat was suitable for cruising in protected waters, the court concluded that the seas encountered in English bay, though a “freak occurrence were the equivalent of unprotected waters or open sea.” Accordingly, it did not award any damages against the marine surveyor.

Founding Principles of Liability

The surveyor will be liable to a carrier under the law of tort depending on the preponderance of the evidence that:

1. the surveyor owed a duty to conform to a standard of conduct for the protection of the carrier;
2. the surveyor failed to conform to the standard of conduct for the protection of the carrier;
3. there exists a reasonably close causal connection between the conduct of the surveyor and the resulting injury of the carrier; and,
4. the carrier's injury consists of some actual loss or damage.

Each of these elements is significant, and as to each, the defendant may interpose defenses. The existence of these defenses and the fact that in ship loss cases the cause of loss is often unknown make the plaintiff's case difficult.

The unforeseeably is a very important defense for marine surveyors, as the court held in re Arbitration between Polemis and Furness, Withy & Co. 86 (Polemis) case that, a person's liability depends on "whether the damage is of such a kind as a reasonable man should have foreseen”.

Another important factor of defense against liability is the relationship of the plaintiff with the surveyor and the dependence of the plaintiff on the surveyor's decision which has been transmitted to the surveyor before the work is done. The main legal principle in this regard is the breach of the trust.

Best Practice of Surveyors to Avoid Liability

There should be written instructions to engage a marine surveyor and for complicated jobs, the instruction should be in the form of a contract or correspondence should be in detail. In both cases, the instruction or contract should contain the scope of work of the surveyor, the detail of the incident, and the party on whose behalf the surveyor should work. If there is any legal obligation arises from any other contract that also should be mentioned. The surveyor should confirm in writing that it accepts the instructions or what services it will perform in connection with the Client's instructions. Once marine surveyors and the Client have agreed on what services are to be performed any subsequent changes or additions must be agreed by both parties in writing.

Whether the terms of the contract expressly say so or not there will be, implied in every contract, a term that the surveyor will carry out his work with the due skill and care of a competent surveyor in the circumstances of a particular case.

Surveyors should be careful to avoid directly instructing the shipyard or any third party or ship. The surveyor should put his findings in the final report. Particular consideration should also be given to making quite explicit in the survey report, any limitations to the investigation to which the surveyor had been subject. He should also advise where further investigation by the client or a specialist expert would be considered prudent. Where a client may be present at the time of the survey then no reliance should be placed on any oral comments made to the client which could later be denied. Instead, it is important to ensure that everything found at the time of the survey finds its way into the written report.

The marine surveyors should use exclusion clauses in contracts or routinely put provisions in their reports purporting to exculpate themselves from liability or to limit their liability, often to the amount of the survey fee. Some courts have recognized the enforceability of such provisions and others have held them void as against public policy. Whatever the scope of the exclusion clause, as was pointed out in "Pacific Crown", unless the customer is aware and expressly agreed to it at the time the contract was entered into, it may not be enforceable.

Although the duty is the same in both contract and tort, there is a legal difference when it comes to the question of a breach of those duties. There may be differences in damages where a claim is framed in contract rather than in negligence. The most significant difference is, that, under his contract, the surveyor owes the duty only to his client whereas a duty of care is not necessarily so confined. It is, therefore, important to see if the law allows the surveyor to be liable to someone other than his client.

The contract should articulate that except to the extent and solely for the amount therein set out that marine surveyors would be liable, the Client should hereby undertake to keep marine surveyors indemnified and to hold them harmless against all actions, proceedings, claims, demands, or liabilities whatsoever or howsoever arising which may be brought against them or incurred or suffered by them, and against and in respect of all costs, loss, damages, and expenses which marine-surveyors may suffer or incur (either directly or indirectly) in the course of the services under these Conditions.

Normally the marine survey contract should content that neither marine surveyors nor the Client shall, except as otherwise provided, be responsible for any loss, damage, delay, or failure in performance hereunder arising or resulting from an act of God, the act of war, seizure under legal process, quarantine restrictions, strikes, boycotts, lockouts, riots, civil commotions and arrest or restraint of princes, rulers or people.

Marine surveyors should effect and maintain, at no cost to the Client, Professional Liability Insurance for such loss and damage for which marine surveyors may be held liable to the Client under any legal regime. The marine surveyors' liability insurance policy is designed to protect the policyholder against claims made against them in respect of their legal liability for personal injury or property damage arising during their business activities. It is prudent for all marine surveyors to ensure that they are properly protected against claims being made against them by third parties.

Conclusion

Marine surveyors play an important and necessary role in the business of shipping. They classify and continuously inspect ships and their cargo. As a result of the wide range of functions performed by marine surveyors, they are exposed to a wide range of liabilities to a wide range of persons. Although the range of possible parties from whom a Surveyor might face claims is limited, he would still owe a duty to his direct client. Marine surveyors have benefited from a recent decision of the Supreme Court of Canada which has implicitly confirmed earlier court decisions that have limited the liability of marine surveyors to those persons who the surveyor knows or might reasonably know will be relying upon his report. In part because of his important role, American courts also have been reluctant to hold surveyors liable for the loss of surveyed vessels.

This is not to say, however, that some reforms are not necessary. International maritime law should eliminate the artificial motivation to sue surveyors in ship loss cases. Finally, the maritime administration should debate the merits of minimal testing, training, and licensing requirements for surveyors as a means of avoiding maritime accidents completely. Such reforms, together with the courts' negligence approach to surveyor liability, would demand responsibility and integrity from all members of the maritime industry.



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Ship Surveying: Passion Turned into Profession

Captain M. Sakhawat H. Komol

Foreword

The three words 'Survey', 'Audit' and 'Investigations' – have different meanings in the dictionaries categorically or may have different definitions with the professionals. However, there is a bridge among the words which has fetched all those in a sole platform. We are happily much familiarized with these words since we are from a correlated professional family and regularly deal with the particular matters in reality.

Before starting my steps on the professional walkway, I attended few assignments on board tanker vessels on request (off course with handsome remuneration!) in 2014 while I was on vacation. The scope of the jobs was to monitor STS operations and to carry out audit on board on cargo operations, STS operations and the procedures. I enjoyed the work with delightful feelings, as I likely stepped into a shore job, which I was trying to be engaged with since 2009! However, the projects were not challenging though for me, as I was working on board tanker ships for more than a decade in all ranks. These voyages prepared me for such activities in fact, which I was performing as my passion.

As I have been aiming to join the Marine Surveying profession since the end of 2013, I had an impression that the surveying profession would not be a bothering some for me, perhaps could be easier than the task I handled in April 2014. In January 2015, when I marched into the industry and took jobs as an independent Ship Surveyor, I found that things are entirely dissimilar having various diversities. In fact, it was not as relaxed as picking a ready fruit from a plant. I rather observed it as quite a diligent mission than guessed and not just like walking in a park.

Here I share my different experiences and understandings, especially aiming for the new comer surveyors here, which I achieved in the last about ten years. Hope though the same would be beneficial to all practitioners - fresh and proficient.

Pre-joining study and training

The field of Marine Surveys in Bangladesh is a bit different here in Bangladesh since as per local regulations only the senior qualified mariners are only eligible to become a surveyor. We trust that the local rules and directives are well-timed for the specialized profession here. This also made it easy for the new joiner consultants since joiners are from the merchant marine background having experiences for about a decade on board ships in various ranks. However, still the intern surveyors require some basic training and lessons on the atmosphere and survey scopes in Bangladesh, theoretical working out on survey procedures as well as some homework. We have experienced that Marine Surveyors Association of Bangladesh (MSAB) provided training to its members on Marine Surveys, survey opportunities in Bangladesh, carrier of a Marine Surveyor, procedures to carry out various surveys etc. MSAB also provides internship training (combined theoretical and practical exercises on survey procedures) on board vessels to the new joiner members.

While undertaking a task

Following is a guideline only for the practitioners:

Appointment

a. An advice or a letter of appointment for survey invitation either in a written form (Electronic or hard copy) in company letter head or through clear verbal instruction up to individual's satisfaction to be procured.

b. Name of the vessel, local agent and place of survey to note.

c. Financial terms and conditions to settle as a part of agreement.

d. Arrangement of transport and logistics supports to confirm.

Preparation

a. Pick-up point and time to discuss with a local agent when planning to attend a vessel.

b. Get the names of other surveyors of the same assignment if a joint survey is to be held.

c. Personal protective equipment and other personal gear, such as life jacket, hard hat, cap, safety shoe, hand gloves, sun glasses, working suit, rain coat, umbrella, a towel, torch/flush light, camera, chargers etc. to keep ready and carry.

d. Survey forms, electronic soft copy, necessary hand tools and equipment and instruments related to the assignment to keep ready. Required medicines and dry food may be carried along.

e. Tidy/orderly comfortable full sleeve shirt and cotton trouser/pants suitable for the purpose is recommended as a costume for a professional surveyor.

Approach

a. Confirm position of the vessel prior to approach.

b. Monitor weather conditions. Check the records of the weather forecast.

c. During confusing weather conditions, discuss with fellow surveyors and consider a firm decision prior to approaching sea. To be extra cautious while a meteorological warning is issued.

d. Always consider a safer access/embarkation-disembarkation point while using a service boat.

Embarkation/Disembarkation

a. With the help of local agents/correspondents, pass arrival/embarkation information to the vessel in ample time prior boarding. Ensure safe embarkation and disembarkation arrangement. Ensure life buoys, heaving line and life vests are standby at the embarkation point on board.

b. Prefer the arrangement (pilot ladder/gangway) based on scene demand.

c. During embarkation and disembarkation to a vessel at anchorage through ship's ladders, to be very vigilant and careful especially at the time of monsoon period.

d. While the arrangement appears as not appropriate, discuss the same with fellow colleagues and agent representatives. Advise the vessel to take corrective actions.

e. If the vessel is not complying with the requirement even after advice, suspend the program and inform the principals, associations and relevant authorities.

Attendance and survey

a. Extend full cooperation to ship's staff and fellow surveyors to promote a friendly environment which is vital for a fruitful survey.

b. During a joint survey, apply effort for an amicable result in a professional manner.

c. Findings of a survey to be based on facts, not on interest of the parties.

d. Respect to each other and harmony amongst to maintain in every occasion. Exchange of information and opinion amid members on professional matters (keeping intact the interest of parties) are appreciable.

e. It's an optimum responsibility of every surveyor to act as a professional and uphold the reputation of the community.

Some key points to consider on various types of surveys

Draft/draught surveys

This is the survey here in Bangladesh being held for the most in numbers especially for the incoming import bulk cargoes. As such, it's a common survey however to be performed with extra caution, great responsibility and highest accuracy. Because the worth of cargo and commercial/financial matters are very closely related herewith. Following point to consider for this case:

1. The master of a vessel should be informed early on regarding the draft survey. In case of an initial light ship survey, he should be requested, subject to the safety of the vessel, to ensure that individual ballast tanks are either fully pressed up or empty that the vessel is upright. The trim to be within the limits of the tank calibration tables.

2. Before undertaking the survey, it is recommended that the surveyor makes time to inspect a general arrangement plan in order to confirm the number and position of the various ballast, fresh water and oil bunker tanks on the vessel.

3. Hydrometer and refractometer in use to be certified by the manufacturer and/or shore calibrator. A draught survey hydrometer, calibrated in air, measures the apparent density of the water and is used for determining the weight of the cargo onboard. A load line hydrometer, calibrated in a vacuum, is used to determine the relative density of the water and determine the displacement of the vessel at a given load line. A dock water density reading taken with a draught survey hydrometer showing 1.015 t/m3, would show 1.017 t/m3 when taken with a load line hydrometer, both are correct, the difference between the two of 0.002 is known as the “air buoyancy correction”, however as we want to determine the weight of the cargo on the vessel, the density read from the draught survey hydrometer will be used. The draught survey hydrometer is calibrated at a standard temperature. Any deviation from the standard temperature does not require a temperature correction, as the changes in the volume of the vessel and the hydrometer will generally cancel each other out. A Marine Notice 2/2012 has been issued in this regard. The hydrometer is calibrated regularly to ensure its accuracy, as they can become chipped, damaged and / or contaminated with a film on their surface during use, altering their mass. Hydrometer manufacturers generally recommend they are to be calibrated after one year, and then every two or three years thereafter.

   When determining the dock water density, a sample of the dock water should be taken beneath the surface of the water, clear of overboard discharges and deck runoff. In order to ensure an accurate reading the receptacle used to sample the dock water, and the hydrometer, must be clean. When taking the reading the hydrometer must not touch the side of the receptacle and be gently spun to break the surface meniscus of the water. Reading to be obtained from closest range and in parallel with water level to prevent parallax errors. We recommend using Ship’s hydrometers for surveys and record the serial no. of the instrument in the report.

4. Slow filling tube (Sampler) to use for collection of sea/dock water samples. It is prudent to obtain samples of water in which the vessel is floating at, or very close to, the time at which the draught marks are read. This is particularly relevant when the vessel is lying at an estuary or river berth when density of the water may be changing, due to the ebb or flow of the tide. Depending upon the length of the vessel under survey, a number of samples, say between one and three, should be taken. In order to overcome the problem of layering, the samples should be obtained using a closed sampling can at a depth of approximately half the existing draught of the vessel.

5. Special attention required for the vessels which are lying at a river berth or in tidal conditions when strong currents are running. Under these conditions the draught marks should ideally be read over periods of slack water (provided that at a low water slack there is sufficient under-keel clearance). Currents of appreciable strengths are likely to cause the vessel to change trim or pitch slightly and/or sink bodily into the water, as such increasing the draft of the vessel. This phenomenon becomes more pronounced in shallow waters (shallow water effect). - Strong currents will result in raised water levels against the leading edge of a stationary vessel lying in flowing water. Thus, surveyors need to be cautious while conducting surveys in shallow water and under tidal current. Draught marks should be read with the observer as close to the water line as is safe and reasonably possible, in order to reduce parallax error.
6. The calculation of the weight of ballast water is undoubtedly the most usual source of errors which may result in very large, and unacceptable, inaccuracies of the cargo quantity as calculated by the draught survey. As such, soundings and verification of density is of utmost importance.

Ullage surveys

Petroleum crude, HSFO, Gas Oil and vegetable oils are the mostly liquid products being carried on vessels which are to be surveyed frequently here in this area. Appropriate application of trim, list, various correction factors and free water play a significant role while measuring quantity of cargo. Following are some key points to bear in mind while undertaking ullage surveys:

1. UTI/MMC to verify for its correctness and calibration prior to use. It is necessary to be aware that the combination of inaccuracies in measuring equipment and physical losses results in a discrepancy between the quantity on the B/L and the scale figure at the discharging port, leading to a cargo shortage claim.
2. Trim and list correction to apply with caution to obtain the corrected ullage figures.
3. For petroleum cargoes, assess the calculation method that is adopted at the port of loading. Particularly to verify the ASTM tables and other factors such as VCF, WCF used at the port of loading.
4. For vegetable oil cargoes, to assess whether the correct density table and other related correction factors used at port of loading.
5. Assess and apply VEF to judge the quantity of cargo carried on board.

Casualty/damage Investigations

A kind of prestigious assignment which to be performed precisely and with particular attention. Job orders are issued generally after raising certain allegations. Appointed surveyor to collect facts and information from all available sources and to apply in a legitimate approach to protect the interest of the client. Following key points to note:

1. To do homework if time allows prior to moving for the investigation. Prepare a comprehensive questionnaire containing related queries on the incident/allegation. Queries can be raised right from the commencement of the voyage till the date of the matter.
2. Aftermath information also to note to accomplish a prudent investigation.
3. To interview the involved/witness persons/crew and note the events and facts in detail. Related every document to collect subject to approval.

What's are about P&I / H&M underwriters

I read an article on this subject that was written by a veteran marine personality Capt. Rajeev Jassal of India, which I found easy to understand for the learners. Let us share some of his thoughts here. There are so many questions in general for marine onlookers individuals about the role of P&I / H&M underwriters in this industry. Let us have some net ideas on those. Roughly there are three types of marine insurances – 1. Insurance for the ship (Hull and Machinery), 2. Insurance for the cargo (Taken by the shipper) and 3. Insurance for the third party claims.

Hull & Machinery (H&M) policy

Insurance for the ship's hull and machinery is provided by H&M underwriters. It is said that marine insurance has been in the market since the fourteenth century! It acts for the damage to the ship's hull and machinery. H&M insurance policies have few importance for its clients. For example, H&M policy has International Navigation Limits. The international navigation limits define the geographical limits within which the ships can trade without any additional premium. Another example, H&M policy restricts the ship to proceed to war zones without informing the H&M underwriters.

Cargo insurance

Cargo may get damaged during the voyage. In that situation, a dispute would arise between the parties concerned. The international marine "Hague-Visby rules" clarify about the responsibilities in those situations. This is the shipper who insures the cargo at each leg of the voyage.

P&I Insurance

P&I insurance is used for the third party claims towards the ship owners. Ship owners provide a service of carrying the cargo of the shipper. While providing this service, a ship owner may be subjected to a number of claims from third parties. These claims could be damage to the jetty, pollution from the ship or even the fines to the ship from authorities. Ship owners need to insure for all these third party claims. P&I clubs provide insurance to the ship owners for all these claims.

About P&I Club

Before the 19th century, the term "marine insurance" only meant the insurance for the ship's hull and machinery. This was the time when most of the ships were sailing vessels. The chances of collision between two sailing vessels were less. But as more and more steamships came to the sea, the chances

of collision between ships increased. Underwriters became concerned about this increased risk. Rightly so because in collisions between two vessels, H&M insurers not only have to cover the damages of the insured ship but also pay for the damages of the other ship if the blame is on the insured vessel. To take care of part of this risk, they introduced a clause in their policies. This clause was called "3/4th Collision Clause" or "Running down clause". As per this clause, the underwriters will only pay 3/4th of the total liability or claims against the ship owners in a collision incident. These costs are for the insurance of the ship's hull and machinery. The good part in this insurance is that costs are known to the ship owner and they can plan for that. But when a ship is navigating at sea, carrying cargo and is involved in all these activities, it is subjecting itself to a number of claims against the ship owners. For example, a port can claim that a ship damaged its fenders or a buoy while berthing. Or the port can claim that the ship polluted their waters. So it is not only about insurance of damage to the hull and its machinery but also about all the claims that the ship owner can get against him. This clause is there in the Hull & Machinery policies even today.

Let us see this with an example. Let us say there has been a collision between two ships. The "Hull & Machinery insurance" of both the ships will study the investigation of the collision to set up the percentage of blame.

Let us say the blame was set as below
Ship A : 70% responsible for the collision
Ship B : 30% responsible for the collision

The repair costs for both the ships are as follows
Ship A : USD 100,000
Ship B : USD 250,000
Total cost of repairs: USD 350,000

The liability of both the ships will be
Ship A : USD 245,000 (70% of the total costs)
Ship B : USD 105,000 (30% of the total costs)

So ship A needs to pay USD 145,000 to ship B apart from USD 100,000 damages to its own ship which will be covered by H&M insurance.

As per 3/4th collision clause, the H&M insurance company will pay only 3/4th of this amount.
So payable by H&M insurance: USD 108,750
Payable by ship owner: USD 36,250

The ship owners wanted to insure this amount too without exorbitantly increasing their insurance premium. Ship owners could get this 1/4th liability insured but for that, they needed to pay an additional premium. Ship owners wanted to avoid that.

This led to the formation of P&I clubs which works on the principle of mutual sharing or pooling of the risk. P&I clubs work on a non-profit basis. It is the club of ship owners who are acting both as assured and insurers. P&I clubs work on the principle of mutual sharing and pooling of the risk.

What does this mean? Let us understand this with a simple and most basic example. 10 ship owners form a club for sharing each other's risk. All these 10 ship owners have one ship each which is of the same type, size and value. At the end of the year, one ship had a third party claim of USD 1000 to pay. This claim of USD 1000 will be shared by all the 10 ship owners equally. So each ship owner would contribute USD 100 to pay this claim. This means that with just USD 100, each ship owner was able to cover the risk of the third party claims.

Conclusion

Sea ports in Bangladesh have already been introduced as one of the rapidly growing shipping sectors in the globe in the past couple of years. I have spent about a decade as a full time surveyor in the marine surveying field in Bangladesh. However, I sense that I am like a learner up till now and happy to mention that every day I am enriching my knowledge while coming across some new matters related with this profession. Although we are handling cases with due professionalism, nevertheless I believe that a surveyor has to be a keen learner first for every case.

Sources

1. Bulletin 'West of England P&I Club'
2. Bulletin 'Gard P&I Club'
3. Bulletin 'UK P&I Club'
4. Capt. Rajeev Jassal, India



Captain Mohammad Sakhawat Hossain Komol AFNI CMILT MIIMS

After saying good bye to the sea in 2014 while had a sweet-salty experiences of about 20 years, Master Mariner Captain Sakhawat Komol engaged himself as a full time independent Marine Surveyor. He is also an occasional writer and publisher. He published a book last 2022 which was written by his father in 1976 based on philosophy, religious thoughts, materialism, comparative religions and various social and political theories. Captain Sakhawat Komol is serving MSAB as General Secretary since 2017 till date, four terms in a row. Attended International Maritime Round Table organized by ITF at Colombo in 2019, while he represented Bangladesh Merchant Marine Officers' Association (BMMOA). He is involved in various social works - founder of a youth organization "Young Elegant Society" -'YES' established in 2012, coordinator of a local voluntary online platform "Mariners for Support and Trust" - 'MAST', advisory Board President of Shagorika Kishore Theater and Science Club, Chattogram, founder of a charity organization "Noor Foundation" etc. His recent craving is to produce short screens on maritime affairs.

The Marine Surveyor: A Brief Note

Captain Mohammad Masud Parvez

Marine expertise and sound knowledge are critical for Marine surveyors and require an exceptionally observant eye to the minor details. Although inspection in port is an additional burden on crew rest hours, it is essential to implement relevant local and international regulations. Inspections verify that vessels are safe and follow the rules. This helps make the maritime industry more trustworthy.

Once a ship is assigned, the Marine surveyor monitors the vessel's schedule and obtains specific details, including old inspection reports if available. He prepares essential safety equipment, gets security access to the terminal, and arranges transport to and from the vessel. While traveling, he reviews the available information and plans for areas to focus on.

After boarding the vessel, inspection generally starts with a pre-inspection meeting followed by checks on documentation to see if flag state certificates, classification, and insurance documents are accurate and follow the rules. The surveyor then visits the Navigation Bridge, Accommodation, Deck, and Engine Room. While taking round, the ship's crew is required to test various safety equipment. Checking and examining vessels is essential, including maintenance records and paying close attention to detail. The surveyor uses their knowledge and expertise of rules, standards, and what the customer needs to compare their findings with what is already accepted. They identify any problems, rule-breaking, or possible dangers affecting the vessel's safety or how it works. Apart from identifying issues, the marine inspector also suggests ways to fix them.

Finally, documenting and reporting are integral to a marine surveyor's job. The marine surveyor needs to act professionally, be accurate, and keep information private while communicating with others about the job. They ensure that the information in the report is correct and fair. We keep things secret to make sure everyone involved is safe and secure. During the post-inspection meeting, any questions should explain things clearly, and offer expert advice about things related to the sea.

Advice for prospective Marine Surveyors

1. **Develop a Solid Information Base:** Contribute time to understand marine guidance, industry measures, and best practices widely. Continuous learning and professional improvement are crucial to becoming a capable marine surveyor.
2. **Gain Practical Experience:** Look for openings to gain hands-on involvement within the maritime industry, including shipboard, shipyard, terminal, and port operations.
3. **Update yourself:** Attend industry conferences, courses, and occasions to meet experts from different divisions of the maritime industry. Construct associations with individual surveyors, industry specialists, and potential clients. A solid proficient organization can give openings for collaboration, knowledge-sharing, and career headway.
4. **Attention to Detail:** The part of a marine surveyor requires a sharp eye for detail. Please watch and record the littlest peculiarities or deviations from measures amid assessments. Consideration of fact is vital in distinguishing potential security dangers or compliance issues.
5. **Effective Communication:** A marine surveyor must have Solid communication aptitudes. Create the capacity to communicate complex, specialized data clearly and briefly. Hone dynamic tuning in to get client needs and concerns viably. Sharing with clients, partners, and colleagues proficiently and compassionately is critical to building solid connections.

Becoming a marine surveyor requires technical information, down-to-earth involvement, viable communication aptitudes, and a commitment to proficient greatness. By taking after these pieces of exhortation, one will embark on a fulfilling career within the marine field, looking over and contributing to the security and compliance of the sea industry.



Captain Mohammad Masud Parvez

Capt. Mohammad Masud Parvez is a loading Master at the Shell LNG terminal at Gladstone, Australia. He is also a Flag state inspector providing audits and inspections. Capt. Masud obtained Master Unlimited COC from the UK and served several years as Master on board various tankers vessels worldwide. He then worked as a Marine Superintendent in Singapore for eight years and completed MBA in Maritime and Logistics Management from Australian Maritime College. Capt. Masud holds wide experiences in maritime operations, Maritime survey, inspection and Team Management.

Dockyard Industry Development in Bangladesh and the Future Perspective, Role in National Economy

Captain Salah Uddin Mahmood



A super tanker in Dry Dock

Dry dock is an integral part of vessel's life. With frequency of approximately 30 months flag legislation and classification society rules and SOLAS convention bring the vessel to a dockyard for intermediate/periodical or special survey. Dry docking cost is a significant element of the ship's operating cost and is always presented as a six or seven figure amount. In dry dock the hull and all other submerged sections are neatly assessed so that the vessel can gain the momentum again and can have the long run with minimum consumption of fuel. Dry docking can be done in many ways, but the most preferred ways for dry docking are graving dry dock which is also known as excavated dry dock and the other one is floating dry dock. It then depends on the type of the vessel and accordingly the preferred method for the specific vessel is utilized in order to dry dock the vessel.

Building a dry dock in Bangladesh could have both advantages and challenges. Here are some points to consider:

1. Strategic Location: Bangladesh has a strategic location, being situated at the crossroads of South Asia and Southeast Asia, and close to important shipping routes. This makes it an ideal location for a dry dock, as ships passing through the region can easily stop there for repairs and maintenance.

2. Availability of skilled labor: Bangladesh has a large and relatively low-cost labor force, with a number of skilled workers in the shipbuilding and repair industry. This means that building a dry dock in Bangladesh could potentially be more cost-effective than building one in other countries.

Table below describes the comparison of labour cost in world context:

Bangladesh	India	China	Singapore	South Korea	Japan	Italy	France	Norway
$ 0.5	$1.0	$1.5	$3.0	$6.0	$12.0	$13.0	$13.0	$14.0

3. Cost-Effective: Building a dry dock in Bangladesh could be more cost-effective than building one in developed countries like China, Singapore, Korea or Japan due to lower labor and material costs.
4. Boost to Economy: The construction of a dry dock in Bangladesh could have a positive impact on the National economy, creating jobs and stimulating economic growth.
5. Shore work shop support and marine repair facility
6. Ship breaking ship owner can find necessary recondition spare parts with cheap price and least delivery time
7. Experienced classification society surveyor
8. Professional naval architects
9. Availability of class approved steel plates from local market
10. Huge experience in ship building and repair work

Challenges

1. **Lack of Infrastructure**: One of the major challenges facing the construction of a dry dock in Bangladesh is the lack of infrastructure. The country may need to invest heavily in building port facilities, transportation networks, and other related infrastructure to support the dry dock's operations.
2. **Environmental Factors**: The construction of a dry dock in Bangladesh could potentially have a negative impact on the environment, particularly if proper measures are not taken to mitigate the environmental impact of the project.
3. **Political Stability**: Bangladesh has faced political instability and corruption issues in the past, which could potentially impact the construction and operation of a dry dock.
4. **Competition**: There are already established dry docks in neighboring countries like India Singapore, Srilanka and Indonesia which could pose a challenge to the success of a new dry dock in Bangladesh.

In summary, building a dry dock in Bangladesh could be a viable option due to its strategic location and availability of skilled labor, but would also require significant investment in infrastructure and environmental safeguards.

The cost of building a dry dock can vary widely depending on a number of factors, including the size and complexity of the dock, the cost of labor and materials in the area where it is being built, and the level of technology and automation that is incorporated into the project. However, here are some rough estimates of the cost of building a dry dock based on various sources:

1. Small dry docks: Small dry docks designed for small boats or yachts can cost anywhere from US$100,000 to US$500,000, depending on the size and location of the dock.
2. Medium-sized dry docks: For medium-sized dry docks that can handle larger vessels such as cargo ships, the cost could range from US$20 million to US$100 million, again depending on the size, location, and level of technology involved.
3. Large-scale dry docks: Large-scale dry docks capable of accommodating supertankers and other large vessels can cost upwards of US$500 million to build.

It's important to note that these figures are estimated and can vary widely depending on the specific project. Additionally, there are ongoing costs associated with operating and maintaining a dry dock, such as labor, energy, and equipment maintenance, which should also be factored into the overall cost.

Average dry dock costs that are incurred by various types of vessel in every two and a half years are given below:

1. 1.2 to 1.6 million US$ for tanker (Depends on the size of tanker – Aframax to VLCC)
   Source: www.researchgate.net: *'Modeling the Dry-Docking Cost- The Case of Tankers' by Agamemnon Apostolidis*
2. Bulk carrier ranged from 1.1 to 1.9 million US$ (Depends on size of vessel – handimax/panamax/cape size) Source: www.drycargomag.com
3. Container Vessel:

Size (Teus)	Dry-docking cost 2007	Dry-docking cost 2009
<1000	504,673	515,170
1000-2000	469,930	587,010
>2000	982,484	644,639

Source: www.opcostonline.com – *Research paper 'Ship Operating Costs: Current and Future trends' by Richard Greiner*

According to daily star news of Dec 3/2021
Bangladesh now has a fleet of 80 oceangoing vessels, a record high since the country's independence.

Till October 2019, there were only 43 Bangladeshi flagged oceangoing vessels and it almost doubled in the last two years at a time when most business sectors were badly hit by the pandemic. Reportedly the total number of vessels owned by Bangladeshi nationals has reached over one hundred as of year 2022.

Some policy support from the government as well as a global price fall of second-hand ships in the early stages of the pandemic encouraged local entrepreneurs to make investments and seize the opportunity.

Moreover, several leading industrialists and commodity importers went on to buy their own ships to reduce transport costs. Bulk carrier with DWT 55000 to 65000 mt require to spend at least 400000 – 500000 USD in dry dock every 2.5 to 3 years span of time. Mostly those ship proceed to China/Indonesia/Singapore for

dry dock as Bangladesh does not have such large dockyard, we are dispatching huge revenue to outside our country which can be stopped if we have dockyard of such large scale.

Now a days, ship owners tend to increase cargo capacity of their vessels. So, the infrastructure need to be such that where we can accommodate 200 – 350 m length vessel such as Handimax, Panamax, Cape size bulk, Super tanker and VLCC tankers, Container vessel to attract the ship owner's interest.

Recently, the government signed a contract with two foreign companies to set up a shipbuilding facility at the Payra seaport in Patuakhali with an investment of $1.58 billion to cut import dependence for vessels and market ships globally. State-run Bangladesh Steel and Engineering Corporation under the industries ministry will provide land to Gentium Solutions, a Singapore and Australia-based company, and Damen Shipyards Group, a Dutch company, to construct the shipyard.

Table: Number of repaired vessel in notable Dockyards of Bangladesh (Year 2008-2019)

Ananda Shipyards and Engineering	DEW	Karnafuly Shipyard (PVT)	Khulna Shipyard Ltd.	Chittagong Dry Dock Ltd.	Year of Shipyard repair
17	12	8	12	24	2008
9	17	10	15	12	2009
13	20	8	11	13	2010
8	14	11	9	14	2011
13	15	14	13	17	2012
16	21	15	16	20	2013
14	9	12	18	23	2014
16	11	10	16	22	2015
19	14	17	20	26	2016
21	17	13	15	12	2017
14	19	16	23	31	2018
20	18	13	16	19	2019

Source: Respective Official websites

Interestingly among all the dockyards listed above, none of those having facility to accommodate ocean going vessel of above 20000 DWT which is inadequate with regards to blooming shipping market.

Construction of the first private dry dock of the country being built by Karnafuly Dry Dock Limited (KDDL) at Anwara upazila in Chattogram is likely to be completed by 2024. KDDL dry dock with a capacity of 10,000 DWT (deadweight tonnage) and a container port under the Karnafuly Dry Dock Special Economic Zone (SEZ) is likely to start its operations after the completion of its construction. KDDL is constructing the Dry Dock SEZ on around 45 acres of land at Anwara upazila in Chattogram at a cost of Tk 22 billion for building and repairing large ships and increasing container handling capacity of the Chittagong port. Out of around 45 acres of land, Bangladesh Economic Zones Authority (BEZA) has already allotted 20.98 acres and the rest is KDDL's own land. Managing Director of KDDL said that in Bangladesh, there is now only one dry dock of Chittagong Dry Dock Limited (CDDL) with the capacity of 20,000 DWT and that is run by the Bangladesh Navy. KDDL has been designed for vessels up to 253 metres in length. The dock floor has been designed to allow 'of-centre-line' docking of smaller vessels. The number of such vessels depends on

the length and width of the vessels. KDDL has taken the initiative to build four jetties so that ships do not have to stay afloat day after day for docking. Two jetties have already come under operation.

Around 4,000 ships operate through Chittagong sea port a year along with 100 ships owned by Bangladeshis. We mentioned that it is mandatory to repair these ships after every two to three years as per regulations. However, due to the capacity constraints of Chittagong Dry Dock Limited (CDDL), the owners of small ships are bound to repair their ships outside the country. Once the operation of KDDL starts, the small ships can be repaired there. This will save significant amount of foreign currencies for the country.

The followings are the comparison of capacities and key facilities of shipyard/dockyard of South and South-East Asia:

Drydock	Country	Capacity	Max size at block height	Length of berth	Dock and wharf crane	Gantry crane
Tuas dock	Singapore	360,000 dwt	350 mx66 m	350 m	1x240 tonnes	3x25/30 tonnes
Raffles dock	Singapore	330,000 dwt	355 mx60 m	430 m	2x80 tonnes	6x20 tonnes
Batam dock	Indonesia	150,000 dwt – 300,000 dwt	260 mx60 m	817 m	Hydraulic 18x(30-100) tonnes, Tower crane 3x10 tonnes	
Colombo dock	Srilanka	125,000 dwt	263 mx44 m		160 tonnes	
Karnafully dock	Bangladesh	125,000 dwt (not declared by dockyard yet as construction underway)	253 m			

According to Onomichi Dockyard Ltd. Colombo (Japan) the number of average ship repair in their dock is 150 vessels per annum generating US$ 30-40 million. So in Bangladesh, the average annual turnover of couples of mid-size dockyard would be US$ 150 million as opined by experts.

2008 to 2017, Bangladesh has exported 41 ships in 15 different countries. The revenue earned by these exports is USD 170 million.

Perhaps, Bangladesh has enormous capacity, ability and long experience in building small to mid-size ship and also has huge potential to boost the national revenue by exploring and developing the shipyard with international standard.

Proposal:

- The leading and notable ship builders and dockyard in Bangladesh can be summarized as follows:
  - Chittagong Dockyard Ltd. (CDDL)
  - Ananda Shipyard & Slipways Ltd. (ASSL)
  - Khulna Shipyard Ltd. (KSY)
  - Western Marine Shipyard Ltd.
  - FMC Dockyard Ltd.
  - Karnafuly Drydock Ltd. (KDDL)
  - Meghna Shipbuilders Ltd.

- Shipbuilding and dockyard owners can come forward with the collaboration of foreign investors may liaise with Govt. official and negotiate to procure (lease basis) land near river/sea port of having geographically important areas with marine workshop/service/spare parts delivery facility.
- Payra port will be the first choice to build such large scale dockyard due to the following facts:
  - Economically Payra port is not profitable like Chattogram or Mongla.
  - Due to inadequate channel depth deep draft vessel can't berth at Jetty side.
  - Large vessel with lightest draft can enter the harbor channel without trouble
  - Govt. has project to develop connectivity with other parts of Bangladesh
- Existing and established dockyard may increase their capacity of accommodating bigger vessel for repair and maintenance
- Interested entrepreneurs may start to build marine work shop and develop infrastructure near allocated shipyard area with following facilities:
  - Steel and pipe renewal workshop
  - Pipe rolling mill
  - Fabrication shop
  - Girder shop
  - Tubing shop
  - Radiography enclosures for safe working practices
  - In-house capability to perform NDT testing such as ultrasonic magnetic particle, liquid penetrant, visual (borescopes), eddy current, phase array ultrasonic, ferrite testing, PMI and hardness testing.
  - Exotic/Alloy pipe workshop
  - Combined blasting and painting workshop
  - Plate shop
  - Beam shop
  - Sub Assembly deck building shop

Conclusion

The dockyard industry in Bangladesh is in the process of establishing itself as a potential growth industry that could become the fourth biggest contributor to foreign exchange after remittances and the RMG sector within a period of less than 10 years. Government is the appropriate body to significantly influence the future growth and success of not only the shipyard industry for repair and maintenance, but also assist to provide raw materials and components with VAT exemption, necessary subsidiary for the training cost of skilled workers. Steps to be taken to deliver spare parts from foreign ports through green channel of customs as this industry require fast and quick delivery service of spare parts.



Captain Salah Uddin Mahmood

He passed SSC and HSC from Nasirabad Govt. Boys High School and Chattogram College in 1991 & 1993 respectively. Then attended pre-sea training in BMA and passed BSc in Maritime Science in 1995. He started his sea career as deck cadet in BSC and then sailed in various internationally reputed company as chief mate and master. He was Nautical Instructor in United Maritime Academy, Dhaka from 2013 to 2017. He developed HND/HNC program approved by SQA and also prepared Class-1/2 &3 (deck) STCW'10 preparatory course module approved by DG Shipping, Dhaka. He is the author of two professional books, namely 'Ship Stability, Part-1' and 'Terrestrial and Coastal Navigation'. Now, attending MSc program on Maritime Transport and Logistics.

Surveys and Audits with Cutting-Edge Technologies: A Fresh Perspective on Emerging Innovations

Mar. Engr. Mohammad Obaidullah Ibne Bashir

The ongoing development and expanded capabilities of artificial intelligence (AI) applications, coupled with their integration with robotics, are leading to the creation of a more expansive portfolio of Robotic and Autonomous Systems (RAS). These cutting-edge solutions are particularly beneficial to industries involved in maritime activities, such as shipping. The forward-thinking nature of innovation promotes RAS as a fantastic accelerator that persistently keeps the autonomy agenda moving forward. With the technological advancement and adaptation, marine robotics is emerging as one of the fastest-growing industries. This expansion may be seen in the advent of specialized technologies known as Remote Inspection Technology (RIT), which allows a Remote Inspection Vehicle (RIV) to visit a structure for inspection or survey remotely.

Background

The term "survey" refers to a procedure for determining if a ship and its equipment align with the relevant standards, most frequently the IMO's international conventions, the flag administrations' unique regulatory requirements, and the rules of a classification organization. The accepted method of carrying out such verification includes the acts of a surveyor who is officially authorized and who visit on board the ship to examine the condition, observe specific tests, and before marking the survey as complete when it is deemed satisfactory, check and accept any pertinent documentation.

For example, A confirmatory survey by the surveyor will verify any repair, installation, work completion and maintenance records under approved planned maintenance arrangements. The survey process has

evolved to the point where remote inspection techniques may be deployed to assist the surveyor in the survey process.

Therefore, a "remote survey" is a survey in which the verification is completed, in whole or in part, without the surveyor being present. In recent years classification societies have carried out various survey tasks remotely, particularly in cases where being present on board does not provide any further knowledge beyond what can be learned via remote involvement. The extent of information that may be obtained without a surveyor's physical presence has increased because of new monitoring and communications technologies, such as live streaming video and real-time condition telemetry, which has led to a rise in the use of the technique. It is acknowledged that many surveys, however, cannot be completed in remote entirely.

The global COVID-19 epidemic has posed several challenges for the marine industry, including completing surveys within due date to ensure compliance and safety. Due to the increased visibility of remote survey, certain surveyor visits have been replaced by workable substitutes to evaluate data without the surveyors visiting the ship or facility. A recent study by IACS (International Association for Classification Societies) indicate that less than 0.5% of required surveys (annual, intermediate, and renewal surveys) were done remotely by IACS members between 1 January and 30 September 2020, i.e., without any surveyor visits to the ship.

Potential Benefits of RITs

The next stage of maritime digitization is being paved by remote inspections, which give owners and operators new means to inspect newly constructed and operational vessels. However, there are several restrictions on remote inspection techniques (RIT); they can only be used in specific regulatory contexts and require trained operators. They do, however, have a lot of potential. Ship management can take use of both the benefits that are already available and those that will be accessible in the future by having a clear grasp of how RIT may be employed and by debunking common misconceptions regarding RITs.

RITs have several benefits for ship managers and operators. The capacity to conduct surveys while at sea, a more effective ship inspection procedure, and fewer overhead expenses are a few of them. Additionally, RIT provides superior data and photos that might enhance the repair procedure and make it simpler for superintendents to monitor and upkeeping hull.

The main benefit of RIT for surveyors is their capacity to reduce or even eliminate hazardous jobs while onboard, such as entering cramped areas, operating at heights, rafting, the requirement for staging, and the avoiding the tank coating damage. By using integrated data for survey preparation and reporting and collaborating with other remote specialists to analyze ship conditions, surveyors can increase the value of their reports to clients. Clients can thus receive transparent data that supports and elucidates survey findings increasing survey efficiency by up to 30% (Bureau Veritas).



Figure: Cargo hold hold frame inspection by drone
Source: Rivera Maritime Media

By logging inspection data, RIT also improves the quality of surveys. Recorded survey data can guide future surveyors by directly including it in survey reports and adding it to the vessel's inspection history. Looking even further into the future, the greater accessibility of digital data (such as pictures and videos) will encourage the creation of additional tools for enhancing survey efficiency and standards. These comprise comprehensive Artificial Intelligence (AI) models, automatic pattern identification techniques, and instruments for precisely determining the state of structures.

RTI's gives the power of remote seeing. Surveyors may safely conduct aboard inspections remotely using remote and augmented survey technology like drones, ROVs, and crawlers, enabling owners to streamline the inspection procedure.

With the help of RTI's, Owners can make choices remotely, thanks to three different methods of remote verification. Owners can upload collected photographs to categorization surveyors for later examination using offline remote verification. Remote verification that is partially online enables clients to videoconference with a remote centre set up by class societies and make choices in real-time. Fully online remote verification carries onboard data and image capture, submission, and verification concurrently and in real-time using linked devices. Thanks to technology that provides an excellent experience even in low connectivity and bandwidth, live-streaming capabilities have previously been tested to conduct a small engine test in China.

For example, many ROVs operating like small remote submarines are already used to examine hull components. Unattended Arial Vessels (UAVs) can be just as effective even though they are far less frequent. Flying drones are now suited for Class surveys thanks to advancements in visual monitoring technologies.

The most recent generation of sophisticated drone inspections far outperforms older ones. Cherry pickers, climbers, and scaffolding are no longer necessary to survey very high regions, thanks to UAVs. As a result, they are less expensive, safer, and resource-intensive than any conventional survey method.

For instance, a quick drone can now complete an examination that required two crew members in the past, thoroughly inspecting the entire site. However, crews are still an essential component of the inspection process.

RITs, which may operate in the air or underwater, are considered a practical choice for inspecting a ship and its structures to find corrosion, fracture, and other problems.

Operators confirm that reduced survey time is an inferred promise with RIT deployment. As a result of sophisticated and unmistakably novel technical applications, the effective integration and continued development of the capabilities provided by RIT have the potential to alter some elements of operations in the maritime sector radically. Service robots continue to be the foundation of RIT and represent a historical development in remote inspection, survey, and maintenance.

RIT has the potential to conduct close-up surveys and thickness measurements, contribute to the mitigation of hull fouling or biofouling, and ultimately reduce fuel consumption. Mitigation measures typically entail direct human interventions, but they are gradually shifting to a RIT mode with "human-in-the-loop," and possibly towards full autonomy in the not-too-distant future.

Classification societies, shipowners, manufacturers, and service providers adamantly argue that RIT has the potential to replace the current, time-consuming rudimentary inspection system to accomplish the goals as mentioned above effectively and efficiently.



Figure: Draft measurement by drone
Source: Internet

Specific Applications of RITs in Survey, Inspection, and Audits

Drones are currently most commonly used in shipping for inspection tasks, while certain class societies already include drone use in their survey programmes. The ease with which drones can visit difficult-to-reach regions and the reduction in dangers enables a much more thorough study. Examples comprise:

- Checking the tops of cranes, restricted areas, and flare stacks. The drone's results can be used to create task specifications and access criteria if required for repair work.
- Remote inspection of the exterior or interior of tanks and other hull portions inaccessible to surveyors during standard on/off-hire condition surveys or standard inspections.
- Draft surveys
- Cargo surveys in holds
- Inspection before handover, during ship repairs, conversions, or new construction
- Tank and aerial damage surveys following an incident
- Examination before ship reactivation
- Mooring and anchorage checks
- Examining the towing system, from the tow cables to the unmanned towed object
- Aerial filming of ship launches, deliveries, mobilizations, demobilizations, and project cargo loading
- Ship emissions and pollution prevention.
- Search and Rescue.
- Under water Survey, Examination or Hull cleaning.

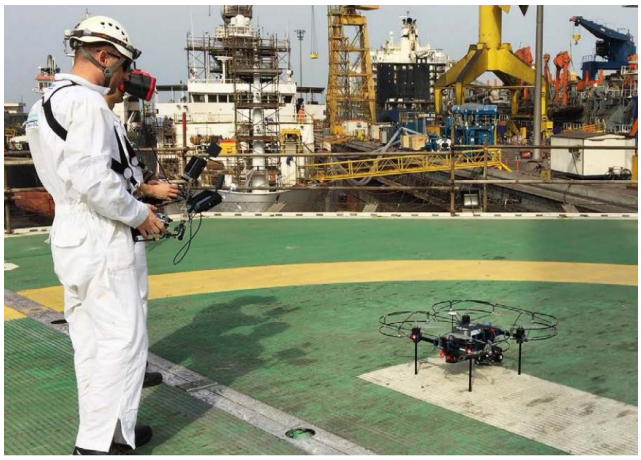


Figure: Use of Drones by Surveyors
Source: DNV

Remote Inspection Methods

RIT includes several different technologies. These consist of crawlers, poles, remotely operated vehicles, airborne and underwater drones. Presently, RIT is utilized in the following applications:

- Global Visual Inspections (GVI), Ultrasonic Thickness Measurements (UTM), and close-up surveys are carried out by unmanned aerial vehicles (UAV) for ships undergoing intermediate and renewal surveys.

- Underwater drones and remotely operated vehicles conduct underwater surveys without divers.
- Crawlers are used instead when UAVs cannot take UTM or scan plates from a vessel's interior, poles etc.

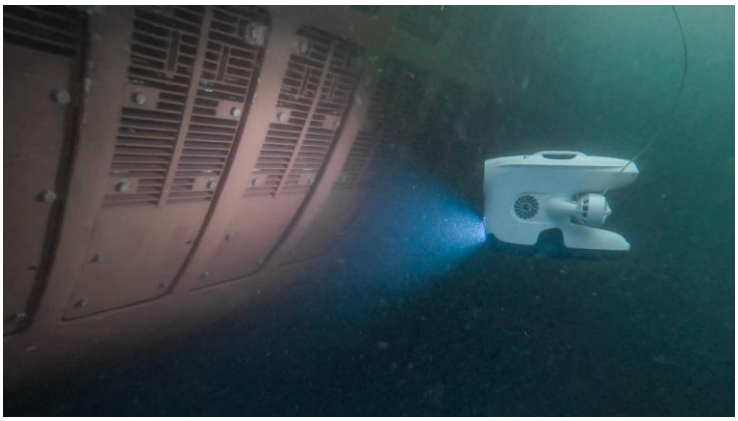


Figure: Underwater examination drones
Source: Rivera Maritime Media

RIV Survey Methodology

A drone outfitted with a high-definition camera and skilled surveyors working as part of the RIV team conducts remote surveys. The drone being utilized is made to illuminate the inspected area, even in cramped, dark areas, so that high-resolution images can be taken. Real-time RIV surveys are conducted by one surveyor operating the RIV while a second surveyor watches the video recording that is being broadcast to a tablet from a distance. Re-examining certain aspects of the ultrahigh-resolution video is possible, for example, by expanding a particular area on the screen. A conventional close-up survey might still be necessary if the damage is discovered during the recording.

When appropriate, an electronically signed e-certificate can be produced once the remote survey has been completed and surveyors have assessed a ship's compliance. This guarantees a fully digital experience throughout.



Figure: Remote Survey Centre
Source: DNV

Concerns of law and regulation

The gradual adoption of RIT applications by flag State authorities, classification societies, and ship owners indicates that the paradigm shift has already started. These applications will ultimately have important regulatory implications in the context of control, enforcement, and compliance and contribute to meeting requirements under environmental, climate, and shipping regulations. Recommendation 42 and

Unified Requirement (UR) Z17 on Procedural Requirements by the International Association of Classification Societies (IACS) have outlined the fundamental principles and procedural guidelines concerning operations concerning the usage of RITs. Specific forms of RITs in remote inspection and survey activities are carefully included in international standards published by IACS.

One significant disadvantage that may deter innovation and industry expansion is liability issue. Ship owners need a "safety net" since they are essential to international trade. However, surveys and inspection via technologies necessitate numerous individuals' participation, making it challenging to assign blame. For member states to move forward in a spirit of cooperation and nurture and encourage technological innovation through partnership, agreement is needed, especially at the international level.

Dealing with Legal Difficulties

A sensible vessel owner who is thinking about using RTI and RIV on board should:

1. Clarify the regulatory approval class and flag before using RTI and RIV.
2. Ensure drone operators have the necessary certification and type-approved training.
3. For each flight, have a current activity permit from the appropriate civil aviation authority.
4. Complete a thorough risk assessment for using the drone.
5. Have the proper operational procedures, such as a work permit.
6. RIVs used in hazardous areas/tankers should have the necessary type approved certification.

A future with more advanced autonomy

RIVs are expected to become more popular and useful in the upcoming decade.

The most recent UAV generation comes with powerful measurement and detection equipment. The most recent drones can be equipped with anything from LiDAR systems to create 3D maps of inspection sites to ultrasonic thickness measurement (UTM) equipment to monitor hull integrity. Because drones can access and survey areas that would be challenging and dangerous for crews or surveyors, this is especially advantageous to the maritime industry. With LiDAR technology, these drones of the future might rely on an autonomous guiding system to independently enter compartments and conduct surveys without human intervention. Future RIVs may be sophisticated and self-aware enough to automatically locate doors into small locations and assess their surroundings while ensuring their investigations are thorough and secure.

Augmented inspections can use cutting-edge technology like data science and Artificial Intelligence (AI) models employing pattern-recognition software to identify potential structural flaws and gauge their severity. The 3D digital twin model created can incorporate data from ships or offshore units collecting data over time, and data analytics systems can also be incorporated. Throughout the operational lifecycle, this enables ship owners and managers to monitor and maintain their assets more effectively.

Limitations

Even though RIT is developing quickly, remote inspection methods are still limited. Umbilical drones are not ideal because their cords limit maneuverability, and battery-powered drones can only stay in the air for as long as their batteries live. Drones cost a lot of money. However, these elements are typical of developing technology, and some advancements have already been made. Costs have decreased by 20%, flight lengths and battery capacity have grown, and RIV usage will rise.

Finally, a few words

The integration of AI and robotics is revolutionizing the maritime industry, providing cutting-edge solutions that are transforming the way we approach traditional maritime survey. The development of RAS is a testament to the power of innovation and the potential it holds for the future. As we continue to push the boundaries of what is possible, we can expect to see even more exciting advancements in the field of marine robotics. More research and development are needed to work with service providers for remote inspection vehicles and methods as a trustworthy replacement for conventional inspection approaches. Together, we can successfully and safely incorporate the newest technical developments into the maritime sector.

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5. MSC 102/22/11 Proposal to develop guidance on remote surveys in response to an increase in their use during the COVID-19 pandemic



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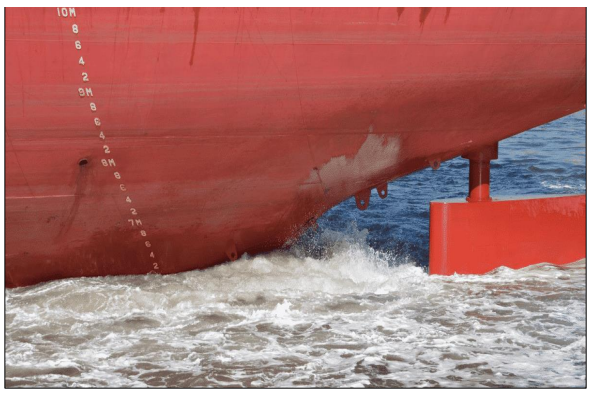
Here is all about The Draft Survey

Captain Md Mozaharul Islam

Archimedes, the Ancient Greek scientist first stated the principle of floatation. According to him, all the objects placed in a liquid experience an upward force that allows the body to float if it displaces water with a weight equal to the weight of the body. This upward force is known as the buoyant force and the law is known as the law of buoyancy. When a body is immersed partly or wholly in a liquid, there is an apparent loss in the weight of the body which is equal to the weight of the liquid displaced by the body.



Forward (port) draft marking of a ship



Aft (port) draft marking of a ship

Vessel's draft (draft in the American spelling, draught in the British) is one of the principal dimensions of any waterborne vessel and is defined in technical terms as the distance between the ship's keel and the waterline of the vessel.

What is the Principle of Draft Survey?

During the ship's construction Naval Architect determines the underwater volume of the ship with refer to the designed draft of the Vessel. The data are provided in the Stability booklet and handed to Ship Owner along with the Vessel. So, according to Archimedes's Laws of floatation by reading the draft of the Vessel, one can find out the weight of the ship.



Source: Internet

In principle, draft surveys require only a measurement of the water displaced by the vessel before and after the cargo is transferred, along with a measurement of the water's density. Water displacement is measured through draft marks on the ship and converted to a volume using draft tables.

Why Draft Survey?

Liquid and dry goods are different types of bulk cargo, each with unique characteristics and handling requirements. Dry bulk cargo refers to tangible goods shipped in raw, unprocessed form, such as grains, minerals, and ore. Solid bulk cargo is typically transported in large, specialized bulk carrier ships and is stored in large load holds.

On tankers, the measurement of cargo quantity loaded is simple. We know the density of the cargo and we know the volume. It is easier to know the weight of the cargo loaded. But with bulk cargoes, we cannot measure the weight by just measuring the height of the hold to which cargo is loaded. This is because, unlike liquids, solid cargoes would not take the shape of the hold. Calculating the cargo loaded with draft survey is the most appropriate way.

But it isn't only with solid cargoes. Sometimes we have to measure the cargo quantity of liquids by the draft survey. One such cargo is Mollasses loaded on chemical tankers. This cargo has air in it and thus the density of this cargo is not uniform. Calculating the way we calculate the weights for other liquids will give the wrong quantity. A draft survey is the answer in this case too.

How are Draft Surveys Carried Out?



The inspectors are responsible for ensuring the safety and stability standards using small watercraft or boats to get around the ship, inspecting for any damage or wear and tear on the external hull, propellers, and rudder. Also, they check and note down the draft readings as measured at the multiple scales painted on the sides of the vessel. These painted measures are generally located at six major points for medium to large-size vessels- fore port side, midship port side, stern port side, fore starboard side, midship starboard side, and stern starboard side.

Once the preliminary readings are taken, these are then cross-checked with the values noted in the stability booklet of the vessel. Along with this, the weight of the vessel is then calculated using the Archimedes principle. Since this requires the correct density of the water in the port, a sample survey of the water is routinely conducted so that any fluctuations can be monitored. On completion of the survey, the vessel is given a certificate of clearance from the port officials and is allowed to either enter the port or continue on her journey.

With draft survey we measures the initial weight (displacement) of the ship and it measures the final weight (displacement) of the ship after loading. The difference plus all the weights that were taken out (like ballast) will be the cargo loaded.

Basics of Draft survey

With draft survey calculations, all we want to know is the difference in the ship's arrival weight (Displacement) and departure weight (displacement).



Let us say we have these figures

On Arrival	On Departure
Displacement: 20000 T Cargo: 0 Ballast: 6000 T Other weights: 1000 T	Displacement: 50000 T **Cargo: ???** Ballast: 500 T Other weights: 1000 T
The difference in displacement is 30000 T. Out of this 5500 T of ballast was removed and some cargo was loaded at the port. It is a simple calculation to know the quantity of the cargo loaded which is 35500 T.	

In this simple calculation, it is not difficult to know the ballast and fuel on board. What we need to know is the displacement of the ship on arrival and after completion of loading. Once we know that, we can know the cargo quantity. The easiest way to calculate the ship's displacement is by noting down the draft of the vessel and looking for the displacement for that draft in the trim and stability booklet.

That is the simplest way of saying it but then there are a few corrections to this which will be discussed.

Draft of the vessel

- There are two drafts for a vessel. Draft at forward and aft perpendiculars and at midship of these two. This is the draft that is listed in the ship's trim and stability booklet.
- Drafts at actual draft marks painted on ship side.

So to get the displacement from the trim and stability booklet, we must get the drafts at the perpendiculars. What we will get from the visual drafts will not be the drafts at perpendiculars in most of the cases.

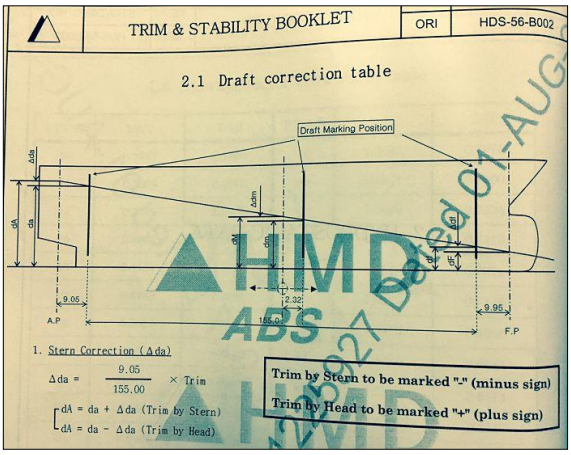
Let us say we have the visual draft as follows. In draft survey calculation we call the visual drafts as "Apparent drafts".

So let us say that the mean of both side of the apparent drafts is
Forward = 6.43 m Aft = 8.53 m Midship = 7.42 m Apparent Trim = 2.1 m

Now we need to bring these drafts to the perpendiculars. The formula for correction to the visuals drafts to bring it to the perpendiculars is will find these distances in the Trim and stability book of the ship. Have a look at these corrections for one of the ship.

$$\text{Draft Correction} = \frac{\text{Distance from perpendicular} \times \text{Apparent Trim}}{\text{Length between visual draft marks}}$$

As we can see that the distance from forward perpendicular to the forward draft mark is 9.95 meters. So the correction to the forward draft would be 9.95 x 2.10 / 155. This will be equal to 0.135 meters. As the forward perpendicular is forward of the draft marks and we have stern trim, this correction will be negative.



Same way for the apparent trim of 2.10 meters, the corrections to the apparent drafts are

Know the draft at Perpendiculars

	Forward	Mid	Aft
Apparent Mean	6.43	7.42	8.53
Correction	-0.135	0.031	0.123
Draft Corrected	6.295	7.451	8.653
Actual Trim	2.358		

So the drafts at forward and aft perpendiculars and midship will be 6.295 m / 8.653 m / 7.451 m respectively.

Ideally we should now take the midship draft (7.451 m in this case) and look for the displacement from the trim and stability booklet.

But there can be errors in this draft and we have to make sure that draft is correct. These errors could be

- Errors in reading a few of the visual drafts
- Errors due to Hog or Sag of the vessel

To minimize these errors we finalize the draft of the vessel by having a mean of means draft. This is also called a Quarter mean draft.

$$\text{Mean of Means} = \frac{(6 \times \text{Midship draft}) + \text{Forward draft} + \text{Aft draft}}{8}$$

Mean of means is considered to be the accurate draft of the vessel at the midship. This is the draft we need to enter in the trim and stability booklet.

Below is the mean of means draft for our example.

Know the Mean of means Draft

	Forward	Mid	Aft
Apparent Mean	6.43	7.42	8.53
Correction	-0.135	0.031	0.123
Draft Corrected	6.295	7.451	8.653
Actual Trim	2.358		
Means of Means Draft	7.45675		

Calculating displacement of the ship

Now that we know the draft of the ship, we can open the trim and stability booklet and check the displacement for this draft. We may have to interpolate to get the exact displacement. Here is the relevant page of Trim and stability booklet for this ship.

DRAFT MEAN (EXT. m)	7.400	7.450	7.500	7.550	7.600	7.650	7.700
MOULD VOLUME (m3)	29742	29972	30202	30432	30663	30895	31127
K.B.(m)	3.895	3.922	3.949	3.976	4.003	4.030	4.057
K.M.L.(m)	285.53	284.77	284.03	283.31	282.62	281.98	281.38
IT (m4)	344098	344896	345691	346490	347289	348095	348903
WP Area (m2)	4605.6	4613.8	4622.1	4630.4	4638.8	4647.3	4656.1
Wetted Surface (m2)	6297.5	6320.4	6343.3	6366.1	6388.9	6411.6	6434.4
Cb	0.7189	0.7195	0.7202	0.7209	0.7216	0.7223	0.7230
Cp	0.7241	0.7247	0.7254	0.7260	0.7267	0.7274	0.7280
Cw	0.8195	0.8210	0.8225	0.8239	0.8254	0.8268	0.8283
Cm	0.9928	0.9928	0.9929	0.9929	0.9930	0.9930	0.9931
TRIM	DISPLACEMENT (t)						
-4.000	30403	30652	30902	31152	31402	31653	31904
-3.000	30406	30652	30898	31145	31392	31639	31888
-2.000	30435	30679	30922	31167	31411	31656	31902
-1.000	30493	30733	30974	31214	31456	31697	31940
0.000	30582	30818	31055	31292	31530	31768	32007
1.000	30696	30929	31163	31397	31631	31866	32101
2.000	30831	31061	31292	31523	31755	31987	32219

Displacement from T&S Booklet

	7.45 m (Draft)	7.50 (Draft)
Trim of 3.000 Meters	30652	30898
Trim of 2.000 Meters	30679	30922
Trim of 2.358 Meters	30669.334	30913.408
Displacement for Draft 7.4565 Meters	30702.28	

So the displacement for our draft of 7.45675 m will be 30702.28.

We have now got the displacement for the actual draft of the vessel. But there will be few corrections to this displacement. Let us see what these are.

1st Trim correction

The draft and displacement we got so far is at the mean of aft and forward perpendicular. As per Archimedes principle, a floating ship displaces the amount of water equal to its own weight. And the ship floats at the center of floatation. So the correct displacement is the displacement corresponding to the draft at the center of floatation and not at the mean draft. The correction applied to the displacement at mean draft to bring it to the displacement at center of floatation is called the "1st Trim correction".

The formula for 1st trim correction is

$$\text{First Trim correction} = \frac{\text{Trim (in cms)} \times \text{LCF (in meters)} \times \text{TPC}}{\text{LBP (in meters)}}$$

As we need the values of TPC and LCF for calculating 1st trim correction, open the Trim & stability booklet and find these values for the vessel's draft. Again we have to do the interpolation to get the exact values.

Get the values from T&S booklet

	7.45 (Draft)	7.5 (Draft)	7.45675
TPC	48.945	49.015	48.992
LCF	1.0465	0.9555	0.9851

Now let us calculate the 1st Trim correction for our example.

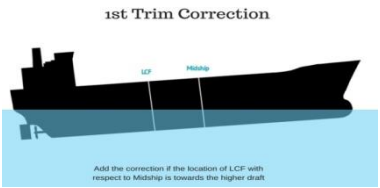
$$\text{First Trim correction (in Tonnes)} = \frac{235.8 \text{ cms} \times 0.9851 \text{ Meters} \times 48.992}{174 \text{ Meters}}$$

In this case it comes out to be 65 T but it can have larger value in other situations. This 1st trim correction we need to add to the displacement we got earlier.

Sign of 1st trim correction

This is not so difficult to find. We have the draft at the Midship and we are applying the correction for change in draft because LCF is not at the midship. Now let us say vessel has stern trim and LCF is aft of midship. Which draft will be more? The one read at the LCG or at the midship?

The draft at the LCF will be more. So in this case the correction need to be added to the midship displacement we have got. So for sign of 1st trim correction, all we have to see is the location of LCF with respect to Midship.



1st Trim Correction

Stern Trim

Correction positive if LCF is aft of Midship

Correction Negative if LCF is Forward of Midship

Forward Trim

Correction Negative if LCF is aft of Midship

Correction Positive if LCF is Forward of Midship

So for sign of 1st trim correction, all we have to see is the location of LCF with respect to Midship. Then by pure logic, we can find out if we need to add that correction or subtract.

2nd Trim correction

Now there is this another correction. First trim correction was because LCF was not at the midship. If the LCF was at the midship, there would not be any 1st trim correction.

The distance of LCF from the midship is given in the trim and stability booklet. For hydrostatic ship particulars for some ships, the value of LCF is at zero trim condition. For example see below

HYDROSTATIC PARTICULARS

Midships is 42.400 m Forward of After Perpendicular
Positive LCF and LCB - Forward of Midships
Base Line at Top of the Keel

d-Draft @ top of keel (m)	Salt water S.G.=1.025 t/m³ Displacement (t)	Dead-weight (t)	T.P.C. Immers (t)	M.C.T. One cm (tm)	LCB from Mdl. (m)	LCF from Mdl. (m)	KB @ base (m)	KM @ base (m)	KML @ base (m)
3.70	3735	2102	10.72	53.49	1.50	1.48	1.91	6.76	123.3
3.71	3746	2113	10.72	53.52	1.50	1.48	1.92	6.75	123.1
3.72	3757	2124	10.72	53.56	1.50	1.48	1.92	6.75	122.8
3.73	3767	2134	10.73	53.60	1.50	1.47	1.93	6.74	122.5
3.74	3778	2145	10.73	53.63	1.50	1.47	1.93	6.73	122.3
3.75	3789	2156	10.73	53.67	1.50	1.47	1.94	6.73	122.0
3.76	3800	2167	10.74	53.71	1.50	1.46	1.94	6.72	121.8
3.77	3811	2178	10.74	53.74	1.50	1.46	1.95	6.71	121.5
3.78	3821	2188	10.74	53.78	1.50	1.45	1.95	6.71	121.3
3.79	3832	2199	10.74	53.82	1.50	1.45	1.96	6.70	121.0
3.80	3843	2210	10.75	53.86	1.50	1.45	1.96	6.69	120.8

Now if the vessel is trimmed, the position of LCF will change slightly because of change in water plane of the ship. 2nd Trim correction takes care of this change of position of LCF because of trim of the vessel.

The formula for 2nd trim correction is:

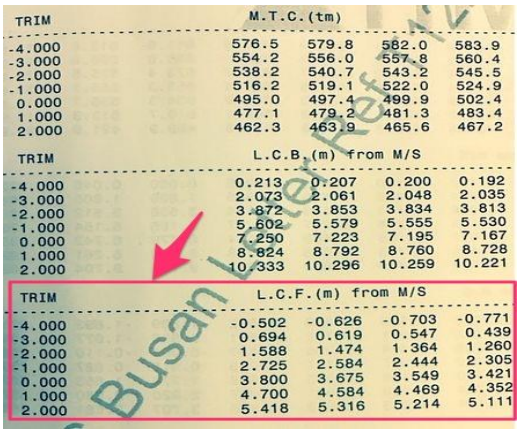
$$\text{2nd Trim correction} = \frac{\text{Trim}^2 \times 50 \times (\text{Dm} - \text{Dz})}{\text{LBP (in meters)}}$$

Dm - Dz : *Rate of change of MCTC per meter*

	MCTC (-50 Cms)	MCTC (+50 Cms)
	Draft 6.95	Draft 7.95
	474.2	525.9
Dm-Dz	51.7	

To get the value of Dm-Dz, get the value of MCTC for (mean draft +50 cms) and for (mean draft-50 cms). The difference between these two values of MCTC will be the value for Dm-Dz.

With this value of Dm-Dz, we will get 2nd Trim correction as 35 T.



TRIM	M.T.C.(tm)			
-4.000	576.5	579.8	582.0	583.9
-3.000	554.2	556.0	557.8	560.4
-2.000	538.2	540.7	543.2	545.5
-1.000	516.2	519.1	522.0	524.9
0.000	495.0	497.4	499.9	502.4
1.000	477.1	479.2	481.3	483.4
2.000	462.3	463.9	465.6	467.2

TRIM	L.C.B.(m) from M/S			
-4.000	0.213	0.207	0.200	0.192
-3.000	2.073	2.061	2.048	2.035
-2.000	3.872	3.853	3.834	3.813
-1.000	5.602	5.579	5.555	5.530
0.000	7.250	7.223	7.195	7.167
1.000	8.824	8.792	8.760	8.728
2.000	10.333	10.296	10.259	10.221

TRIM	L.C.F.(m) from M/S			
-4.000	-0.502	-0.626	-0.703	-0.771
-3.000	0.694	0.619	0.547	0.439
-2.000	1.588	1.474	1.364	1.260
-1.000	2.725	2.584	2.444	2.305
0.000	3.800	3.675	3.549	3.421
1.000	4.700	4.584	4.469	4.352
2.000	5.418	5.316	5.214	5.111

Busan Internet

The 2nd trim correction is always positive.

But see the hydrostatic particulars of the vessel that I took the data from. LCF values are given for different trims.

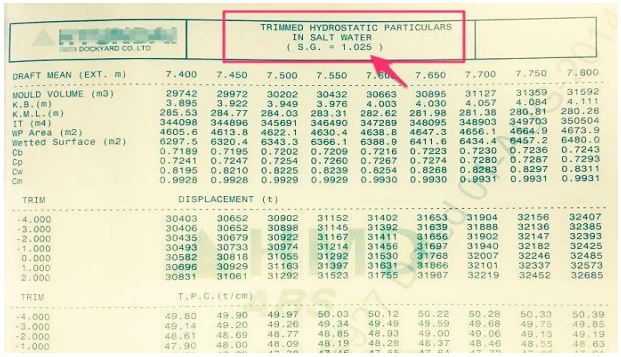
We can interpolate to get the LCF for actual trim of the vessel. In this case 2nd trim correction will not be applicable.

Final Displacement

Once we have 1st trim correction and 2nd trim correction, we need to apply these to the ship's displacement. So the actual displacement with respect to the draft at LCF will be Displacement at Midship + 1st Trim correction + 2nd Trim correction In our example this would be 30702.28 + 65 +0 = 30802.28 T

Density Correction

We have now got the displacement for quarter mean draft. To this displacement we have applied 1st trim correction and 2nd trim correction. We now have vessel's actual displacement. But this displacement is in salt water density of 1.025 as most of the hydrostatic tables have the data for that density.



TRIMMED HYDROSTATIC PARTICULARS IN SALT WATER (S.G. = 1.025)

DRAFT MEAN (EXT. m)	7.400	7.450	7.500	7.550	7.600	7.650	7.700	7.750	7.800
MOULD VOLUME (m3)	29742	29972	30202	30432	30663	30895	31127	31359	31592
K.B.(m)	3.895	3.922	3.949	3.976	4.003	4.030	4.057	4.084	4.111
K.M.L.(m)	285.53	284.77	284.03	283.31	282.62	281.98	281.38	280.81	280.28
IT (m4)	344098	344896	345691	346490	347289	348095	348903	349703	350504
WP Area (m2)	4605.6	4613.8	4622.1	4630.4	4638.8	4647.3	4656.1	4664.9	4673.9
Wetted Surface (m2)	6297.5	6320.4	6343.3	6366.1	6388.9	6411.6	6434.4	6457.2	6480.0
Cb	0.7189	0.7195	0.7202	0.7209	0.7216	0.7223	0.7230	0.7236	0.7243
Cp	0.7241	0.7247	0.7254	0.7260	0.7267	0.7274	0.7280	0.7287	0.7293
Cw	0.8195	0.8210	0.8225	0.8239	0.8254	0.8268	0.8283	0.8297	0.8311
Cm	0.9928	0.9928	0.9929	0.9929	0.9930	0.9930	0.9931	0.9931	0.9931

TRIM	DISPLACEMENT (t)								
-4.000	30403	30652	30902	31152	31402	31653	31904	32156	32407
-3.000	30406	30652	30898	31145	31392	31639	31888	32136	32385
-2.000	30435	30679	30922	31167	31411	31656	31902	32147	32393
-1.000	30493	30733	30974	31214	31456	31697	31940	32182	32425
0.000	30582	30818	31055	31292	31530	31768	32007	32246	32485
1.000	30696	30929	31163	31397	31631	31866	32101	32337	32573
2.000	30831	31061	31292	31523	31755	31987	32219	32452	32685

TRIM	T.P.C.(t/cm)								
-4.000	49.80	49.90	49.97	50.03	50.12	50.22	50.28	50.33	50.39
-3.000	49.14	49.20	49.26	49.34	49.49	49.59	49.68	49.75	49.85
-2.000	48.61	48.69	48.77	48.85	48.93	49.00	49.06	49.13	49.19
-1.000	47.90	48.00	48.09	48.19	48.28	48.37	48.46	48.55	48.63

Now if the water density around the vessel is different than 1.025, the displacement of the vessel will change. For draft survey, we need to measure the density of dock water just before or after reading the visual drafts. The density is measured by draft survey hydrometer with a sample of dock water drawn from around the vessel. The density of dock water changes with depth. So it is important to know at what depth the sample is drawn. Many take the sample from a depth that is half the draft of the vessel. Others prefer to take the sample by running the emergency fire pump. Now say we have measured the density and we have the dock water density as 1.010

So how to correct the displacement we calculated so far for density?

$$\text{True Displacement} = \frac{\text{Displacement} \times \text{Dock Water density}}{\text{Hydrostatic table density}}$$

So in our example it will be 30802.28 x 1.010/1.025. That will be equal to 30351.51.

Cargo quantity from initial and final displacement

Apart from calculating the displacement, we need to know the existing weights of the vessel. For example, we need to know the exact weight of ballast, Fuel oil, Lube oil, fresh water, etc. on board on arrival. That is not a difficult thing to know. But there are some best practices.

- First, it is easier to measure the quantity if a tank is either completely full or completely empty. This also removes ambiguity and measurement error.
- Second, the vessel must not be down by head (negative trim). This is because it brings ambiguity to the actual quantity of ballast in a tank.
- Third, since we need to know the weight of the ballast, we must know the density of the water in the ballast. We will know the volume from the sounding table and multiplying with the density will give the weight in each ballast tank.
- Fourth, we need to measure and sound each space on the ship and not assume that it is empty. For example, if there are any void spaces, we must sound these spaces as well. So now we will know what contributes to the arrival displacement of the ship.

Arrival displacement = Lightweight of ship + Ballast + Fuel + Freshwater + Lube oil + Constants.

And among these things, we know the quantity of ballast, fuel, lube oil, and freshwater. We need to repeat this calculation and measurement of all spaces after the completion of loading.

Departure Displacement = Cargo+Lightweight of ship + Ballast + Fuel + Fresh water + Lube oil + Constants

Lightweight of the ship and constants will remain the same and so these do not matter. We would know the arrival and departure displacement from the draft survey. All other weights we know by sounding and measurement. The only known is the cargo loaded. It is simple mathematics then to know the cargo quantity.

Calculating constants on arrival

Calculating constants is not really required if our aim is only to know the weight of the cargo loaded. This is because the quantity of constants will not change. But calculating the constants on arrival is a good practice. This gives a fair idea of the correctness of the calculation. For example, let us say we know that constants will be in the range of 200 to 300 tons. If initial calculations give too high or too low constants, we know something is wrong somewhere. We can sometimes get negative constants. This would mean that we have done some mistake and we must find it and correct it. It may be that we have wrong drafts, wrong soundings, etc. Whatever it is, we must correct it before loading starts.

In order to prove the accurate result of the draft survey the vessel has to comply with the following:

- To be upright in case not possible, the list must not be more than 0.5º; Minimum possible trim and in all cases, within the corrections covered in the ship's tank sounding tables;
- Draft marks to be well visible, painted and its distance to the forward or aft perpendicular should be known;
- Means of access in order to check draft from seaside to be available;
- The vessel has to be provided with approved hydrostatic and tanks sounding tables;
- Minimum ballast tanks to be slack;
- All sounding pipes to be unobstructed and capable of serving their intended purpose.
- The most essential part of each draft survey is the correct observation of all of the vessel's drafts. But as every experienced draft surveyor knows, the above is easy to be said and hard to be accomplished due to the following factors:

- Due to the height of the jetty the present draft could not be seen horizontally or in some cases could not be seen at all.
- Draft marks are positioned under or in close proximity to jetty's fenders.
- Ripples or waves in the port basin due to passing vessel, insufficient break water protection etc.
- Insufficient illumination during the night;
- Draft marks missing or in poor condition;
- Vessel's rolling or pitching;
- Change of draft due to strong current;
- Change in draft due to thermal expansion of the vessel's hull due to the solar heat radiation;

Typical draft mark



Draft mark in bad/unreadable condition



Conclusion

Draft survey is widely used for cargo measurement. It is acceptable way of measuring the cargo quantity. The calculation however requires practice. It may sometimes be confusing to seafarers using the draft survey for the first time. This can lead to errors in calculations and cargo claims. We must know the basics of the draft survey. Once we know that draft survey would not look that difficult.

Sources:

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Captain Md Mozaharul Islam
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The Charting the Course: Exploring the Vital Role of Marine Surveys and Surveyors in the Maritime Industry

Captain Md Towhidul Islam

The article is written to provide an introductory understanding of marine surveying and its importance in the maritime industry. It is aimed at individuals who are new to the maritime business and wish to gain a fundamental understanding of marine surveying.

Why the maritime industry needs marine surveys?



Marine surveys are an essential part of vessel ownership and operation. They are conducted by marine surveyors who are trained and certified professionals with expertise in assessing the condition of marine vessels and ensuring compliance with relevant regulations and standards, cargo matters, including pre-purchase inspections, insurance surveys, and regulatory compliance inspections. The surveyor will assess the vessel's hull, machinery, systems, and safety equipment to ensure that they are in good condition and functioning properly.

Surveys are typically conducted by independent surveyors who are not affiliated with the vessel owner or operator. This ensures that the surveyor's assessment is unbiased and objective. The surveyor will provide a detailed report outlining the findings of the survey and any recommendations for repairs or maintenance.

Marine surveys are very diverse, but most surveys encountered in practice are carried out for the following purposes:

- statutory purposes – mainly for maintenance of ships, equipment, and operational standards to facilitate trade, commodity, quality, and quantity.
- classification, insurance, damage.
- sale, purchase, or chartering contracts



What does marine survey means?

Marine surveys have become an essential service in the maritime industry, playing a crucial role in monetary relation activities. Their purpose is to document specific events and their consequences for the stakeholders involved.

Typically, the events that are subject of a survey are related to the:

- assessment of a vessel condition (on-hire/off-hire survey, pre-purchase survey, pre-entry survey, damage survey),
- assessment of cargo quality and quantity (cargo survey, damage survey to assess damage to the cargo),
- radio survey (to check and repair, if needed, of ships' radio equipment).



What is a Marine surveyor?

A Marine Surveyor is a skilled professional who conducts inspections of various matters within the maritime industry. Their role involves examining facts, collecting evidence, and determining causes to offer an independent assessment of a ship's condition, cargo, equipment, or other aspects.

They must follow their clients' instructions and fulfill their duties with skill, ability, and reasonable diligence. Marine surveyors play a crucial role in verifying compliance with negotiated agreements between parties during commercial relations. They also provide expert consultation on the condition, construction, and damage of ships, stowage and transportation of cargoes, and can assess values for insurance claims or appraisals for sale.

To be a marine surveyor, a person must have many years of experience in the marine sector and possess qualifications and expertise in various domains related to ships, cargo, maritime transport, commercial, and legal matters of shipping. A marine surveyor must also have excellent communication skills, patience, diplomacy, and attentive listening ability.

Who needs the services of a marine surveyor?

Parties that may require the service of a marine surveyor can be classified in the following:

A marine surveyor must possess a comprehensive understanding of all aspects of vessel operation, including the responsibilities and authority of each party involved.

• Parties with interest in cargo • Vessel's owner/charterer • Vessel's and cargo's insurer

The service of a marine surveyor is essential for parties with interests in cargo within the maritime trade. These parties may include cargo owners, shippers, cargo receivers, buyers, sellers, and charterers, each with distinct rights and responsibilities that must be understood by the marine surveyor.

In addition to cargo parties, vessel owners and charterers are also important clients of marine surveyors. The vessel owner and charterer typically have distinct rights and responsibilities regarding vessel operation, and in some cases, the vessel owner may also be the cargo owner.

On whose behalf does the marine surveyor work?

A marine surveyor typically works on behalf of a client who requests the survey, such as a cargo owner, shipper, receiver of the cargo, buyer, seller, or charterer. The client's interests are the main focus of the marine surveyor's work, and they are expected to follow the client's instructions while carrying out the survey. The survey provides an independent assessment of the condition, quantity, or quality of cargo, the condition of a ship, or damage to cargo or ship, and can result in a statement or certificate that the client can use to protect their interests.

In some cases, marine surveyors may also work on behalf of insurance companies to assess claims related to damage or loss of cargo or vessels. However, in such cases, the surveyor may be in a conflict of interest with other parties involved, and it is important for them to maintain impartiality and act in accordance with their professional ethics and standards.

Marine survey and its categories

Marine surveys can be divided into three main categories, as follows:

- Prevention surveys
- Certification surveys
- Investigation surveys

It is important to note that the three categories of surveys can overlap to some degree, and a survey can contain insurance aspects even if it is not primarily

Prevention surveys include pre-shipment, towage, voyage, and lay-up approvals, loading/discharging, lashing and securing, superintendence, and fitness for a certain purpose. The surveyor performs the survey independently and impartially, based on their technical knowledge and experience in their primary discipline, without establishing liabilities of parties involved.

Certification surveys include on/off hire, pre-purchase or pre-entry condition, compliance with construction standards, and confirmation of quality, quantity, and packing standards. These surveys are conducted to provide an independent assessment of compliance with various standards, regulations, and conditions, and are typically requested by stakeholders to protect their interests.

Investigation surveys are conducted after an event has occurred, such as loss or damage, equipment failures, liabilities, or insurance claims. The purpose of the investigation survey is to assess the nature, extent, and cause of the loss or damage. Such surveys are typically required for insurance purposes or to support a claim under a contract of carriage.

There are several types of marine surveys that are included under these three categories

Pre-purchase survey, Condition survey, Damage survey, Flag state survey, Classification survey, Port state control survey, Valuation Survey, Hull and Machinery Survey, Ultrasonic Thickness Measurement Survey,

Cargo Survey, Port State Control Inspection, On/Off Hire Survey, Class Survey, Initial Survey, Periodic Survey, Annual Survey, Intermediate Survey, Renewal Survey, Special Survey, Safety Management System (SMS) Survey, etc.



There is a wide range of surveys that marine surveyors may conduct, and the categories for maritime surveys are not limited to the examples mentioned above.

The types of surveys that may be required depend on the specific needs of the client and the nature of the maritime activity or operation involved. These surveys can encompass various technical, operational, and legal aspects related to ships, cargoes, and other maritime assets. The expertise and experience of the marine surveyor are critical in ensuring that the surveys are conducted with accuracy, impartiality, and professionalism.

What is the difference between the marine surveyor and marine consultant?

While a marine surveyor provides an independent assessment of the real condition of a ship, equipment, cargo, etc., and reports based on the instructions received from his client, and a marine consultant offers advice and expertise to assist clients in making informed decisions in various areas of the maritime industry.

Unlike a marine surveyor, a marine consultant may not necessarily physically inspect or examine the subject matter in question, but rather offer opinions or recommendations based on their knowledge and experience. The responsibility of a marine consultant is also different from that of a marine surveyor, as they may be responsible for advising clients on a range of matters, including business strategy, legal compliance, and risk management.

> Vessel owners and operators should work with a qualified marine surveyor to ensure the safety and reliability of their vessel.

As many peoples are confused, it is essential to establish the boundaries between the marine surveyor and marine consultant. Briefly a marine surveyor is NOT a consultant. It is important to distinguish between the roles of marine surveyor and marine consultant to ensure that clients receive the appropriate services for their needs.



Captain Md Towhidul Islam

I am Capt. Md Towhidul Islam. As a seasoned sailor and former Master of tanker vessels, I navigated the seas for several shipping companies, honing my expertise in the maritime industry. However, my journey took a new course when I transitioned to a shore-based role as a Marine surveyor. Working closely with the renowned survey legend, Captain Zillur Rahman Bhuiyan Sir, I plunged into the depths of maritime knowledge and gained invaluable experience that lay hidden beneath the surface of this industry. Currently, as a Terminal Superintendent at an LNG terminal, my survey background serves as a primary driving force, empowering me to excel in this role.

Inspection of Reefer Container and Cargo Damage

Captain Mohammad Ershadul Alam

Reefer containers are like mobile refrigerators that are used to transport perishable cargo such as fruits, vegetables, meat, fish, seafood, and medicines in a controlled atmosphere and temperature to prevent deterioration of the contents therein.

Before stuffing cargo into the 40' or 20' reefer containers, a pre-trip inspection is carried out. It is a thorough inspection conducted on an empty reefer container before releasing it to the customer and ensuring that the functioning of the cooling unit, temperature control, and recording devices are in order. PTI (Pre-Trip Inspection) also includes checking the container for structural damages, working of the reefer unit as well as the generator set according to the specifications of the manufactures. All of the detected damages and malfunctions identified during PTI are taken care of and also ensured that the container is internally clean and dry. The shipper recommended temperature, ventilation, and humidity are set and confirmed that the unit is ready in all respect to receiving the cargo.

Ventilation has a vital role to prevent damage to cargo caused due to accumulated gases emitted by perspiration of the cargo such as fruits and vegetables. Ventilation is replacing the air inside the container by the supply of air from outside the container to remove gases. For the exchange of vent air, the cargo should not be stuffed above the load line limit and beyond the T-floor. The reefer units are maintained at the required set temperature for the duration of the sea transit. The machinery has a facility to record the data of set, supply, and return temperature, alarms throughout the entire transit period provided the unit remains plugged into the power supply.

Cargo damage is one such great loss that may sour the relationships between a customer and their exporter if resulted due to mishandling and incorrect stowage of cargo at the loading port. It generally occurs when inexperienced staff handles the load out of the cargo and stuffing. Some reasons for damages are as follows:

1. Improper packaging of the cargo.
2. Incorrect setting of the temperature in a reefer container. (Set point temperature)
3. Not pre-cooling cargo before stuffing within the reefer unit at load port.
4. Overloading of the cargo or improper stowage with the reefer, restricting cold airflow.
5. Machinery breakdown or malfunction and power supply failure.

In most of the cases, we have noticed that the question about the quality of cargo (age of fruits and vegetables) is a major point of contention. The pre-shipment condition of the cargo also may adversely affect the cargo condition out-turned at the destination.

I, as independent ship & marine surveyor, often get nominations from our various overseas & local clients to carry out a joint survey of affected cargo shipped in reefer container in order to investigate the nature, cause, and extent of loss/damage suffered by the shipment. The constellation team of surveyors is well equipped and experienced in dealing with such issues and situations as well as to mitigate the loss.

Source
Internet /Self Study and Ref. from Overseas Survey company.



Captain Mohammad Ershadul Alam AFNI, UK
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Matarbari Deep Sea Port Project: Future Regional Transshipment Hub and Gateway to the Country's Trade

Captain Ataul H. Siddique



Background

Bangladesh has achieved steady economic growth of approx. 6% per annum in recent years and the population has also expanded at a rate of 1.2% over the past 10 years. Accordingly, the volume of export and import has increased by an average of more than 10% per year in the past 5 years. Considering this strong growth of trade activities recorded in Bangladesh in the recent past, one of the main hindrances to its further economic growth is identified as the lack of a sufficient and reliable gateway port. So, the

establishment of a deep-sea port has become strategically very critical for Bangladesh considering its potential impact on development and economic growth.

In recent years, about 92% of the total cargo handling volume in Bangladesh was handled at Chittagong Port. However, Chittagong Port, a river port along the Karnaphuli River, is not capable of accommodating more than 2,400TEU-sized container vessels due to its limited water depth and is expected soon to reach its capacity due to its limited land area. As a result, the ships entering Chittagong Port are currently forced to wait for berthing for 2 to 4 days due to the chronic berth congestion. This fact makes a negative impact on the shipping lines' mainline deployment and affects the competitiveness of exporters and importers. Therefore, the development of a deep-sea port is considered to be one of the urgent necessities in Bangladesh. Considering this strong demand for trade activities, the idea of the deep-sea port in Matarbari was conceived after the government started a coal-based power plant project in the area, as a wider navigation channel and few jetties would be required to bring the coal & equipment for the plant.

Project Prospect

Matarbari Deep Sea Port Project (MPDP) is an important Fast Track Project of the Government of Bangladesh. This project is an outcome of the concept of "BIG - B" (The Bay of Bengal Industrial Growth Belt) jointly announced by the premiers of Bangladesh and Japan in September 2014. The objective of the project is to develop a reliable and low-cost logistic network for seaborne cargo, freight handling, and transporting facilities to maintain the competitiveness of Bangladeshi products in the global market and to make the port a regional transshipment hub.



To achieve these objectives, a new commercial port and a port connecting road with the national highway (N1) at Matarbari, Moheshkhali, and Chakoria area in Chittagong Division will be constructed, thereby contributing to creating facilities with neighboring countries. On March 10 in 2020, the Executive Committee of the National Economic Council (ECNEC) approved the "Matarbari Port Development Project" with Tk17,777.16 crore in a bid to enhance the cargo handling capacity of the country. Of the total project cost of Tk17,777.16 crore for the Matarbari project, Tk2,671.15 crore will come from the government of Bangladesh, Tk2,213.24 crore from the Chittagong Port Authority (CPA) while the rest Tk12,892.76 crore from Japan International Cooperation Agency (JICA).

Matarbari Port at a Glance

Port Location and Contact	
Country	Bangladesh
Province or District	Maheshkhali Upazila, Cox's Bazar
Project Complete Name	Matarbari Port Development Project
Latitude	21.6914°N
Longitude	91.8590°E
Implementing Agency or Port Authori	Chattogram Port Authority
To be opened	2027
Type of harbor	Deep sea port
Length of Nav channel	14.3-kilometer
wide of Nav channel	350 meters
Depth	16.0 meters CDL

Cargo Demand Forecast of Bangladesh

The growth rate of cargo is connected with the economic growth of a country. In Bangladesh, there are 3 seaports, namely, Chittagong Port, Mongla Port, and Payra Port. In addition, Matarbari Port will be constructed under the Chittagong Port and is expected to enter into operation in 2027. Cargo throughput and demand forecast of Chittagong Port, Mongla Port, and Payra Port are shown in the Table below where Chittagong Port handles 89% of the total cargo throughput of these 3 ports (107 million tons in 2020) and 98% of the total container throughput of these 3 ports (2.6 million TEU in 2020).

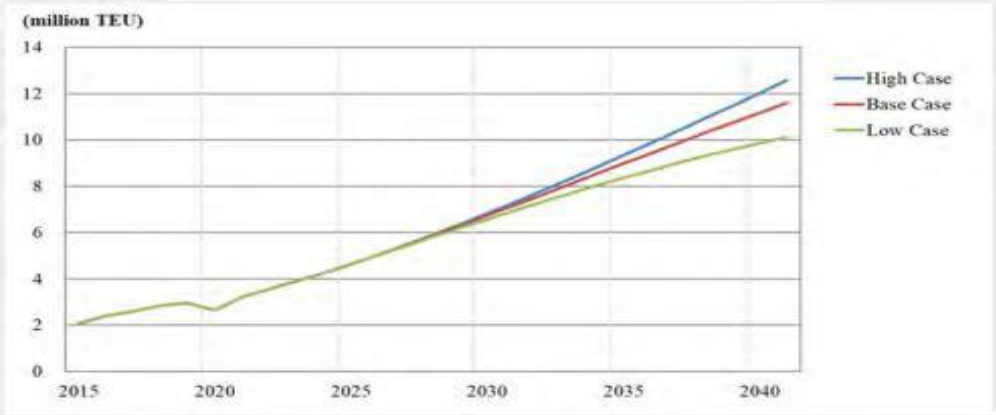
Container Cargo

1. Container Cargo Throughput & forecast

Chittagong Port handles 98% of the country's container cargo while Mongla Port handles the remaining 2%. Since the year 2012, annual container throughput at Mongla Port has remained unchanged at 43,000 TEUs, while container throughput at Chittagong Port has increased steadily by 12.3% in 2014, 16.9% in 2015, and 16.0% in 2016; total container throughput in 2021 was recorded at about 3.2 million TEUs.

The container throughput of Bangladesh is 2.9 million TEUs in 2019 and is forecast as follows:

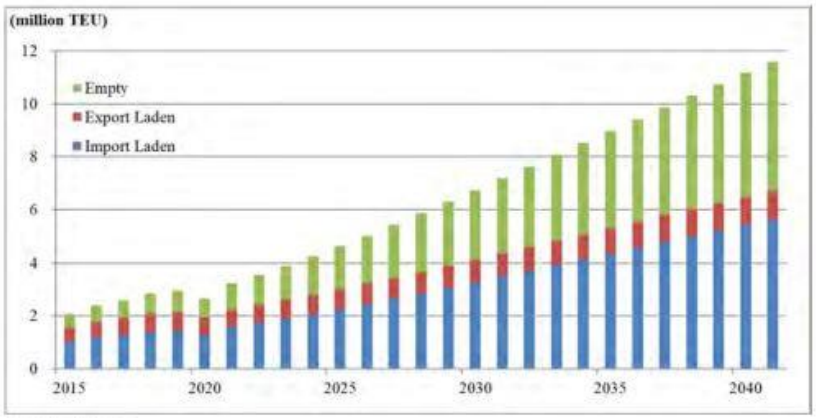
- High case: 7.3 million TEUs in 2031, 12.6 million TEUs in 2041
- Base case: 7.2 million TEUs in 2031, 11.6 million TEUs in 2041
- Low case: 7.0 million TEUs in 2031, 10.1 million TEUs in 2041



Source: MPCT

Figure: Demand Forecast of Containers in Bangladesh

The container cargo throughput of Bangladesh is forecasted to substantially increase from 10.3 to 12.6 million TEUs in 2041. The simulation model estimates shares between the ports of Chittagong, Matarbari, and Payra based on three scenarios. In the Base Case scenario, Payra port would be developed with a channel depth of -10m, and inland waterway transportation cost from Matarbari would remain at the present level. In Consideration Payra port would have developed with a channel depth of -14m and maintenance dredging cost would be recovered through a channel entrance fee. The inland waterway cost in Bangladesh would be reduced by 40%. Also, bonded cross-border transportation would be realized between Bangladesh and Bhutan, and Northeast India.



Source: MPCT

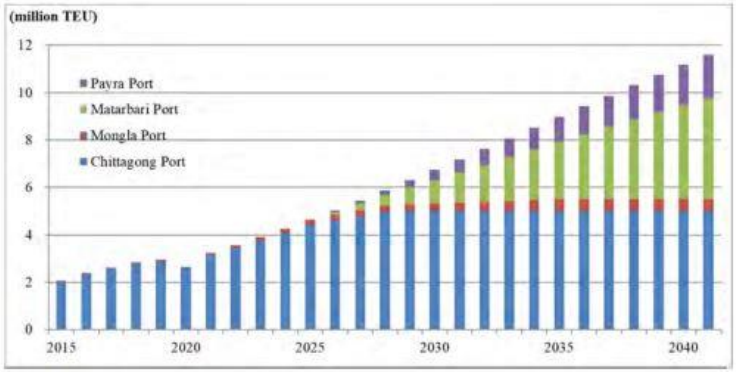
Figure: Demand Forecast of Containers in Bangladesh (Base Case, Export-Import)

2. Container Cargo Forecast of Matarbari in 2026

In the Base Case scenario (Fig 2.1-2), container cargo volumes at the three ports in 2026 are estimated as follows: 600 thousand TEUs will be handled at Matarbari Port, 3.4 million TEUs will be handled at Chittagong and 480 thousand TEUs will be handled at Pyra. Container cargo demand for Matarbari Port is estimated at 690 thousand TEUs, 1.1 million TEUs, and 630 thousand TEUs in various case scenarios respectively.

3. Container Throughput in 2041

In the year 2041, the simulation model forecasts that container cargo demand for Chittagong Port would increase to 6.9 million TEUs, while it would reach 550 thousand TEUs at Payra Port and 2.6 million TEUs at Matarbari Port. As the future capacity of Chittagong Port is assessed at about 5 million TEUs, the excess volume would be handled at Matarbari Port or Payra Port.



Source: MPCT

Figure: Demand Forecast of Container at Each Port (Base Case)

Bulk Cargo Demand Forecast

1. Coal

Coal import has reached 1.4 million tons at Chittagong Port and 110 thousand tons at Mongla Port. Import of coal is estimated to increase to supply coal-fired power plants planned in Bangladesh. Coal transshipment terminal planned at Matarbari area is expected to import 9 million tons of coal in 2026, 14 million tons in 2031, and 41 million tons in 2041.

2. LNG

As indicated in the study entitled “Power System Master Plan (PSMP) 2016”, import of LNG is estimated at 500 mmcfd (about 3.8 million tons) in 2026 and 4,200 mmcfd (about 32 million tons) except import by FSRU project.

3. Crude Oil and Oil Products

Import of crude oil will be carried out by large tankers moored at SPM, which will be developed in the outer anchorage area of Matarbari Port. Export of oil products is planned by a refinery to be established in the Matarbari area, the amount of which would be 8.9 million tons in 2026 and 27 million tons in 2041.

4. Cement Clinker

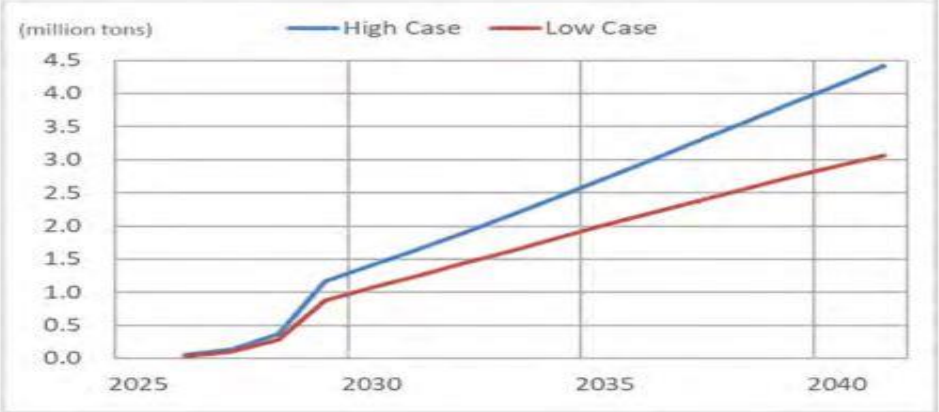
Import of cement clinker has reached 19 million tons at Chittagong Port and 1.6 million tons at Mongla Port in 2016; future volumes are forecast to increase to meet the demand for cement production. The amount of clinker imported is estimated at 65 million tons in 2041, half of which would be handled at Matarbari Port.

5. Fertilizer, Food Grain

A fertilizer of 1.6 million tons has been imported at Chittagong Port and the same amount at Mongla Port in 2016. It is estimated that the import of fertilizer would not significantly increase because agricultural land is limited. Import of wheat and sugar is estimated at 4.9 million tons and 3.4 million tons respectively in 2026, and 6.2 million tons and 5.0 million tons in 2041.

6. Steel Products and Scrap Iron, Import of Vehicles

The import of steel products and scrap iron is estimated at 9.9 million tons in 2026 and 17.8 million tons in 2041. Import of completed vehicles by RO/RO ship is estimated at 90,000 - 224,000 units in 2016 and 90,000 - 298,000 units in 2041.



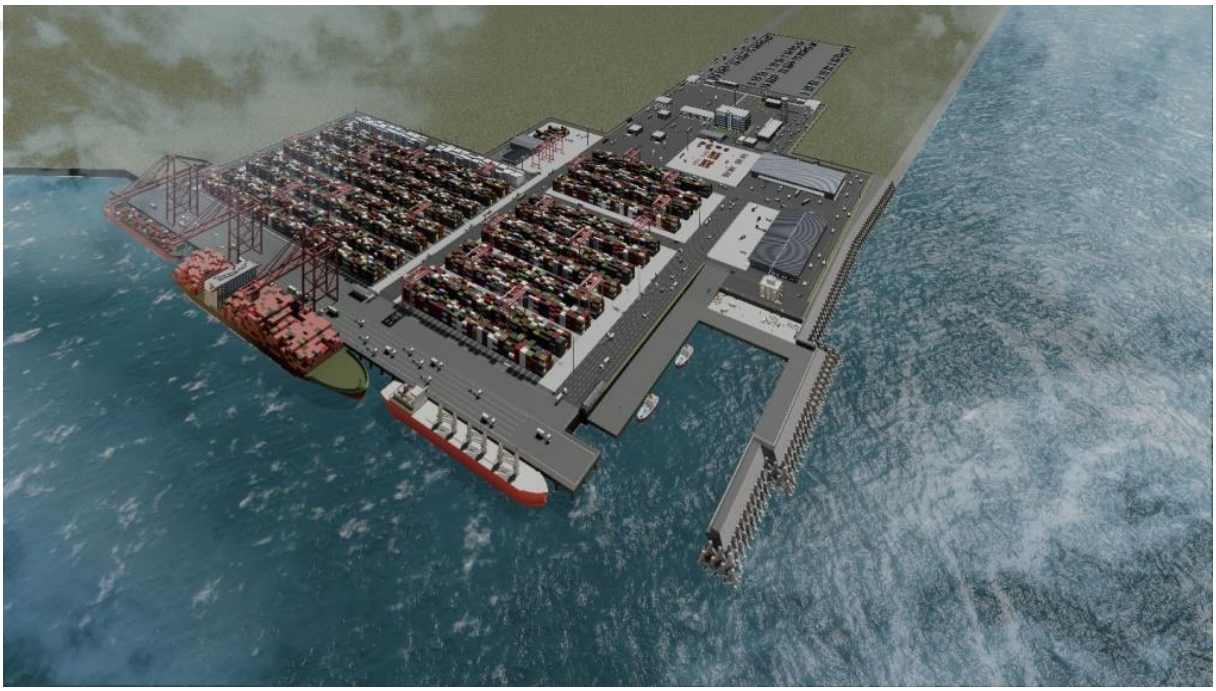
Source: MPCT

Figure: Demand Forecast of Import Steel at Matarbari Port

Seaport Development Phases

To navigate the ship into the coal-powered electricity project, the CPGCBL (Coal Power Generation Company Bangladesh Limited) financed by JICA, constructed a 14.3-kilometer navigation channel with a width of 250 meters and a depth of 16.0-meter CDL. The Matarbari port development project under Chittagong Port Authority will be developed by widening the existing channel up to 350 meters and drafting 16.0 to 16.5 meters CDL by the end of 2025 which will boost trade through the Chittagong port. Once completed, Matarbari will be the fourth seaport in Bangladesh and the future transshipment hub of the Bay of Bengal region. The port will help the country to handle rising volumes of exports and imports and ease the pressure on the Chattogram port. Matarbari Port also aims to be developed to facilitate

trade with neighboring countries and land-locked states of India, Nepal, and Bhutan including BIMSTEC (Bay of Bengal Initiative for multi-sectoral technical and economic co-operation) members.



Pic: Matarbari Port project Phase-1 of First Stage

The Port will be constructed in two stages. In phase-1 of the first stage, the port will have an annual handling capacity of 0.8 million TEUs of containers and 1.7 million tons of bulk cargo in the first 5yrs of operation and be able to accommodate 320-340M LOA and 8,000 TEU vessels. The port will be connected to the national highway which will have access to Chattogram, Cox's Bazar, and the rest of the country by sea through river ports. In the second phase of the First stage, the port will have three jetties ready for container handling and four to six jetties for multipurpose (Coal, LPG and LNG) use by 2028 to 2030. Meanwhile, its container handling capacity will grow to 2.8 million TEUs, and cargo handling capacity will reach 2.5 million tons per year.

Cargo Handling Projections

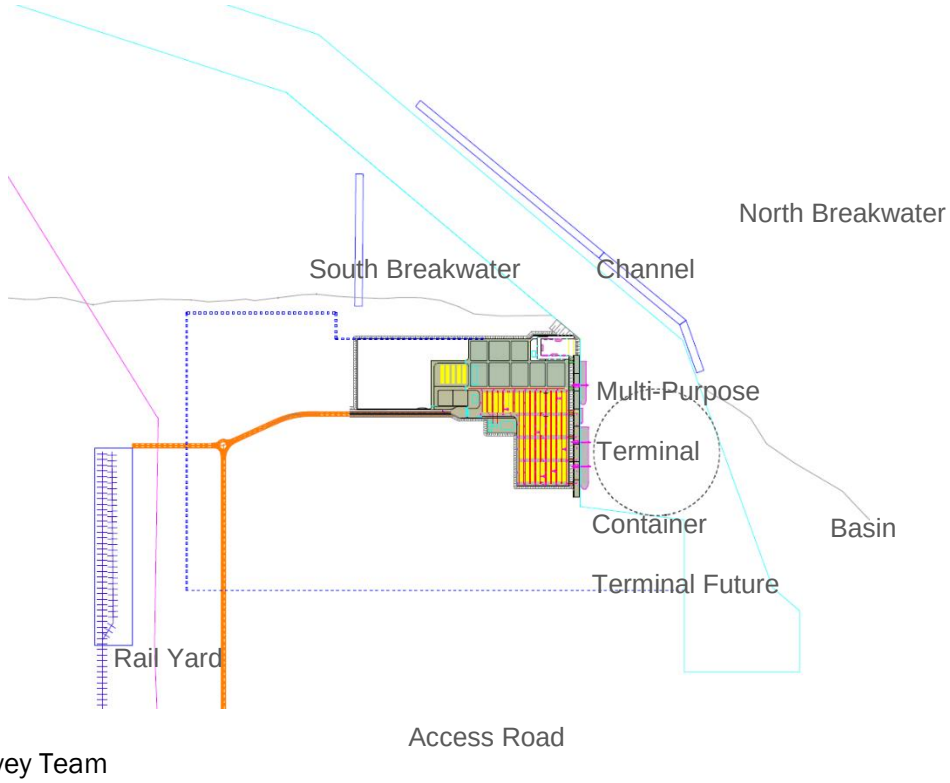
1. Phase 1 of the First Stage Development (Target Year 2026)

Phase 1 of the first stage of development consists of the development of one multi-purpose berth with a length of 300m and back area of 17ha, and one container berth with a length of 460m and back area of 20ha. The approach channel is designed to have a width of 350m and a depth of CDL-16.0m. Phase 1 is expected to be completed by the end of the year 2025. The layout plan and port facilities of phase 1 of the first stage of development are shown in the Table below:

Phase 1 of the First Stage Matarbari Port Development

Facilities	Size	Max Vessel Size	Cargo & Capacity	Remarks
Container Terminal	L=460m, D= CDL-16m Area=20ha	8,000 TEU Type 250 TEU (Feeder)	Container 700,000 TEU	Full size berth x1, Feeder berth x1
Multi-purpose Terminal	L=300m, D=CDL-16m Area 12ha	70,000 DWT	General Cargo 1.5 m.t. Bulk Cargo 0.6 m.t.	General cargo ships, Panamax bulker,
Breakwater	North L=2,150 m (Incl.397 m by CPA) South L=670 m	-	-	Phase 1
Navigation Channel Turning Basin	W=350m, L=11km Turning Basin=75ha	100,000 DWT (8,000-8,200 TEU)	-	Phase 1

Note: m.t. stands for million tons Source: Data Collection Survey on the Matarbari Port Development in the People's Republic of Bangladesh, 2017



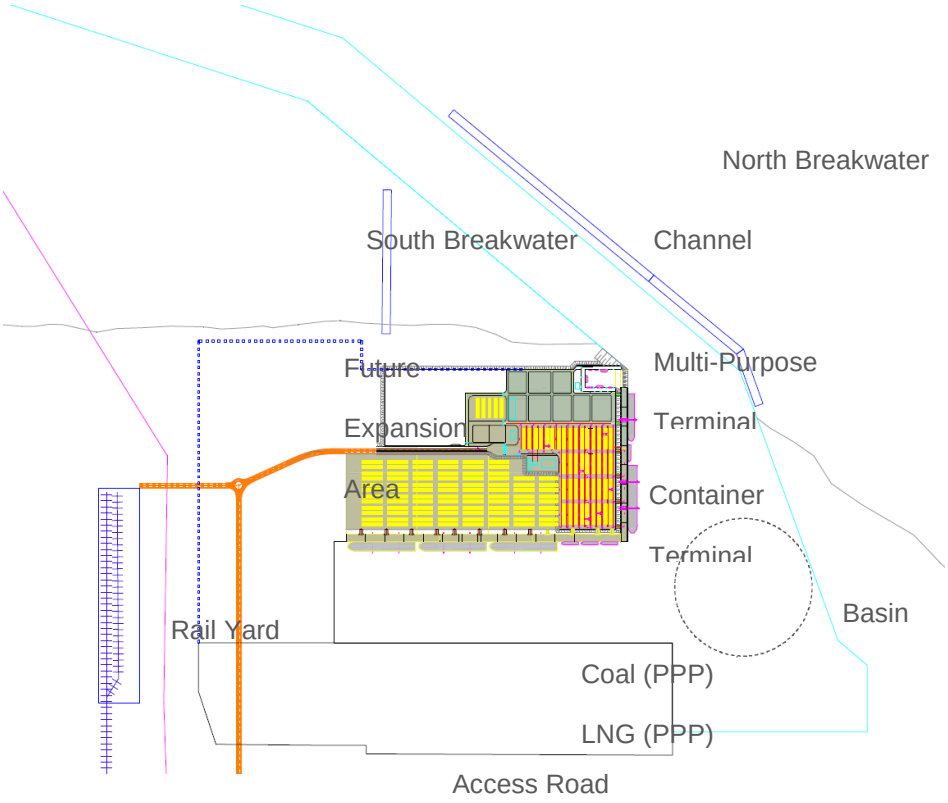
Source: JICA Survey Team

Figure: Phase 1 of the First Stage Development

2. Phase 2 of the First Stage Development (Target Year 206-2030)

Phase 2 of the first stage of development will expand the turning basin to the south and add three full-size container berths, which will have a length of 1,050m and a back area of 50ha. Future expansion areas will be used for truck parking, warehouses, logistic park, ancillary services, and further expansion of container berths if necessary.

The expansion of the turning basin to the south enables the development of CTT terminal, LPG & LNG terminal, which will accommodate 80,000 DWT coal bulkers, LPG VLGC, and 145,000 to 260,000 m3 type LNG carriers. The layout plan and port facilities of the phase 2 of the first stage of development are shown in the figure below:

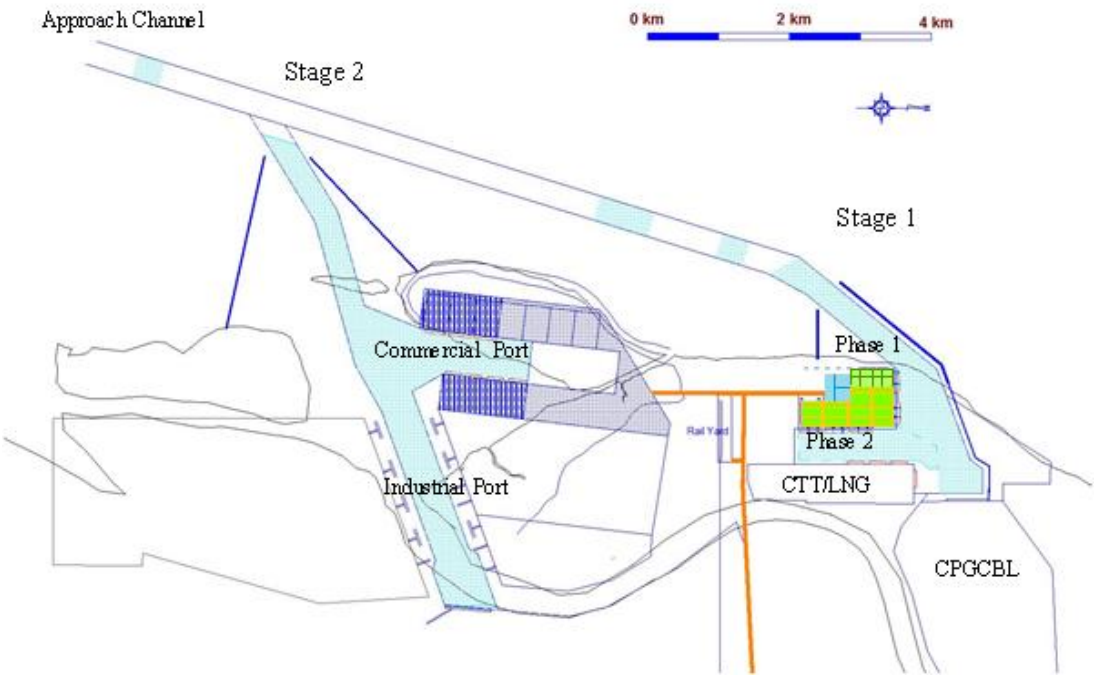


Source:JICA Survey Team

Phase 2 of the First Stage Development

3. Second Stage and Industrial Port Development (2030 to 2041)

The second stage of port development is recommended at the mouth of the Kohelia River as shown in the figure below. In addition to phases 1 and 2 of the first stage, three full-size container berths are proposed on the west side of the commercial port with a length of 1,050m . On the east side of the commercial port, multi-purpose berths and bulk berths are proposed with a length of 1,200m. The depth of the entrance channel and basin is -16m, which is the same as the first stage. The commercial port area has more space for future expansion so that four additional full-size container berths and four multi-purpose/bulk berths can be developed next to the proposed development. Stage-2 is tentative and will require further study from viewpoints of commodities and volume of maritime cargo, vessel type and size of call, cost allocation between the industrial port and commercial port, and so forth.



Second Stage and Industrial Port Development

Matarbari Harbour and Operation



Bangladesh's first-ever deep seaport in Cox's Bazar's Matarbari welcomed the very first ship to its harbor on Tuesday 29th Dec 2020 morning. It's a historic moment for Chattogram Port Authority and CPGCBL. Loaded with steam generator parts, the Panama flag carrier "Venus Triumph" docked around 10:20 am on 29th Dec. These types of equipment will be used for the coal-based power plant in that area. The vessel

was brought to the 'oil and heavy equipment jetty' of the power plant Project under operational supervision, guidance, and logistics of Chittagong port.

December 29, 2021, the Matarbari Channel marked the 01 (one) year of ship handling activities, which seems to be one of the achievements of "Mujib Shotobarsha" by CPA and a successful milestone in the national economy. With the sincere efforts of Chittagong Port Authority and Coal Power Generation Company Bangladesh Ltd. (CPGCBL) Total of 113 nos. of seagoing Merchant ships and 2.1 Lac Tons of cargoes have been handled in Matarbari CPGCBL jetties to date (Apr'2023) with steady increasing revenue growth.



On 25th April 2023 history was created for CPA and the country when the first ever 80k DWT Panamax size ship named OWUSU MARU (LOA-230mtr & Draft-12.5) took berth at Matarbari Coal jetty.

Conclusion

The maritime trade of Bangladesh is growing at a high pace. The ship sizes are increasing day by day in the ocean and our existing ports can't capable to handle the large ships. So the development of a deep seaport is very crucial. Moreover, considering the strategic location, Bangladesh has been dreaming of a hub port of the SE Asia region having deep draft berths in a suitable location.

In recent years Bangladesh has become a role model of development for different countries. To maintain the continuity of development, various priority-based projects have been undertaken by the government including Matarbari Coal Power Project and Matarbari Deep Sea Port Construction Project. Once the Matarbari Port comes into full operation, it is expected that the country's first deep sea port would

contribute 2-3% to the growth of the national economy. The government expects investment worth more than $10 billion in Matarbari which will provide employment opportunities and push up the GDP growth with increased productivity in the industrial sector.

Source

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Good Governance and Development, Challenges in the Inland Maritime Transportation of Bangladesh

Mar. Engr. Monzur Ahmed



In Bangladesh, all the inward and outer entertainers of legislative issues, organization, and improvement are accentuating the requirement for good governance of Bangladesh. Bangladesh inland water transport authority (BIWTA) and the Department of shipping as well Mercantile marine office under the ministry of shipping are the governing authority that implements the shipping act, rules, and Regulations for safer navigation of inland, coastal, and foreign going vessel. Thus this is an important government entity not only for the financial development of the nation but also for the easier, faster, transparent requirement of the nation's waterways and security. This is important to undertake this study to know the dynamics of this important government Department.

1.1 Good Governance and the Inland Water Transport System

The United Nations has stated 8 criteria for achieving good governance, participation of all peoples, and rule of law need to maintain, Transparency has to maintain in any program or activity. Accountability

should conform to authority and government, Efficiency and effectiveness have to exist to expedite the policy, act, and rules. Equality and inclusiveness with responsiveness have to maintain with care and consensus-oriented also a major factor to satisfy stakeholders, passengers, consumers, and marine experts. We will see how the BIWTA maintains these criteria, Or how much inclined from the criteria. The International Development Association (IDA) helps assemble the frameworks that make help more viable by fortifying foundations and further developing administration. IDA works with services, organizations, and divisions on overseeing public establishments and funds.

BIWTC maintains a service inland waterway by carrying a passenger through its ship and carrying the vehicle through its 35 ferries in a different route. Regarding the launch jetty -In 1969 there were only 50 launch jetties around the river ports were built. After the liberation war consecutively 1975,1980 and 1986 various schemes were launched for building jetties with pontoons, and the number increased to 292. (Revival of Inland Water Transport: Options and Strategies, November 2007). Bangladesh has around 24,000 km. of waterways, streams, and canals that together cover around 7% of the nation's surface. Most area of the country is connected by an intricate organization of streams which comes to its broad size in the storm time frame. Out of 24,000 km. of waterways, streams, and trenches just about 5,968 km. is safe by automated vessels during rainstorm periods which therapists to around 3,865km. During the dry period. The IWT area extends half of all blood vessel cargo traffic and one-fourth of all traveler traffic. By establishing good governance, this area can be developed to maintain a safer transport system.

1.2 Development of the Inland Water Transportation

According to Section 15 of the Ordinance E. P. Law No. LXXV of 1958; correction Ordinance No. LV of 1977, the Authority fills legal roles of advancement, upkeep, and administrative nature. The Functions in short:

a. Complete stream conservancy works including waterway preparing works for navigational purposes and arrangement of help to route including marks, floats, lights, and semaphore signals.
b. Scatter navigational and meteorological data including distribution of waterway outlines,
c. Given pilotage and hydrographic study administrations;
d. Draw up software engineers of digging necessities and needs for proficient upkeep of existing traversable streams and for the revival of dead or passing on waterways, channels, or trenches, including.
e. Advancement of new channels and waterways for the route.
f. Create, keep up with, and work inland stream ports, landing/ship jetties, and terminal offices in such ports or jetties.
g. Complete expulsion of wrecks and impediments in inland traversable streams;

h. Lead traffic overviews to set up traveler and freight necessities on the primary streams, feeders also brook courses.
i. Foster rustic water transport by advancing plans for modernizing and automating country Make.
j. Ensure co-arrangement of Inland Water Transport with various sorts of transport, with critical sea ports, moreover with trade and farming interests for the ideal utilization of the available vehicle limit.
k. Lead research in issues identifying with Inland Water Transport including improvement of Create a plan, Method of fee, Landing and terminal offices, and Port establishments
l. Orchestrate projects of specialized preparation for Inland Water Transport staff.
m. Keep up with contact with the shipyard and boat fix industry to meet the necessities of the Inland.
n. Water Transport armada fixes and new developments.
o. Keep up in contact with the Government and work with the import of fixed materials for the Inland Water Transport Industry.
p. Get ready plans or plans for doing any of the previously mentioned capacities.

1.3 Regulatory Activities

After the independence, BIWTA has taken initiative to make some rules for mass people for the betterment of transportation, Some of them are described below-

Fixation of most extreme and least admissions and cargo rates for Inland Water Transport for benefit of the Government;

Liaise with government-owned ship owners and private ship owners BIWTA Endorse timetables for traveler dispatch administrations.

Assessment shies, freight, and inland vessel to guarantee consistency with the arrangement of ISO – 1976, Go about as the Competent Authority of Bangladesh for the convention on Inland Water Transit and Exchange, taking care of the utilization of streams of Bangladesh for the Govt. of Bangladesh for the motivation behind exchange and travel among Bangladesh and India as given in the Protocol.

1.4 The Issues in India Bangladesh inland waterway transit

Bangladesh -India had a bilateral ship transit agreement since 1980 October. With a subsequent protocol. This is been updated regularly and was latest signed on 2015 June whether two countries agree to make a mutually beneficial agreement to use their river & stream as well as allow commodities between two countries, between one state to the third state. (Protocol on inland water transit and trade,1980) The only obstacle is renewed every month, so one month is not enough for the transporter to book the cargo, and the vessel as well organizes a schedule to carry on the business. So particular some vessels can trade between Bangladesh and India.

1.5 Responsibility of the Department of shipping

The director of shipping is responsible for governing the Ocean going vessel, inland conducting the inland vessel master, engineer, and ship personnel exam and certification. Monitoring the training in various private, government maritime training institutes like Bangladesh Marine Academy, Marine fisheries academy, Bangladesh Maritime Institute of Technology, DEPTC(Deck Engine Personnel Training Centre)

Vision

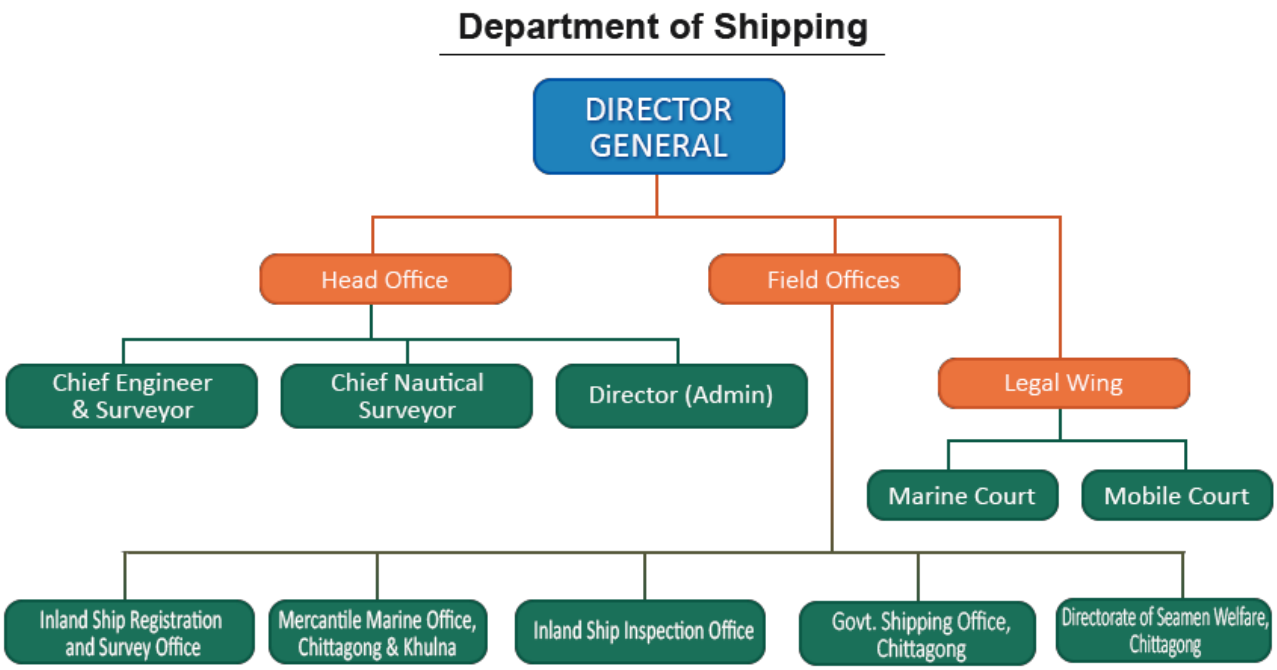
To be an effective and efficient maritime administration transforming Bangladesh into a globally competitive maritime nation. (DOS)

Mission

To achieve sustainable, safe, and secure shipping, cleaner oceans, and enhanced maritime capability through effective regulation, coordination, and oversight of maritime affairs. (DOS)

Doing a survey of the inland vessel as well yearly fitness certificates, Registration of vessel, and Approval of new vessel design as per inland shipping ordinance 1976.

Throughout the year they are monitoring the all-inland register vessel fitness, safeties, structural certification, and overall fitness to sail on the river.



To strictly maintain the Inland Shipping Ordinance 1976, there are 04 Registration & Survey Offices and 06 Inspectorate of Inland Ships offices in the country. The registration of newly built vessels and their annual survey are monitored and certificates are issued by the Registrar and Surveyor of Registration &

Survey Offices. On the other hand, compliance with Inland Shipping Ordinance 1976 in inland vessels is regularly inspected by the Inspectors of the Inspectorate offices who are also empowered to take legal actions against the violators. The offices are as under:

1. Registrar and Surveyor of Inland Ship, Dhaka. Narayanganj ,Khulna,Barisal
2. Inspectorate of Inland Ships, Dhaka. Narayanganj. Khulna. Barisal. Chandpur. , Patuakhali.

1.6 Challenges for the Survey, Certification, and Design of the Vessel

For the survey, approval design inland vessel /ship, yearly fitness is issued by the Ship surveyor and examiner. They are monitoring the registered inland vessel's safe manning, competency of the master, engine driver, Vessel structural safeties, and navigational safeties in 52 points by the registrar and surveyor of the inland ship office.

About 23, 000 vessels and other categories of ships (passenger, tanker, dredger Vessel) registered under the Inland Shipping Ordinance of 1976. But shipping experts(government officers) Find that 50% of the ship are non-registered. and some owners do the registration for only one vessel and that Xerox copy is kept for showing to the inspector as a registered vessel. Rule of law is completely absent. (Web-Bangladesh Inland Transport Authority). So here is the absence of rule of law as well effectiveness and efficiency of the organization.

1.7 Safety and Security of a Passenger's Vessel

In practice, it has been found in several vessel investigation reports that small passenger vessel compromises on safety and security of passenger. In the case of passenger launch accidents, on many occasions, the vessels were found plying without valid fitness survey certificates or necessary safety gear, including lifebuoys, impaired lifebuoys, shortage of life jackets, or not sufficient as per designed quantity, missing fire extinguishers, expired fire extinguisher. Even, in some cases, it was found that the vessel was operated by unskilled personnel, sometimes ships personnel does not have formal training too. (The Financial Express, 2017)

The owner of the launch also took extra passengers beyond their limit. Sometimes especially during the festival time passengers also embark on the vessel as extra passengers which overloads the vessel too.

1.8 The Obstacle in a Survey

The constitution of Bangladesh inland shipping ordinance 1976-chapter (II) registration and survey where stated that the surveyor or the registrar shall not hinder the loading or unloading of the ship, or detain or delay her from proceeding on any voyage, except to the extent necessary for survey or inspection. So, if such rules are written in the shipping ordinance, then how is the detention /arrest/fine to be conducted on the vessel? if the ship is not having safety the surveyor should have the right to fine or arrest otherwise shipping causality will remain the same. In the same article power of surveyor and registrar stated their power-

5. (1) For the survey or registry of an inland ship, the surveyor or the registrar, as the case may be, at any reasonable time, inspect the ship's every part thereof including the hull, boilers, engines, and other machinery and all equipment and articles on board.

And yet nothing to do by the assessor since, in such a case that an assessor observed any issue, the ship ought to confine or rebuff or sail after satisfying the surveyor's suggestion. However, in the statute law, this has been thwarted to keep or rebuff the vessel.

DG shipping has only had 3 engine surveyors and examiners,3 nautical surveyors, and an examiner where they are having an additional job for various inland, ocean-going vessel officers and rating certification. At the same time, these surveyors monitor the survey, fitness, and safety of 12959 inland vessels. If 6 surveyors do 5 days of the survey in a week, they can do only 30 ships in a week from 4 stations, and all over the year, 1560 vessels can complete the survey. So, the rest of the more than 11000 vessel surveys remain pending. OR somehow completing with an unknown mystery.

1.9 The Limitation to Navigability in the River

Navigability of the river channel is maintained by the hydrography and engineering department of BIWTA, and provision of aids to navigation including marks, buoys, lights, and semaphore signals maintained by this department,

To maintain navigability throughout the channel BIWTA along with its private sector plays an important role. Due to the geological position and topological condition of the river, we have to use a dredger to maintain its sufficient depth for the safe navigation of all vessels. Right now, we have 256 dredgers owned by Government and the private sector in different channels.

Lori Walsh Imdad (Expert on the sector) stated that to take challenges of delta plan 2100 we need more dredgers to fulfill the river dredging. Bangladesh private contractors stop importing dredgers due to high government taxes. (Dhaka Tribune. 22nd June 2020).

But the channel becomes narrowed by many cases, Occupying the river bank by Corrupting mass people or industrialists is one of them. That's why district administrations have demarcated those excluding the foreshores, in deviation from a High Court judgment. High Court (HC) in June 2009 came up with a judgment and directions including the demarcation of the rivers with pillars. (The daily star,12 April 2011). one of the criteria rules of law is absent here, Ultimately navigation of the water transport system is impeded.

The district administration is responsible for the conservancy of the river area, otherwise if the bank is occupied by masses of people and filled with sand or soil. The depth of navigability reduces its danger level as well as inland transportation collapse.

Recommendations

Foot dragging and graft money in the section official are the main cause of poor performance to check vessel safety and passenger security by the Inspectorate of Inland Ships. With expanded delicacy, the outrageous strain on assets, and quickly developing large-scale administration conveyance needs, the capacity of states to react to administration challenges, particularly following the COVID-19 pandemic, is extended in extraordinary ways. Public Sector Governance and anti-corruption consistently keep on positioning high among the main advancement needs. As the emergency time frame settles, state-run administrations will zero in on the recuperation stage and will at the appropriate time be thinking about changes to make their reaction and administration conveyance stronger. (World Bank 2020)

In our shipping policy, 3.4.1-decontrolling and liberalization started to change the rules and regulations to develop the industry. article 3.4.5 legal structure also shows the same to be updated as per international organization rules, conventions, and protocols.

All district administrations have to take initiative for the conservancy of river areas to maintain the wider channel.

Navigability of the channel is not only maintaining sufficient depth but also navigation signal light. beacon buoy where the signal shows the channel depth, Beacon buoy has to maintain or installed with a strong point so that it will not replace, need to increase the signal and more dredger to be assigned for navigability. And all responsibility goes to BIWTA and DG shipping. Coastal vessel bay crossing permission has to review by an inspector from MMO (Mercantile Marine office).

Marine police /inspectors have to use a voice recorder during the inspection so that grafting money-related corruption can be avoided. More marine experts (surveyors) are to be recruited to monitor the vessel's fitness and safety frequently as well as transparency which will ensure the practice of rule of law in the inland water transport system for achieving good governance.

A German scientist Max Weber stated bureaucracy is a highly structured, formalized, and also impersonal organization. He also constructed the belief that an organization must have a defined hierarchical structure and clear rules, regulations, and lines of authority that govern it. The capacity of states to successfully give public products, to help an environment that can create occupations and development, to address market disappointments, and to draw in residents in the process is a higher priority than at any other time. Nations with solid foundations are stronger and are better ready to work with private area development, diminish destitution, convey important administrations, and procure the certainty of residents.

In this present society, 5.0 all system is going through a transformation. New challenges are created, but new methods will bring to light to take the challenges. So world bank's method for good governance is

the way to continuous and faster development. In this research, I want to find out the lacking where the development happened and what is yet to need to overcome the obstacle.

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P&I Claims Handling in Bangladesh: An Overview

Engr. Tanjil Ahmed Ruhullah

Introduction

Ships and shipping present significant safety, technical, and operational challenges, and despite best efforts, accidents can occur. P&I insurance is a special form of Marine Insurance specifically designed to address the unique needs of the marine industry, covering virtually all maritime liability risks. A P&I Club, also known as "Protection and Indemnity Club," is a non-governmental, non-profit mutual insurance association that provides marine insurance to its members. These members include shipowners, operators, charterers, and seafarers employed by the member companies. Protection ensures the safety of seafarers, while indemnity covers any loss compensation. Under these clubs, like-minded shipowners pool their resources to insure their third-party risks. While traditional marine insurance companies provide "Hull and Machinery" (H&M) coverage for shipowners and cargo coverage for cargo owners, a P&I club offers coverage for open-ended risks that traditional insurers are hesitant to insure. Additionally, unlike a marine insurance company that reports to its shareholders, a P&I club reports solely to its members.

The club becomes involved in cases of accidents that occur on board, whether underway at sea or while in port. These accidents may include collisions, groundings, property damage, pollution, environmental damage, and wreck removal. An essential aspect of P&I coverage is the protection of human life, so compensation is provided in the event of accidents leading to injury, death, or illness on board. More specifically, P&I insurance may cover:

- Illness, injury, and death of crew, passengers, and other third parties onboard
- Stowaways, deserters and refugees
- Damage to property (FFO)
- Wreck removal
- Collisions
- Pollution
- Cargo loss and damage

- Fines
- Sue and labour expenses
- Salvage
- Costs incurred in criminal proceedings
- General Average

With an observer status at the IMO, the International Group of P&I Clubs, based in London, comprises 12 global P&I Clubs that offer marine liability coverage for approximately 90% of the world's ocean-going tonnage. The 12 member clubs are as follows:

- The Swedish Club
- GARD
- The American Club
- Steamship Mutual
- UK P&I Club
- Britannia P&I Club
- Ship owners Club
- SKULD
- Japan P&I Club
- The London P&I Club
- North Standard
- West of England

P&I clubs respond by providing shipowners, operators, managers, masters, and their crews with a 24/7 support network of club branches and correspondents that are available to them at any time, day or night, especially when their ships are navigating through turbulent storms. Although P&I clubs now have multiple branch offices, which was not always the case, it is impractical to have an office in every port worldwide. Therefore, each club maintains its own global network of correspondents, covering every port across the globe. These correspondents can be contacted by the club and vessel masters to offer local advice and knowledge when ships encounter difficulties within their jurisdiction. Interport Maritime Ltd (IML) is one of the leading P&I correspondents in Bangladesh and is listed by 10 out of the 12 P&I clubs of the International Group.

While correspondents do not act as agents, they are expected to represent the P&I club in matters concerning the ship's master and the P&I club member. Correspondents handle claims and resolve problems, whether or not they give rise to a claim covered under the P&I club rules. They may need to engage the assistance of local experts, such as surveyors, lawyers, and other professionals, to handle such matters effectively. It is crucial for correspondents to be familiar with the expertise available in their area and provide proper instructions to maintain control over the handling of the matter. Many issues involve local authorities like the harbor master, customs, mercantile marine department and immigration officers, with whom the correspondent should have a good working relationship. Additionally, the P&I club expects the correspondent to act as the "eyes and ears" of the club, providing relevant information regarding any changes in local laws or statutory requirements, as well as advising on any claims trends they become aware of.

Correspondents are responsible for handling claims efficiently and effectively. This includes promptly appointing suitably qualified marine experts (such as marine surveyors, engineers, chemists, etc.) whenever there is a claim incident. The purpose is to gather facts and retain contemporaneous evidence related to the incident, which can be used to defend and negotiate any inflated or unreasonable claims by claimants, often in order to protect the interests of the members (shipowners, ship management companies, charterers). It is considered best practice for both shipowners (P&I clubs, P&I, and H&M underwriters) and opponents/claimants to appoint independent marine surveyors to assess the cause, nature, and extent of damages sustained in any incident. If the independent surveyors/experts agree on

the facts and amount of the claim, it is amicably settled, subject to approval by the club and the members. However, claims that cannot be settled amicably go to court and generally face delays and lengthy resolution times due to the protracted nature of litigation in Bangladesh.

Claims handling for each incident are unique and may involve different circumstances, such as those that take a long time to resolve or those that need to be resolved within a short period. Accidents can occur unexpectedly, and dealing with them may be necessary even during holidays and at night. However, working to protect the interests of the members is always worthwhile. When responding to members' inquiries, correspondents must provide answers based solely on facts and avoid speculative comments. Communicating with facts ensures accuracy as a prudent adviser and prevents giving members unjustified expectations about a case. The primary focus in claims handling is to protect the member's interests. When the liabilities of the parties involved are unclear, correspondents make every effort to gather as much information as possible to answer the member's questions. When it becomes evident that the member has liability, correspondents strive to minimize the loss amount the member has to bear.

From 2001 to date, as correspondents, we at IML have handled around 5,000 claims and loss prevention matters. These range from cargo damage, shortage, and contamination claims to collision claims, contact damage during ship-to-ship (STS) operations, contact with jetty structures, berths, buoys, and liquid terminals (FFOs), crew injury and death compensation claims, demurrage and detention, ship condition surveys, ullage, draft surveys, and more. Around 90% of the claims were handled for incidents at occurring at jetties, terminals, and the Chattogram Outer Anchorage (including Charlie, Bravo, Alpha, and Kutubdia Anchorages) of Chattogram Port. The remaining 10% of claims were handled in other ports ranging from Mongla Port to Payra Port, Pangaon ICT, and Matarbari Port.

P&I Claims in Bangladesh

Outlined below are some recent cases, claims developments as well as guidelines for avoiding and mitigating claims in Bangladesh.

Collision Incident

After completing part discharge of cargo at Kutubdia anchorage, a mother vessel was being shifted to Chattogram Alpha anchorage. During the passage to anchor ground at ‘Alpha’ anchorage, reportedly the vessel’s safe passage was impeded by numerous lighter vessels, unlit small crafts, and wooden country boats. Subsequently, the vessel hit a lighter vessel which was apparently in unlit condition, not having Automatic Identification System (AIS) or any kind of navigational equipment turned on. The lighter vessel sustained extensive damages as a result of the collision. We were immediately appointed by the P&I Club of the mother vessel for appointing a suitably qualified marine surveyor for investigating the circumstance of the incident and for protecting the shipowners interests. The owners of the lighter vessel came up with a highly inflated claim of a couple of million US dollars. We started negotiations after repudiating their formal claim letter on the basis of the facts submitted by our independent marine surveyor. However the owners of lighter vessel filed an admiralty suit against the Shipowners for which

Admiralty Lawyers were appointed by the Club to defend the suit. The vessel subsequently sailed out submitting a Bank Guarantee covering the claim. While the suit was at the court, we continued our negotiations for settling the matter out of the court on the basis of the facts and evidence gathered. Eventually, their claim amount came down to a few hundred thousand dollars from millions. Finally, a Settlement Agreement was signed between the parties, claim amount was remitted to the claimant's bank account and the suit was dismissed.

Recently, there have been some positive developments in Chattogram Port with regard to Collision incidents. For improving the navigational safety at the Chattogram Port outer anchorage, the Chattogram Port Authority issued Circular No. 46/2019 on 01.10.2019 declaring permissible draft at the three anchorages Alpha, Bravo & Charlie and passed some directives regarding anchoring at the three anchorages based on the current drafts of the vessels.

Collisions at Chattogram Port mainly occur between the ships arriving from the deep-sea Kutubdia direction and anchoring at the outer anchorage to partially unload import cargo onto comparatively smaller lighter vessels with much lower drafts, before going on to enter the port jetties or inland destinations for discharging the remaining cargo alongside.

Though the ships can offload all their import cargo anchoring in the deep sea around Kutubdia, the prevailing practice is to come over to the outer anchorage near the Patenga coast to reduce logistics costs. However the difficulty arises in controlling such deep draft vessels at the comparatively shallow waters at the outer anchorage, especially when trying to go past the bow of anchored vessels at close range, leading to frequent collision incidents. Underestimating local conditions like tides, wind and currents as well as choosing improper anchoring ground by the vessels are the major reasons behind such accidents, according to the experts at the port.

In the circular, the CPA also made pilotage or navigational assistance service compulsory for incoming ships having a draft of more than 10 metres. It was highly recommended for vessels of 9.5 metres to 10 metres of draft and simply recommended for any other vessel bound for the Chattogram outer anchorage from Kutubdia. It also asked local shipping agents of vessels whose draft is over 9.5 metres to notify the CPA at least three days in advance before proceeding for the outer anchorage. After receiving such notifications from the agents, individual spots would be demarked at Alpha Anchorage. Such vessels need to take pilot from the CPA while a master mariner needs to stay on board until the draft reduces to 9.5 metres and the dragging tendency is eliminated. Although the above directives by CPA is not in force completely, however awareness regarding navigational issues among the stakeholders have increased, leading to greater discipline at the anchorage and contributing to fewer collisions and dragging incidents in the recent years. A total of 283 vessels were involved in collisions at the outer anchorage in the decade to 2019. However, in the past 5 years our internal data shows that the percentage of collision claims handled by Interport

Maritime has really decreased. Statistics showing Collision incidents in Bangladesh in the past few years, based on the files handled by Interport Maritime Limited.

Year	Total Files Handled By IML	Collision Incident	Percentage %
2017	330	36	10.9 % (36 Out of 330)
2018	372	23	6.18 % (23 Out of 372)
2019	350	14	4 % (14 Out of 350)
2020	331	16	4.83% (16 out of 331)
2021	426	21	4.92 % (21 Out of 426)
2022	398	20	5.03 % (20 Out of 398)

Crew Compensation

A general cargo vessel manned by Bangladeshi seafarers sank off the coast of Phuket, Thailand in rough seas. 6 of the 17 crews were initially rescued by Thai Navy Helicopter, while 11 were missing. Three of the 11 missing crews were eventually rescued by Thai Coast Guard and another merchant vessel sailing by. The Shipowner was covered by a Club of the International Group for its third-party liabilities. The IG Club acted in a humanitarian manner and on behalf of the club we arranged safe repatriation and adequate compensation for the deceased Bangladeshi crew members' family as well as the injured crew members, in line with international law and ILO Maritime Labour Convention (MLC). We on behalf of the Club also ensured proper treatment for the injured Bangladeshi crew members which was highly appreciated by them.

We have most recently been involved as local Correspondent in the unfortunate M.V. Banglar Samriddhi incident owned by our national carrier Bangladesh Shipping Corporation, which was hit by a rocket while anchored in the Alvia port channel of Ukraine on 02 March owing to the Russia-Ukraine war. The wheelhouse, adjacent decks and front of superstructure of the ship got damaged in the missile attack and its third engineer Hadisur Rahman was killed. However, the 28 other sailors have been evacuated. An expatriate Bangladeshi group in Ukraine helped the crew to be rescued from the ship and crossed to Ukraine border and the Bangladesh embassies in Poland, Romani and Austria helped in the repatriation of the crew to Bangladesh. The war reinsurers arranged substantial compensation for the deceased Mr. Hadisur's family and other crew members. As compensation $5,05,000/- was given to Hadisur's family which is the highest death compensation amount paid to any crew member in Bangladesh till now. Moreover, other crew member were paid seven months' salary.

Lighter Contact Damages & claims

Statistics showing Lighter contact with mother vessels (during ship to ship transfer operations) in Bangladesh in the past few years, based on the files handled by Interport Maritime Limited.

Year	Total Files Handled by IML	Lighter Contact Damages	Percentage (%)
2017	330	40	12.12 % (40 Out of 330)
2018	372	52	13. 97 % (52 Out of 372)
2019	350	61	17.42 % (61 Out of 350)

Year	Total Files Handled by IML	Lighter Contact Damages	Percentage (%)
2020	331	54	16.31 % (54 Out of 331)
2021	426	54	12.67 % (54 Out of 426)
2022	398	41	10.3 % (41 Out of 398)

The common reasons of contact incidents are as under

1. Kutubdia deep sea anchorage, being an open sea anchorage, the amount of swell, waves, wind force, tidal current etc. are comparatively greater than what it is at Chattogram outer anchorage for a particular day.
2. During high water, the sea swell, tidal current and wind acts in the same direction towards north. Consequently, alongside lighter vessel rolls more at this stage of tide.
3. Generally, the lighter vessels in Bangladesh are provided with old rubber tyre of motor vehicles permanently fastened by iron chain to both side of the lighter vessels for protection. The lighter vessels are usually surrounded by 10 to 12 pairs of rubber tyre fenders on both side as a means of best protection, but 100 percent safeguard cannot be achieved by implementing this method.

The preventive measure for avoiding such contact damages should be taken by the mother vessels. The mother vessels should not allow the lighter vessels to come alongside without satisfactory or adequate pneumatic fenders especially during rough sea & weather conditions. The master of the mother vessel should instruct the lighter vessels to cast off from the mother vessel prior to swinging due to change of tide and wait for an hour or so till the sea condition is improved. The master should allow the lighter vessels in the vicinity of the mother vessel and arrive alongside the mother vessel only after the swinging is over with the change of tide.

Fixed or Floating objects damages & Claims

After Cargo Claims and Collision/Contact Damage Claims, the most frequent category of claims faced by us at Bangladeshi Ports are Damage to Property (FFOs/Fixed or Floating Objects) Claims. FFO Claims have been particularly concerning for us in the past few years as we have faced a lot of incidents in which Ships have been detained for long periods due to contact with Port properties (for e.g Port jetty and terminal structures). The Ships were not allowed to leave the port until a full assessment of damages and settlement of the claims. Furthermore, the Ships were often arrested by the authorities requesting “unlimited undertaking” as security to get the vessel freed from arrest resulting in ships suffering huge financial losses in terms of additional hire, crew maintenance, port dues and agency fees due to the delay. The prolonged detention also risks consequential financial losses for Shipowners such as loss of future charters, and deterioration of the vessel and any cargo carried onboard or on containers.

There were also a few cases recently in which the concerned jetty/terminal was in already dilapidated condition and was unable to withstand the contact pressure of the vessel during berthing. However, the authorities detained the vessel and claimed damages for the new construction of the structures as opposed to claiming for the partial damages sustained to the structures. The authorities did not accept

the Letter of Undertaking (LOU) provided by the Club and the Shipowners had to arrange Bank Guarantees as security to free the ships from detention which took at least seven working days to arrange. Many of these matters are still unresolved, facing litigation in the Admiralty Courts. This issue became a major concern among Shipowners and Charterers calling in Bangladeshi ports and inevitably lowering our ranking in the "Ease of Doing Business" index and needs to be addressed by all leaders and stakeholders in the Maritime industry.

One way in which this issue can be eased is for our local stakeholders to accept the P&I Clubs Letter of Undertaking (LOU) as security. When claims fall within the P&I Cover, International Group Clubs can at their discretion, assist remarkably by quickly (within a day, if not a few hours) providing an LOU as security and getting the ships back in business. A club LOU is a written promise whereby the club agrees to promptly pay a final and un-appealable judgment by a competent court, or if the club so agrees, a sum in settlement of the claim. The standard form of club LOU is an acceptable form of security in most jurisdictions and if required can be altered to fit local demands without losing their basic character and essential clauses retaining all defenses and the right of appeal as in a bank guarantee. In contrast, a bank guarantee takes several business days to arrange and most likely than not require an expiration date in the guarantee. Given the delay of arranging bank guarantees and the costs of banks fees and commission rates (around 2% per annum in Bangladesh), club LOUs result in substantial savings for the Shipowners/Members as well as minimizing business disruption.

Cargo claims

Of all the claims experienced in Bangladeshi Ports Cargo Shortage and Cargo Damage Claims are the most frequent. After that the most common are Lighter Vessel Contact Damages (during Ship to Ship Transfer Operations) and Collision Incidents.

Prevention is always better than cure and in order for the Clubs and Members to mitigate losses and to prevent claims arising out of various incidents, we recommend taking certain precautionary and loss-prevention measures which can be taken by Members (Shipowners and Charterers) before the vessels call at Bangladeshi ports:

Cargo Shortage Claim

Statistics showing Cargo shortage cases in Bangladesh in the past few years, based on the files handled by Interport Maritime Limited.

Year	Total Files Handled	Cargo Shortage	Percentage (%)
2017	330	34	10.3 % (34 Out of 330)
2018	372	32	8.60 % (32 Out of 372)
2019	350	23	6.57 % (23 Out of 350)
2020	331	15	4.53 % (15 Out of 331)
2021	426	19	4.46 % (19 Out of 426)
2022	398	9	2.26 % (9 Out of 398)

Our findings and recommendations are as under to check the shortage claims

Dry Bulk Cargo

In case of dry bulk cargo final outturn/discharged quantity is ascertained on the basis of Draft Survey Findings. On arrival of the vessel and prior to commencement of discharge, total estimated cargo quantity on board the vessel is ascertained by arrival/initial draft survey on the basis of constant declared by Master which is verified during final draft survey. Our experience shows that during arrival load draft surveys, solo draft survey conducted by the cargo interest concern led to dispute which gives rise to paper cargo shortage claim. If Owners do not appoint a qualified marine surveyor for the draft survey, it becomes difficult to protect Owners' interest when any shortage claim arise based on consignees/receivers' surveyors' findings. We highly recommend arranging a draft survey both at load port and discharge port to minimize and/ avoid cargo shortage claims at the sea ports of Bangladesh.

Liquid Cargo

As per law, in case of liquid cargo final outturn/discharged quantity is ascertained on the basis of Ullage Survey Findings. We would recommend loss prevention measure to best protect Owners interests:

- Arrival ullage survey prior to commencing cargo discharge from vessel.
- Empty tank inspection after completion of discharge operation.
- Collection of cargo samples.

Note 1: We generally do not recommend carrying out ullage surveys of lighter barges as the mother vessel's liability ceases once the cargo crosses vessel's railing. Moreover, the lighter vessels usually do not maintain proper calibration chart and hydrostatic table.

Note 2: The Chief Officer of the vessel usually carries out the ullage survey of mother vessel's tank after discharging cargo into each lighter vessel. The customs boat note is issued after discharging of cargo into each lighter vessel. We generally advise the Chief Officer to put appropriate remarks in the boat note if there are difference between ship's figure and lighter vessel's figure in the boat note. Member may consider appointing staff surveyor who will monitor the discharge operation on continuous basis onboard mother vessel to assist Chief Officer to check the ullage of mother vessel's tank prior to and after discharging into lighter vessel and assist in putting appropriate remarks in the boat note.

In this regard, we like to share one of our achievements. For the past few decades, almost every tanker vessels calling at Chattogram Port laden with liquid cargo faced paper cargo shortage claims. Vessel's sailing was delayed until Letter of Undertaking was provided by the shipowners/charterers P&I Club which caused great inconvenience to the smooth turnaround of tanker Owners and Charterers. Founder of IML, Capt. MAK had filed a writ against the Chattogram Customs Authority in 2011 for their penalty demand for shortage based on shore tank's quantity survey rather than based on ship's Ullage survey. Interport's long struggle paid-off when the Honourable High Court Division of the Supreme Court has given three common judgments on 01.02.2016, 10.04.2016 and 18.01.2017 respectively in favour of our shipowner members for similar writ cases filed against customs authority, imposing penalty against

Shipowners, alleging cargo shortage based on shore tank quantity survey findings. As such, the customs penalty imposed on basis of shore tank survey has been declared to be without basis and the Supreme Court confirmed that Customs Authorities can only impose penalty on the basis of Ship Ullage survey.

Later on, the Customs Authority has appealed before the Appellate Division of the Supreme Court against the order passed by the High Court Division. The appeal filed by the Customs Authority came up for hearing before the Appellate Division on 28 June 2021. The hon'ble judges of the Appellate Division upon hearing the parties dismissed the appeal. It is now well established that ship's ullage survey is the appropriate method to ascertain cargo quantity in case of liquid cargo discharged. This is a great milestone for IML and our records show that the trends of fabricated liquid cargo shortage claims have dramatically reduced in the past few years.

Bagged Cargo

1. In addition to carrying out the tally survey we would recommend having a draft survey carried out jointly upon completion of cargo loading at the load port in order to safeguard Members' interests.
2. We would strongly recommend the Club and Members to advise the Charterers/Suppliers/Receivers to ensure that the stevedores do not use hooks while loading or discharging at the respective ports.
3. In case of spillage due to use of hooks, the spilled-out cargo should be refilled into spare bags and the refilled spare bags and should be accurately weighed as often the stevedores overfill the bags to create paper shortages in the nos. of bags. Tally surveyor appointed for continuous discharge monitoring can cross-check/assist with the weighing of the refilled bags.
4. Using tarpaulin on jetty wharf while the cargo is loaded or unloaded can significantly minimise the cargo loss. The accumulated spilled out cargo on the tarpaulin can be refilled into spare bags in the same manner as mentioned in point no. iv.
5. Ensuring that the cargo carrying shore-side vehicles do not have protruding sharp elements on their decks or deck-side supports which may tear the bags, causing cargo spillage/loss, and ultimately result in cargo shortage claims.

Cargo Damage Claim

Statistics showing Cargo damage cases in Bangladesh in the last five (05) years, based on the files handled by Interport Maritime Limited.

Year	Total Files Handled	Cargo Damage	Percentage %
2017	330	22	6.66 % (22 Out of 330)
2018	372	27	7.25 % (27 Out of 372)
2019	350	25	7.14 % (25 Out of 350)
2020	331	36	10.87 % (36 Out of 331)
2021	426	33	7.74 % (33 Out of 426)
2022	398	22	5.53 % (22 Out of 398)

Our findings and recommendations are as under to check the damage claims:

Dry Bulk Cargo

There can be issues with quality of cargo which may lead to cargo damage claim and Master/Members should let the correspondent know immediately if any issue arises such as lumping and caking of cargo. If continuous monitoring is carried out, the attending staff surveyor will monitor the discharging process and render necessary assistance to Master. Carrying dry bulk cargo during the monsoons can increase chances of damage due to ingress of rain water and/ or sea water, if hatch covers are not watertight and/or are not closed promptly during loading / discharging operations.

Prior to arrival at Chattogram and Mongla, Master should open hatch covers and check the cargo condition. If there are minor amounts of lumped cargo etc. due to slight ingress of water such cargo should be removed from the hold and store separately for record so that any further dispute about condition can be stopped.

Bagged Cargo

Our experiences show that in case of bagged cargo, ship owners hardly face cargo damage claim unless the cargo is affected at load port due to loading during rain or adverse weather condition. Members should consider appointing qualified marine surveyors at both load port and discharge port to carry out cargo condition survey jointly with Shippers/Charterers appointed surveyor. If the cargo is loaded during rain, we strongly recommend to issue LOP at load port holding the Shipper/Charterers liable for any cargo quality issue and obtain LOI from Charterers that they will deal the cargo quality issue (if any arises) at discharge port.

Cargo Quality Claims

Dry Bulk Cargo

Shipowner members may sometimes face claims for purely cargo quality issues (for e.g inherent vice) for which they should not be held liable. We recommend owners to arrange joint cargo condition survey and collection of cargo samples both at load port and discharge port to proactively deal with such issues.

Liquid Bulk Cargo

Of recent many one our members' vessel experienced cargo quality issue at Chittagong. Collection of joint cargo sample both at load port and discharge port is very important to protect Owners' interest in case of cargo quality dispute. We would suggest member to instruct Master/Chief officer to ensure vessel's tanks and pipe lines are properly cleaned prior to loading cargo at load port to avoid any cargo contamination claim.

Red Alert (FD&D)

Some disreputable local charterers, has been involved in regular disputes with Shipowners who fixed their vessels with bagged cargo particularly urea for Mongla Port. The charterers have not been paying their freight, demurrage and hire, resulting in Shipowners and Disponent Owners being left out of pocket and also in vessels being wrongfully detained and wrongly arrested. One of the charterers was blacklisted by BADC (Bangladesh Agricultural Development Corporation) and BCIC (Bangladesh Chemical

Industries Corporation) for his fraudulent activities in the past. However the Charterer managed to obtain a stay order from Court and resume participating in tenders by BADC and BCIC. The Charterer put quite a few Shipowners in difficulty when working through a Singapore front company. However his Singapore front company's Bank account was subsequently attached and he started working in the name of another front company incorporated in Bangkok, Thailand, to fix vessels so that the Head Owners and the Disponent Owners are unaware that the bottom charterer/voyage charterer is being headed by him as he already had a bad reputation in the market.

We as correspondents warned the Clubs and our Members about these unconscientious people working down in the charter chain as voyage charterer and to contact us whenever in doubt or freight remains unpaid while bringing shipments to Bangladesh. We also filed numbers of admiralty suits against these charterers to safeguard Shipowners interests and most of the local charterers are now out of the market and disputes regarding unpaid freight have been drastically reduced.

Conclusion

Bangladesh's sea ports play a pivotal role in driving the country's blue economy and maritime trade. Enhancing port efficiency, maritime governance, and legislation are crucial for maximizing the potential of the blue economy and attracting local investments in shipping. Improving infrastructure, and implementing best practices for claims handling are essential steps toward optimizing port operations. By addressing challenges, adopting proactive measures, and leveraging opportunities, Bangladesh can foster a thriving blue economy, create employment opportunities, and contribute significantly to global maritime trade.

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Engr. Tanjil Ahmed Ruhullah MNI CMILT

Engr. Tanjil Ahmed Ruhullah is currently serving as the Managing Director of Interport Maritime Ltd. He joined Interport as a P&I Claims Handler in 2010 after completing his graduation from BRAC University from the Department of Electronics and Communications Engineering (ECE), with full merit-based scholarship. He founded the Next Generation (previously known as the Young Professionals Forum) of CILT (The Chartered Institute of Logistics and Transport) Bangladesh. He was elected as the youngest board Director of Bangladesh Shipping Agents Association (BSAA), for the term 2021-2023 and 2023-2025 and was recently appointed as a Standing Committee Member on Blue Economy and Industry/Academia at the Dhaka Chamber of Commerce & Industry (DCCI).

মোর প্রিয়া

নৌঃ প্রকৌশলী মুহাম্মদ নাসির

যেই বন্ধুর-ই সাথে হয় দেখা, প্রথমে যে কথা বলে,
আর কত কাল সাগরেতে যাবি, জীবন কি ফুরাবি জলে?
আমি বলি - না না, তা কি করে হয়, আর যে দু'চার মাস,
যেতে যে একটু হচ্ছে রে ভায়া, এরপর অবকাশ।
খুশি না হলেও বন্ধু আমার মনে মনে ঠিকই ভাবে,
ঢের বুঝিয়াছি তোমার দু'মাসে বছর গড়িয়ে যাবে।
দিন চলে যায়, মাস চলে যায়, একাকি সাগরে ভাসি,
আমি যে নাবিক এমনি করিয়া জীবন প্রান্তে আসি।
সাগরে থাকিয়া সমাজ হইতে রয়েছি অনেক দূরে,
বিরহ কাতর জীবনের বাণী যেন বাজে একই সুরে।
সময় ফুরায় তবু একবার ভাবিতে ইচ্ছা হয়,
সাগর কি কেবল এক তরফাতে করেছে আমায় ক্ষয়?
মেঘ কেটে যায় ভাবনা আমার আলোর পরশে আসে,
দেনা-পাওনার হিসাব-নিকাশ চোখের সামনে ভাসে।
জীবনের সব সাগর নিয়েছে দিয়েছে অঢেল বেশি,
তাই তারই পানে, তারই মোহ টানে নিত্য ছুটিয়া আসি।
এ ঘাট ও ঘাট চড়ে ফিরি আমি, সাগর জলেতে ঘর,
এত পরিচয় যার সাথে বল কেমনে ভাবি সে পর।
কর্মের মাঝে শান্তি যে কত সাগরের কাছে শেখা,
নানা দেশ জাতি, তাদের জীবন ভাগ্যে যে হল দেখা।
অর্থ বৃত্ত পেয়েছি অনেক মিটেছে মনের আশা,
হোক সেই যশে, তবু পেয়েছি যে অনেকের ভালোবাসা।
তাই তো সাগর সালাম তোমায় তুমি যে আমার প্রিয়া
তোমার ডাগর নীলেতে ডুবিয়া শুদ্ধি হল যে হিয়া।



Marine Engineer Mohammad Nasir (14E)

Mohammad Nasir (14E) started his sea carrier in 1979 with Bangladesh Shipping Corporation and till date he is sailing almost regularly as Chief Engineer in different shipping companies. Besides sailing he is also engaged in the field of survey and working as RSO of DG Shipping for the implementation of ISPS code. He studied at Khulna St. Joseph High School, Jhenaidah Cadet College and Bangladesh Marine Academy. He has deep fascination in writing poem. His first write-up "Porthole" (a Poetry volume) was published in 2021. As a Lyricist his music album was released in 2012.

Activity Album




MARINE SURVEYORS

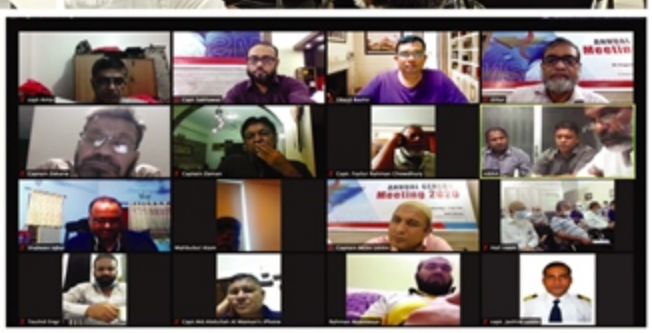



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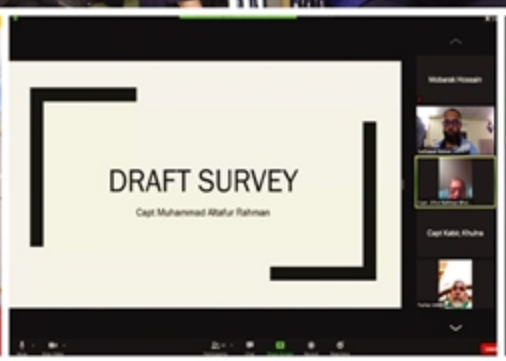

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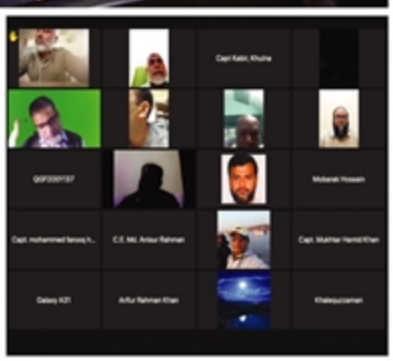

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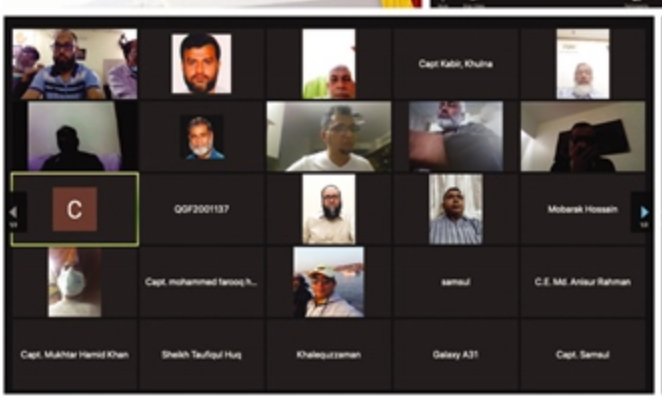


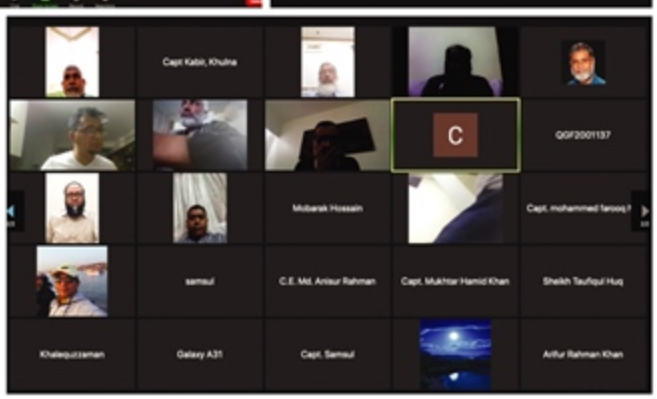



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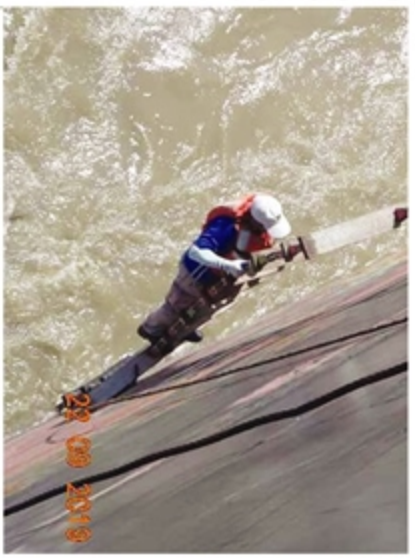
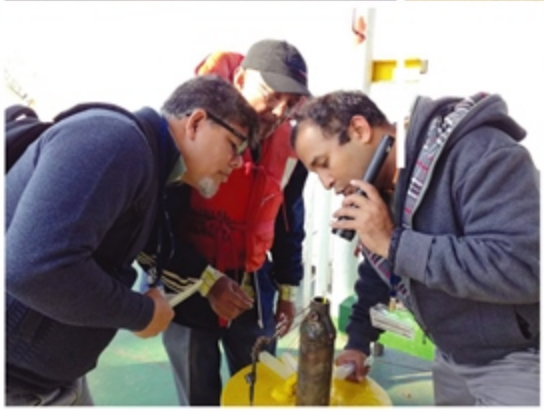

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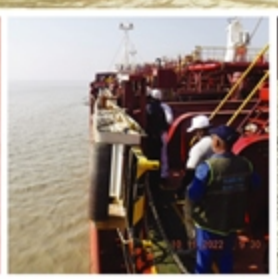

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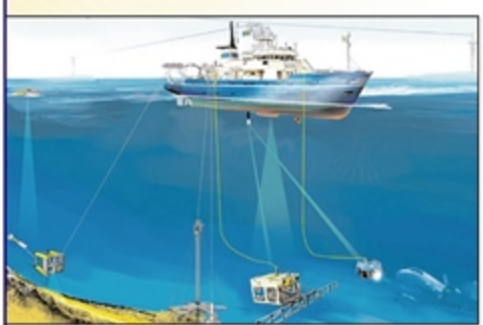
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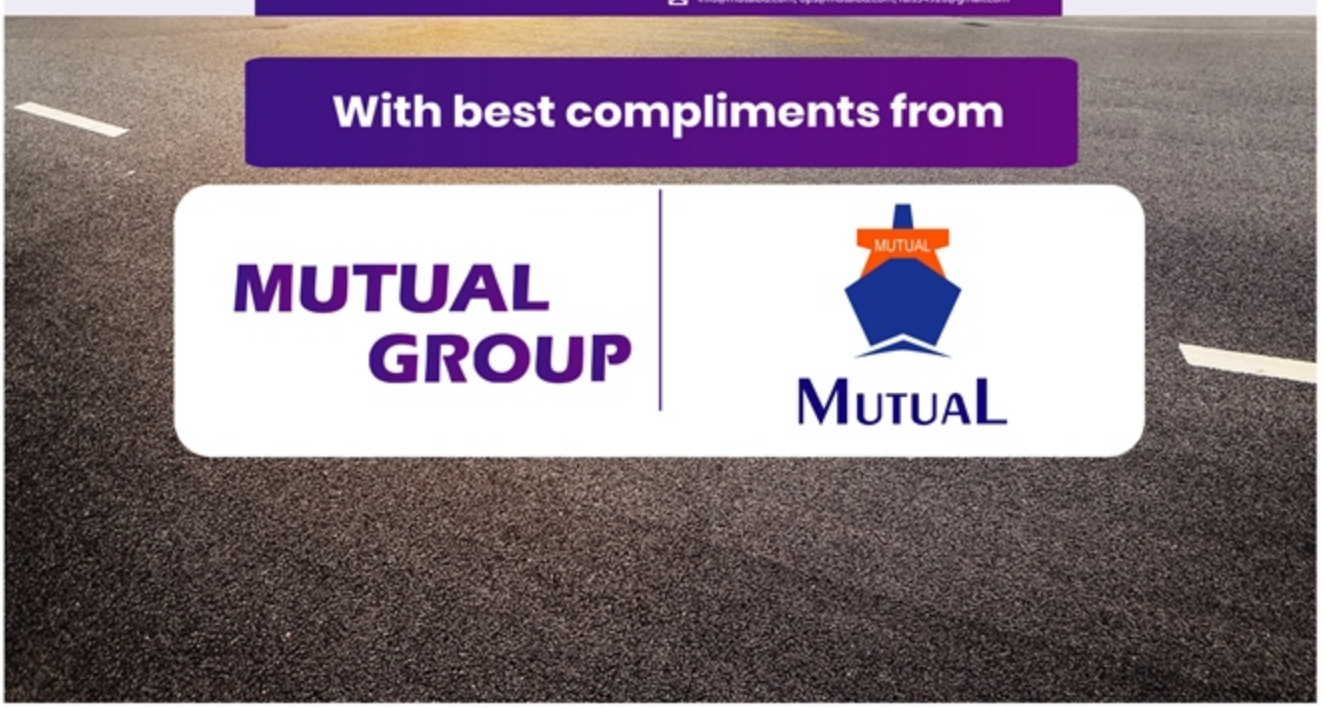
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- Pre-purchase Surveys & Valuation.
- On / Off Hire Condition Surveys.
- Bunker surveys & Sampling.
- Cargo Outturn surveys.
- Hatch/hold surveys for Shippers & Charterers.
- Pre-loading, stowage & discharge supervision including heavy lift operation.
- Towage & lashing Approvals.
- Pre-demolition survey.

RISK ASSESSMENT

(H&M, P&I & Transport Liability)

- Loss prevention inspection on behalf of P&I, H&M and Intermodal Transport Liability Insurers.
- Empanelled by IG Clubs, Fixed Premium P&I and H&M insurers.
- Ultra-sonic hatch leak testing machine available.

RECOGNIZED SECURITY ORGANIZATION

- Implementation of ISPS Code for the port facilities

Flag State Inspection

- Liberia flag state inspector

Maritime Registrar

- St. Kitts & Nevis International Ship Registry

Damage Surveys/Loss Assessment / Loss Control

- Assessment of nature, extent & cause of dry bulk, general, liquid & containerised and reefer cargo.
- Cargo loss control by draft, ullage and tally surveys.
- Investigation into cargo and hull damage to establish cause & liability.
- Mitigation of loss including cargo separation, discharge & storage control, reconditioning & salvage sale.








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INTERASIA SURVEY & INSPECTION SERVICES LTD.

AN ISO 9001:2015 CERTIFIED COMPANY

Interasia Survey & Inspection Services Ltd. (ISISL) is a leading marine survey firm in Bangladesh, providing independent and expert marine surveys, inspections, ship repair consultancy services, including investigations serving P&I and H&M insurance underwriters, as well as shipowners, insurance underwriters, cargo owners, freight forwarders, and lawyers. Our team of highly technical maritime experts, with decades of seafaring and marine survey experience, and accredited by the Department of Shipping are available 24/7 to assist you with your survey needs anywhere through our nationwide network of offices in all the major ports from Chittagong, Mongla, Dhaka, Payra to Matarbari. Over the course of the last decade of operations in Bangladesh, we have performed over two thousand marine survey assignments for local and international clients, including the International Group of P&I Clubs. We are also licensed by the Insurance Development and Regulatory Authority (IDRA) of Bangladesh.

Our Services

Loss Prevention Surveys:

- Ship Condition Survey (P&I and H&M)
- Petroleum/Vegetable Oil/Bulkers/LPG - Quantity & Quality Survey
- Bunker Survey
- Ship On and Off-Hire Survey
- Tally Supervision and Continuous Discharge Monitoring
- Pre-Purchase Ship Survey
- Insurance Warranty Survey of Heavy Lift & Project Cargo
- Towage Approval Survey
- Pre-shipment Inspection
- Port Captaincy
- Management Audit

Casualty Investigations:

- Collision, Damage to Ship Structure and Machinery, Damage to Cargo, Contact with Fixed and Floating Object, Personal Injury
- Fire Investigation
- Wreck Removal and Salvage Supervision
- Container Survey including Reefer and Perishables



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