

BRIDGE

JULY 2019 | 6TH EDITION

THE FUTURE *of* PORTS AND SHIPPING *in* SRI LANKA



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Chairman of Sri Lanka
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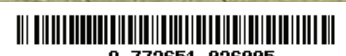


CEYLON
ASSOCIATION OF
SHIPPING AGENTS

No 56, Ward Place, Colombo 7, Sri Lanka

Rs.600/-

ISSN 265 1-026X



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CASA is pleased to bring you the 6th Edition of the 'Bridge' magazine. The Editorial board continues to monitor progress and content improvement as each edition is put together.

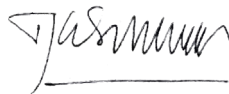
The focus, as always, is on sharing knowledge and information, building capacity of our younger generation and growing and empowering men and women of our industry and allied industries. We continue to feature interviews from leading personalities and articles and research papers from experts to this end. Advertisers and subscribers continue to grow and overall it is very encouraging for our team to keep working zealously. Should you desire to publish your work the editorial board will be happy to review it to be featured in forthcoming issues.

CASA's weekly E Schedule is now

reaching in excess of 2200 recipients and if you wish to receive it you can send us your email address and we will be glad to add you on to our list.

The schedule will soon provide information specific to importers too.

We express our deepest condolences to all those who lost family, relatives and friends in the unfortunate tragedy that befell the nation on 21/4. We also wish a speedy recovery to all who were injured and continue to suffer in pain of mind and body.



Ralph Anandappa
Secretary General
Ceylon Association of shipping agents

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With plans to reclaim the land and build a new city going as far back as 2004, it is obvious that city planners saw a dire need to expand the Colombo Business District (CBD) even then. They recognised that more space was necessary to develop the city's economy in the future. The plan was made, based on the fact that the GDP of cities far outweighs national GDP levels, and if there was going to be any opportunity created then, expansion had to come first.

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Maritime Education and Training is a vital element in the journey to make Sri Lanka a maritime hub. Ceylon Association of Shipping Agents (CASA) has highlighted the importance of capacity building in the industry in numerous press articles and forums and have always encouraged its members to invest in human capital. This article will reflect on the contribution made by seafarers to the Sri Lankan Economy and the opportunities that exist in maritime education.

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YoungShip Sri Lanka formerly Young Shipping Professionals (YSP) of CASA, YoungShip Sri Lanka is part of Youngship International which was formed to be the voice for young people in the maritime industry and has won awards for promoting young entrepreneurs and for promoting young professionals. Headquartered in Norway, Youngship is present in 18 countries with a membership of over 3000. The Norway branch has a 350-strong membership and we are pleased announce that with support from CASA the Sri Lanka branch, the newest addition to the list now possesses a 250-strong membership.

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Captain Chandra Godakanda Arachchi

S.S. Titanic was said to be unsinkable, similarly oil platform Piper Alpha owned by Occidental Petroleum was located 110 miles from Port of Aberdeen operated in extreme weather conditions most of the time during the year, was known as indestructible due to the sheer size of the structure.

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Captain Chandra Godakanda Arachchi
Master Mariner

Two hundred and seventy metres long double hull Motor tanker Sanchi built in 2008 collided with CF Crystal, 76000 tonnes bulk carrier DWT (built 2011) around 2000 hrs China Standard time (CST) on 06th January, 2018, one hundred and sixty miles East of Shanghai.

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CLAIMS IN GENERAL AVERAGE:



By Dr. Dan Malika Gunasekera

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“PAYING FOR THE LOSS WHEN YOU ARE NOT WRONG AT ALL”

In the past few months, there were couples of incidents in the maritime sector that led to an alarming attention of the shipping community consisting of ship-agents, freight-forwarders, shippers, and consignees. As early as February this year (2019) a container ship named APL Vancouver caught fire on board off Vung Ro, Vietnam while the ship was en-route to Singapore. According to the sources, the fire has started in one cargo bay of the vessel, and the Vietnamese fire fighters have immediately responded to avert any substantial damage to the ship, its cargo, and the nearby marine

environment. This is in fact not the only incident of its kind, as many mariners would know with their experience, and not something that is uncommon to the maritime world as far as other maritime interests are concerned. In the very recent past, we have also witnessed some similar incidents that occurred on board MV Yantin Express, MV Maersk Honam, MV Maersk Kensington, MV Wan Hai 307, MV MSC Flaminia, and even the one that reached our Port of Colombo, the MV MSC Daniella. Although, they may be common to the seafaring community, those who own cargo on board such ships that

end up in a fire, and thereafter been salvaged, and taken to ports of refuge; the consequences become sometimes unbearable in a much commercial sense. It is obviously due to the raising of the concept called General Average that require those cargo interests to furnish some sort of security against which a part of the damage could be met. In today's discussion, I would like to elaborate on the concept of General Average that most of my clients consult me as a result of these said recent incidents, which led to the respective declarations.

Some of the questions that my clients

Though one may see certain strictness in its application, some other may see a limitless scope in applying this principle in various incidents.

ask me these days are like: Are we liable to settle General Average?; Have we pledged towards any fulfillment of a duty?; Why should a ship be insured if we are to bear such costs?; Can't marine insurance hold this liability by itself?: all these plethora of questions that I have to answer to each one of them at separate instances. Let me take them one by one:

General Average and Marine Insurance

The roots of General Average runs to around 800 BC when it was felt that everyone who holds an interest in the maritime adventure in the nature of a stakeholder may it be ship, cargo, charter-hire, and the like share among them the risks associated with the dangers that all such interests face during sea voyage. It was even included as a general clause in a bill of lading whereby the carrier undertakes to carry the cargo on the promise that cargo-owners gave with regard to such posed risks. However, there was a clear distinction between the particular types of damages that occur to a ship while the general ones were intended to be shared among everyone. In view of the particular types that occur only to the ship or the cargo or both, the owner of such partly damaged property was to held liability towards

such damage irrespective of being subjected to a common distribution among all parties having interest in the ship and its belongings. In contrast, marine insurance, which was developed as a means of risk mitigation came into being much later than that of the emergence of the concept of General Average, with marine policies being recognized in the Law Merchant (lex mercatoria) in around 1601 AD. However, the P&I Clubs emerged in the 19th Century where shipowners collectively undertook the mutual underwriting to cover the 1/3 portion of which the marine insurance companies failed to compensate against third party claims, was in addition to what was afforded by insurance per se. Nevertheless, marine insurers were reluctant to provide an overall coverage thus leaving out the area which was previously covered under the concept of General Average. Therefore, the true sense of marine insurance never tended to operate as a substitute to the customary and quite historic approach in risk sharing among the various stakeholders in maritime adventure, but rather a 'gap filler' to what compensation was not afforded.

Since, the exact extent at which General Average could cover situations of certain mishaps in shipping was quite skeptical, a strong legal regime known as the York-Antwerp Rules were developed in the late 1800s.

York-Antwerp Regimes

It was in 1890 the first codification of rules pertaining to General Average were brought into being with the development of York-Antwerp Rules based on the American jurisprudence's case of *Barnard v. Adams* that required the establishment of three main elements. These included the requirement of a 'common danger' involved in the maritime adventure where an act of jettison, jactus, or casting away of a portion of joint concern was inevitable for the purpose of overcoming an imminent peril as a successful attempt to save the rest of the maritime interest involved. According to the modern versions of this regime, it requires as per its Rule A; "an extra ordinary sacrifice or expenditure that is intentionally and reasonably made or incurred for the purpose of preserving the property involved in the common maritime adventure from peril". Though one may see certain strictness in its application, some other may see a limitless scope in applying this principle in various incidents. There are in fact further clarifications and reservations supplied by case law that fully explain differing scenarios.

Firstly, a General Average act must fulfill an 'extra ordinary' type of a character that has led to the 'sacrifice or expenditure' in particular. It should obviously be a result of a situation that the ship had to face in its voyage that required this special type of an action to be taken in respect of avoiding damage or loss. Therefore, the ultimate result has incurred towards the ship to take the necessary steps to recover itself and/or the belongings that it carries.

A General Average act must fulfill an 'extra ordinary' type of a character that has led to the 'sacrifice or expenditure' in particular.


These sacrifices could be the ship, its cargo, and/or the freight that the ship is ought to secure from its contractual carriage, while expenditure that it bears towards restoring the entire situation would extend to the payments that the ship levies in respect of salvage, costs associated with maneuvering of the ship to a refuge port and the costs involved within such refuge as well as to make good the environmental damage it had caused, and other associated expenses including the substituted ones incidental thereto. It is therefore clear that intentional acts of the carrier including that of its' crew, and any acts of negligence would not fall within the ambit of a General Average act as they fail to qualify within statutory requirements to make a declaration of this nature. In the case of a sacrifice with respect to cargo on board, Rule I of the York-Antwerp Rules distinguish the nature in which such goods have been carried. Accordingly, the goods should have been carried in the customary way rather than of any other manner in which the carrier had placed such goods whereby an act of jettison, which have been executed to maintain the equilibrium of the ship would not allow the shipowner to declare General Average. In the leading case of *Robinson v. Price* [(1877) 2 QB 295] the ship sprang a leak which required it to maintain constant pumping to stay afloat thereby requiring the ship to use coal supplies more than it needs for the voyage thereby letting the ship to use the ship's spars and cargo fuel that it carried for a consignee. The Court upheld a declaration of General Average in this instance and allowed the shipowner to call for contributions

from those who had their cargo interests in the ship in order to settle the owner of the cargo fuel. Such an act falls within the characteristic of being an 'extra ordinary' that the ship would in no way expect a situation of that nature during her voyage. Likewise, in the present matters in discussion, the ship broke a fire in *Stewart v. West India & Pacific SS Co. Ltd.* [(1873) LR 8 QB 362] where it incurred loss or damage during the process of extinguishing the fire on board. Such an incident is also statutorily allowed by virtue of the application of Rule III of the York-Antwerp Rules that state 'damage done to a ship and cargo, or either of them, by water or otherwise, including damage by beaching or scuttling a burning ship, in extinguishing a fire on board the ship' are allowable in general Average subject however that 'no compensation shall be made for damage by smoke'.

In addition to the sacrifice of cargo or the ship, the freight-to-be-collected also falls as compensable against the shipowner as he is yet to receive such payment for the carriage obligation that he undertook. Interestingly, the salvage charges that the shipowner would become liable to pay in respect of an incident that falls within the ambit of General Average has a distinction between ordinary salvage charges and special compensation payable to them. In the former case, all salvage charges whether forwarded by a contractual salvor or salvor performed in distress are allowable in General Average as long as such salvage operations were carried out for the purpose of preserving the entire property involved

in the maritime adventure from peril including that of the measures taken in preventing or minimizing marine environmental damage while special compensation called for by such salvor shall not be a part of General Average unless such special compensation has not surpassed the reward that he is entitled to obtain. Much of the assistance could be had from the decision of *Anderson Tritton & Co. v. Ocean SS Co.* [(1884) 10 App Cas 107] where it was specifically held that costs of salvor recoverable in General Average should be to the extent of reasonable figure. However, the amount within such 'reasonable' term is to be set, does not have any further clarifications thus leaving it to the Court to decide by sitting on the brinks of 'unjust enrichment' and 'flood-gates theory'.

Secondly, the act shall be voluntarily or reasonably made or incurred. This would mean that the person in-charge of the operation of the ship such as the Master or his sanctioned officer on board has taken the measures to preserve the maritime property with intention to preserve it no matter how abnormal the act had been but to the reasonable extent that his act would safeguard the interests of the rest including ship and cargo. In the *Seapol* [(1934) P 53] a ship that was at anchor caught up in a sudden gale, and was on the risk of losing her propellers and breaking her back. In order to avoid the said risk, the Master engaged in a risky manoeuvre to get the ship out to sea, but his act caused substantial damage to the ship and the peer in that process and ended up being damaged.



Generally, all Bills of Lading, Charterparties, Contract of Affreightment, and other Contracts of Carriage include a General Average Clause within its terms and conditions of carriage.

The Court having considered the respective action taken by the Master in preventing a huge damage allowed General Average in favour of the ship. Likewise in *McCall v. Houlder Bros* [(1897) 66 LJQB 408] the Master of the ship needed to repair the ship at port of refuge, but since the cargo on board were perishables and had to stay on board, set the ship down by its head in order to effect the repairs. As a result, the cargo got damaged. Finding that the Master did not intend to cause damage, the Court upheld the action of the Master in allowing such act in General Average.

Thirdly, it is important that the Master's intentional act was made at the time of actual peril or based on a calculated risk rather than of a mistake as to the existence of a peril where the consequential losses cannot be attributed to General Average. Since even calculated risks could be attributable, the decision in *Vlassopoulos v. British & Foreign Insurance Co.* [(1929) 1 KB 187] serves some interesting justifications. In this case, the ship was put into port of refuge to effect repairs to a fouled propeller thus incurring repair costs on the owner. The Court held that such repair costs could be allowed in General Average although the ship was not in actual danger at the time she was put into refuge, but was in fact expecting risk having to run with a fouled propeller that wouldn't have avoided any potential danger in the near future during voyage. Fourthly, the ship or its owner must satisfy that

the costs or expenditure that was made or incurred towards making good the ship were made on the basis of preserving the property imperiled in the common adventure or its safety. Here, what is important is that the sole purpose for which such costs or expenses have been borne out should correspond to the 'preservation' or the 'safety' factor of the maritime property rather than letting it to further proceed on to the voyage destined with. *Royal Mail Steam Packet v. English Bank of Rio de Janeiro* [[1887] 19 QBD 362] provide some classic points to this. In this, the ship stranded and a valuable but low weight cargo of specie were removed into lighters solely with the view to preserve such cargo which was on board. However, the ship declared General Average against the cargo for having incurred costs to refloat the ship thereafter. The Court held that the cargo wasn't liable in General Average to contribute towards ship's costs of refloating. If the sole purpose of preserving the maritime property could not be realized, declaration of General Average would not succeed as we have seen in the case of *Chellew v. Royal Commission for the Sugar Supply* [[1992] 1 KB 12] where a ship that incurred port of refuge costs after failing the ship and cargo to reach such port, the Court denied the entitlement to General Average as the maritime property was lost and couldn't be preserved before reaching to the discharge port of refuge.

Bill of Lading Clause

Generally, all Bills of Lading, Charterparties, Contract of Affreightment, and other Contracts of Carriage include a General Average Clause within its terms and conditions of carriage. In the standard form, such Clause may read as:-

"The Merchant shall indemnify the carrier in respect of any claims of a General Average nature which may be made on him and shall provide such security as may be required by the carrier in this connection or when called for. In case General Average is declared, the Merchant shall bear all sums requested against the settlement

of General Average without any deductions. However, the carrier shall not be liable to effect due delivery or delivery within certain time if surveyors, claim adjustors, salvors, or any government authority does not permit the carrier to effect such discharge pending investigations."

This imposes an obligation on the cargo ab initio that it verily undertakes to indemnify the carrier whether it is conducted by the owner of the ship or a charterer, to settle a declared sum as security or an advance sum prior to voyage in order to settle the General Average raised against him/her being the owner of the cargo. What we need to verify at outset is who enters into the contract of carriage with the carrier depending on the terms of carriage i.e. the term used in accordance with the INCOTERMS such as CIF/C&F/FOB or other. For example, if the freight has been paid prior to the voyage, obviously the contract remains between the carrier and the shipper while in 'post-paid' or on 'collect' basis, it is the other way around. Therefore, the burden of settling the security requested for thus lies upon the person who owns the cargo at the time of the incident of raising General Average. While some may take up cargo insurance so that their duty to provide this security could be channeled to the insurer, not all insure their respective goods. The latter would mean that the cargo owner become vulnerable to settle the requested security by him/herself personally, which indeed the panicking point. I do not see this as a matter that a particular client who has cargo interest vested upon him/her to consider it as a 'loosing effect' but a security requested for, is a mere commitment that they participate in the contribution rather than partaking the loss of the whole security in demand. In determining the contributory values, one must consider Rule XVII which categorically include the net value of the property at discharge ascertained in accordance with the commercial invoice or the shipped value in case there does not exist of a commercial invoice in respect of the goods. This value also includes the freight and the insurance, if applicable, less any damage occurred prior to discharge. If the cargo is been sold prior to the act of General Average, then the sale price would account for in this calculation. On the part of the

shipowner, his contribution would mean the value of the ship along with the general average component that the owner accounts for including crew wages and other costs borne by the owner such as for salvage, less any unobtainable amounts in case the cargo that would not be deliverable if they are lost, along with freight unpaid. The only exceptions in avoiding General Average contributions thus lie upon the owners of mails, passenger's luggage, personal effects, and accompanied private vehicles to which, no contribution is to be paid in respect of General Average.

Since, the failing of depositing security would complicate further means of obtaining the release of the cargo, and thereby destine it to the particular destination awaiting its arrival; almost all the cargo owners are somewhat compelled to take urgent decisions based on the commercial viability. In such circumstance, it is advisable to deposit the given figure anticipating the return of the rest sum, if any, that may be settled by the Average Adjuster upon the final settlement of the claim. Although, it can be understood that the particular sum in return would vary within the range of 0.0+% to anything that would be less than 100%, if the final payable to claimants is a value that comprise less than what has been contributed, but however, it should be noted that the final value payable could even be more than the total contributed. In order to meet the commercial ends, it may at least be beneficial on the part of the cargo owner to deliver the goods to his customers and secure the commercial value for which the sales contract has been entered into. Sometimes, it could even extend to much disadvantaged circumstance, if goods are not delivered to the customer that may run into further losses in terms of business.

Role of the Adjuster

Once the notices of the General Average claims are given to the appointed Average Adjuster within 12 months from the date of termination of the common maritime adventure, such Adjuster will be at liberty to estimate the extents of the allowances and

In resisting the claim, the cargo insurers maintained that the owners failed to exercise due diligence in making the ship seaworthy.

contributions in the form of a balance sheet. The calculations of the Adjuster can only be challenged on the ground that they are manifestly incorrect, and not otherwise. Since, the Adjuster is involved in an exercise to account the manifested information that are being forwarded to him/her, the points of contest would lie upon those who are entitled to General Average or who become liable for contributions, purely based on the findings of the respective parties that carry out investigations and surveys through competent personnel. In case a contributory intends to moot the way in which he/she becomes liable to be levied against his/her security or that those who seek General Average has no right to rely upon the concept, or further requisition of funds; then an action may be brought against those who claim for General Average in a competent court.

Admiralty Actions and Reliefs

It is noteworthy that cargo owners could resort to legal action against a claim in General Average irrespective of the fact that General Average has been called for or the security has been

paid for against an Adjuster's formal request. In Sri Lanka, the Admiralty Jurisdiction Act No. 40 of 1983 provides for such a litigant to seek the admiralty jurisdiction of the High Court of Colombo under its S. 2(1)(p) that specifically makes proviso in relation to 'any claim arising out of an act which is or is claimed to be a general average act'. Likewise, such litigant may in alternate seek redress from any court having jurisdiction in a State in which the average adjustment is been handled. A court vested with such an action would look into the merits of the matter in determining whether the act of General Average has been made in accordance with the permitted ambit of the concept.

In recent years, various jurisdictions have evidently deal with similar issues. In the case of MT Cape Bonny [(2017) EWHC 3036] the owners claimed general average contributions from cargo insurers in respect of a casualty alleged to have resulted due to an engine breakdown during a laden voyage. In resisting the claim, the cargo insurers maintained that the owners failed to exercise due diligence in making the ship seaworthy. Having considered the marine survey reports in examination, the court found in cross-examination that the particular breakdown resulted from foreign particles, which should have been removed from the luboil that had damaged the main bearing no.1, and it was no-doubt that the vessel was unseaworthy at the commencement of the voyage. The Court held that the failure to exercise due diligence on the part of the owner was causative to the engine breakdown, and therefore, due to an actionable fault on the part of the owner, the general average expenditure incurred by the owners were not claimable against the cargo interests. In The Longchamp [(2017) UK SC 68] the ship was pirated and a ransom was demanded for its release. The Court held that the expenses incurred by the owner in operating the vessel including crew bonuses and bunkers consumed during the extended period of negotiations that took place with the pirates as well as the 'ransom' itself are allowable in general average. In particular, the Court referred Rule A of the York-Antwerp Rules as covering 'ransom',

which was paid out. The difficulty for the Court was to justify the expenses incurred due to the said extension of time in negotiating a reduced demand of ransom, whether to see that both the ransom and such expense overlap so as to prejudice the cargo interests with double pay. The Court went on to justify this on the basis that the final ransom figure was substantially lesser than what had been demanded by the pirates prior to negotiations, and therefore, the extended negotiations have helped reduce such figure. It was further supported by Rule F of the York-Antwerp that allows such case, where it specifically mentions 'any additional expense incurred in place of another expense which would have been allowable as general average shall be deemed to be general average and so allowed without regard to the saving, if any, to the other interests, but only up to the amount of the general average expense avoided'.

Conclusion

As mentioned in the beginning, some may feel that the concept of General Average is unfair on the part of the cargo owner after having paid the freight, or given the pledge of a post-paid commitment, and on the basis that the ship is ought to possess a marine insurance as pre-requisite to sailing. In the above discussion, I clarified the rational behind the concept of General Average, and the difficulty for the ship to mainly rely upon the marine insurance. Overwhelmingly, the ship irrespective of being owned, chartered, operated, or administered in a sea voyage, takes a huge burden on itself to fulfill the commercial aspirations of the cargo interests. For example, international trade would never be a reality if 'no ship takes on to the sea', and in return, the ship is also in a commercial venture by its own rather than of a mere service. Considering these, it would be imperative for the global economy to safeguard the interests of the shipping community and its industry in particular, thereby enabling it to minimize the extra costs that falls on the heads of the latter within a thin margin of profits that prevail in the marketplace.

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SYNERGY BETWEEN PORTS and PORT CITIES

With plans to reclaim the land and build a new city going as far back as 2004, it is obvious that city planners saw a dire need to expand the Colombo Business District (CBD) even then. They recognised that more space was necessary to develop the city's economy in the future. The plan was made, based on the fact that the GDP of cities far outweighs national GDP levels, and if there was going to be any opportunity created then, expansion had to come first.

Next came the vital question — where would the funds for investment in such a large project come from? Therefore, CHEC Port City Colombo Pvt Ltd's decision to take on the building of a new city adjacent to the Colombo Port, fitted in well with the plan. It was going to be a one of a kind investment and development project not just for Sri Lanka but even in the region.

The initial investment was 1.4 billion US Dollars, for the reclamation of 269 hectares of land from the ocean and setting up the infrastructure. Land reclamation was fully completed in January 2019 and the marina structure and breakwater is to be completed by June 2019. Port City Colombo is now ready to go into the next stage of development i.e. building on the reclaimed land.

The location of this project was well planned and an obvious one. As the Colombo Port's South Harbour Breakwater stretches into the Indian Ocean, the South-North sand movement caused a natural sandbank to form south of the breakwater, creating the ideal place to position the reclamation.

Whilst Port City Colombo has nothing to do with port activities, it is a well-known fact that cities thrive when they are located beside ports and vice versa - ports grow well alongside cities. They are complementary to each other and can have great synergies. The Port City formula is the ideal solution for the economic and social renewal of the capital city. Colombo grew from a small Port City during the Portuguese period into a densely populated urban area

in about 500 years, and the Port City Colombo will build on that foundation.

Port City Colombo which is a Public-Private Partnership with the Sri Lankan Government, is now poised for the next stage of its development - i.e. building the world-class infrastructure required to meet international demand.

As the Private sector partner, CHEC is investing in the hard infrastructure. The Sri Lankan government will augment that with the introduction of business-friendly SEZ laws coupled with competitive tax rates (soft Infrastructure) within the Port City, to attract FDI and promote the export of services.

CHEC's plan in developing this new futuristic city is also intended to raise the bar for the real estate developers of this country. Grade 'A' office and living spaces are the norm and every developer expecting to work in the

Land reclamation was fully completed in January 2019 and the marina structure and breakwater is to be completed by June 2019.

new city would have to comply with set standards .

While the Port City Colombo is designed to have a seamless connection with the existing business district, there is an essential difference between the new city and the old. While one is planned the other has grown organically over the last 250 years. In terms of time, the





Port City Colombo will have about a tenth of that to grow into maturity — so the vision for this entity is on another time scale. While it looks short term in comparison to the span the old city has taken to develop, it is really a long term plan, in comparison to the rapid development taking place in and around the CBD. Whilst the old city is looked at from the individual investor's point of view, the new city's vision and planning are set out scientifically, with world-renowned standards, from environment to future proofing it for the oncoming 4th industrial revolution. The new city will position its investment structure on a totally different footing with new laws and regulations that will attract a whole new level of clients to Sri Lanka.

Port City Colombo is one of the most well mapped out and scrutinized projects to be carried out in the history of this country. It has two Environmental Impact Assessments (EIA), one in December 2015 and the other in October 2017, along with Development Control Regulations and social impact reports done by experts in the field.

Twenty-six government agencies monitored the reclamation and

development of Port City and the project is a partnership between CHEC Port City Colombo and the Government of Sri Lanka who is represented by the UDA and the Ministry of Megapolis and Western Development.

Sri Lanka's first ever international design competition which was held during the first half of 2017 was to create a sustainable design plan for the City's Financial District and Marina. The International Conceptual Urban Design Idea Competition was held between 3 of the world's best Architecture, Interior design, Engineering and Urban Planning firms, Nikken Sekkei of Japan, Gensler headquartered in San Francisco and Skidmore, Owings & Merrill (SOM), from the USA, and SOM was judged the winner of the competition. One of the main criteria for their success was the green and blue aspects in their plan and the innovative way in which they had incorporated features of the existing city of Colombo to the new Port City.

As noted by Architect D.H. Wijewardene, President of the Sri Lanka Institute of Architects at that time, design competitions have become a world trend today as it helps to get different

options and wider perspectives for a project, giving project initiators the opportunity to see the most suitable and viable design solutions. While confirming that this is not a common practice in Sri Lanka, he said it should be made a practice for all landmark projects in the country.

Port City Colombo is a unique development project not only for Sri Lanka and its people but for the entire region. It will be a game changer that will have a significant impact socially, economically and environmentally. The project is benchmarking environmental standards, the latest of which is the Development Control Regulations (DCR) which were launched in 2018. The DCR has a detailed plan to be followed in all areas such as Urban Design, Utilities, Landscape and Sustainability, which are compulsory for all developers within Port City.

Port City Colombo will tap into the latest technology to build a smart city of the future based on the twin pillars of liveability and sustainability. As the city develops over the next two decades, there will be better connectivity and new innovative solutions emerging to enhance the well-being of the people.

TRIM YOUR SAILS before it's too late!

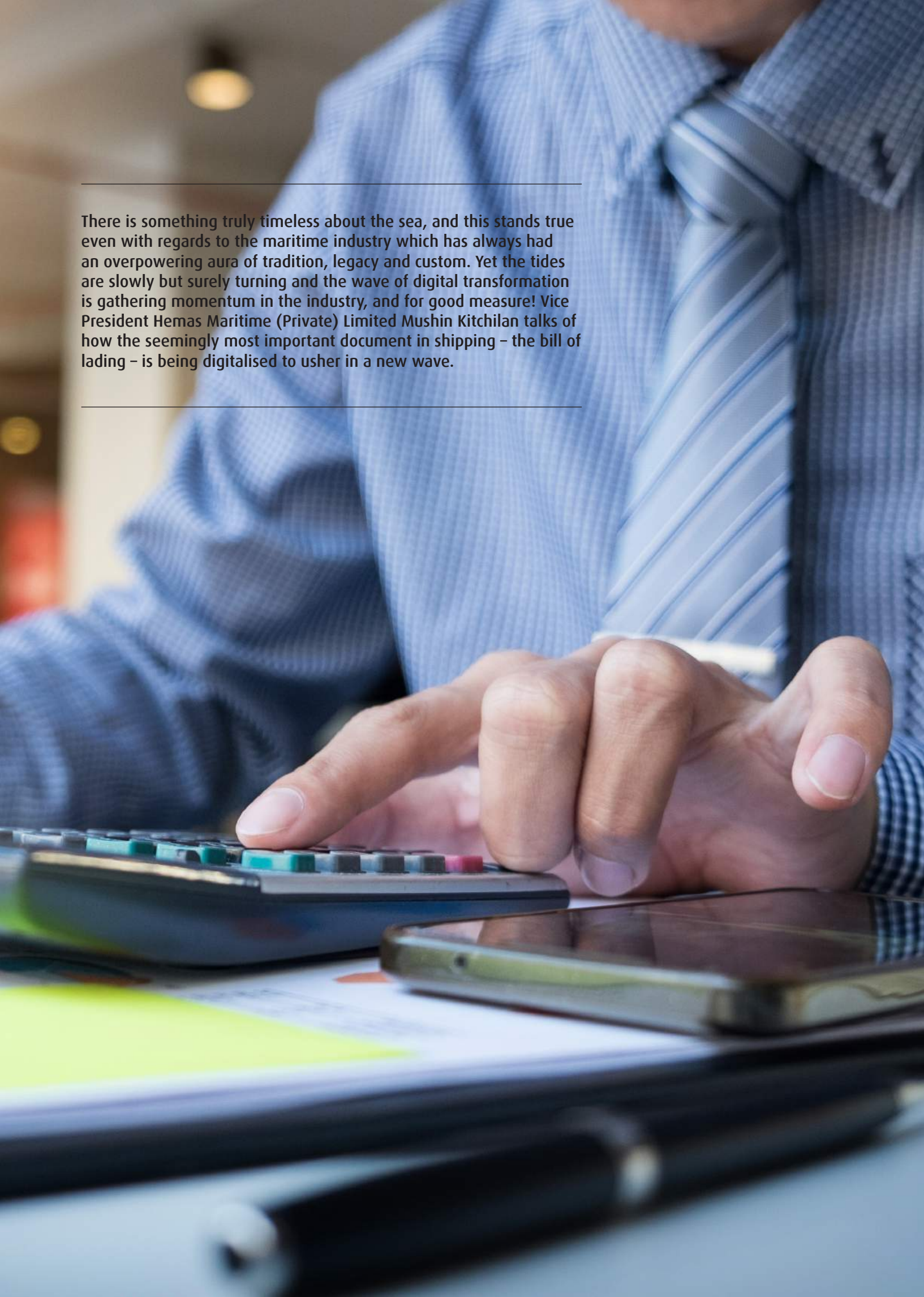


By : Mushin Kitchilan

Having started his career in finance, Mushin has gathered a gamut of experience in finance across several segments of the transportation industry covering aviation, logistics and maritime at Hemas. In 2017, he made a change in his career by moving into a commercial role and is currently working as the Vice President for Hemas Maritime (Pvt) Ltd.

Mushin holds an MBA from the University of Wales and is an Associate Chartered Management Accountant (UK). He is also an alumni of the Indian Institute of Management (Bangalore).

There is something truly timeless about the sea, and this stands true even with regards to the maritime industry which has always had an overpowering aura of tradition, legacy and custom. Yet the tides are slowly but surely turning and the wave of digital transformation is gathering momentum in the industry, and for good measure! Vice President Hemas Maritime (Private) Limited Mushin Kitchilan talks of how the seemingly most important document in shipping – the bill of lading – is being digitalised to usher in a new wave.



Global trade is moving increasingly fast, fuelled by globalised consumerism and complemented by smart ships and faster vessels dominating the seas.

Although considered to be one of the oldest industries in the history of mankind, the maritime industry has not embraced digitalisation in the same speed as its air and land counterparts. Often shippers, especially those with less-than-truckload (LTL) shipments, find themselves drowned in a sea of documentation, mostly centred around the all-powerful 'Bill of Lading.'

Tracing its origins to the times of the Romans, the bill of lading is considered to be the most important document when shipping goods from port A to B. Shippers generate the bill of lading – a legally binding document which more or less ensures that the right cargo is received, dispatched and delivered to the right recipient, in the right way, at the right time, in the right state followed by the right payment.

While paper bills are the industry norm, it is often the cause for inefficiencies, fraud, unwanted costs and difficulties to all parties involved. As per protocol, a single maritime cargo transaction calls for multiple sets of the original bill of lading which is costly to generate, troublesome to streamline, difficult to collaborate with stakeholders and is also environmentally unsustainable.

While bills are often printed manually or with manual input, there are countless errors that take place such as a particular freight classification not being included, insufficient or inaccurate information, last minute changes being made resulting in illegible documents with human errors and sometimes even deliberate malpractice.

Global trade is moving increasingly fast, fuelled by globalised consumerism and complemented by smart ships and faster vessels dominating the seas. And the long paper trail stained with traditional bureaucratic processes that follows cargo is often the reason for the disconnect in speed in global trade and that of trade documents.

So it is not unusual for shippers to face instances when the bill of lading arrives later than the vessel, resulting in delays, increased costs and overall hassle where carriers cannot release goods from the ship calling the need for payment of high demurrage fees.

However, although it appears that all is at sea, paper bills of lading are still the name of the game – a game which is quickly changing the rules!

The paperless revolution has overtaken many industries, out of which the courier sector has successfully outshined many others for many years now. Customers of leading courier companies have always enjoyed the speedy, hassle-free service of sending parcels from one place to another, with the added benefit of being able to track their package along its route. Given the fundamental similarity in operations between courier firms and shipping companies, except for the fact that one involves high frequency while the other deals with high volumes, it is wise for the maritime trade industry to use the other as a benchmark – at least in terms of documentation efficiency and information accessibility.

Thankfully, technologies such as cloud computing and more recently block chain are rocking the boat and paving the way for paperless services, out of which the digitalisation of the traditional bill of lading probably looks the most promising if not revolutionary.

Transforming this seemingly unchangeable piece of document will require a lot of muscle memory being erased and redefined. However, an electronic bill of lading will not only replace the traditional document by ensuring its core functions as a receipt, evidence of contract of carriage and document of title, it will also ensure that all its original functionalities, and more, will be carried out seamlessly incurring just a fraction of the cost and in real time.

A paperless bill of lading, via block chain, cloud computing or any other form of shared internet services, will also allow authorised reviews and changes to be made to the document whilst keeping all stakeholders informed, and will speed up cash-flow in terms of banking transactions. With all parties – freight forwarders, importers, exporters, banks, shippers, shipping agents and even regulatory authorities – connected to a single document or system, approvals are faster, acknowledgements are inherent, payments are seamless and transparency is innate. With in-built proof of authenticity, electronic bills of lading also eliminate the need for repetitive checks at various points of the transaction. And with shippers being able to experience real-time visibility from carriers on the status of their cargo, there is value addition as well.

The benefits are numerous and sustainable when this important prop of transportation is digitised: increased transparency, mitigated risk of documentary fraud, reduced dependency on banking operations, higher traceability, increased data privacy (since data is only shared among authorised parties via cryptography or simple log-ins), possibility of having smart contracts that self-execute (and which will eventually reevaluate the need for letters of credit) and ultimate adoption of the internet of things (IoT) in maritime trade.

When all relevant information pertaining to a shipment is made available online, shippers and consignees can also plan ahead – roadmaps can be designed to assign drivers of container vehicles based on the flow of cargo, goods can be released quickly and customers can be ensured of early delivery, thus creating sustainable value down the supply chain. In addition to the parties directly involved in the transaction, other

Thankfully, technologies such as cloud computing and more recently block chain are rocking the boat and paving the way for paperless services

stakeholders like ports and terminals too will benefit from this sort of digitalisation which will deliver greater efficiency, safety and security of port operations.

Although relatively new and possibly deemed a threat to 'the way things are done,' it won't be long before electronic bills of lading are mandatory. Closer to home, the Maritime and Port Authority of Singapore, Singapore Customs and the Singapore Shipping Association recently signed an MOU to facilitate the digitalisation of trade and maritime documentation, which will be made possible via a block chain based system named TradeTrust. While this is expected to reduce ships' waiting times and mitigate fraud risks, Singapore also expects to increase transparency and accessibility of information when container ships call at the harbour.

Identifying the benefits of digitalisation to its operations and customers, Evergreen Line launched paperless bills of lading in partnership with Bolero International. The trade finance digitisation solutions provider's technology will be integrated with Evergreen's digital portal ShipmentLink to generate i-B/L (intelligent Bill of Lading) and i-Dispatch. The rapid issuance of these information will be an advantage for the company's shippers, especially concerning short-sea shipments.

The future is bright for the maritime trade industry with robotics, automation, artificial intelligence and IoT bringing in smart ships, intelligent cargo tracking and a shipload of technologies to revolutionise the industry. Switching to electronic bills of lading looks like a tiny yet potent ripple in the next big wave to hit the shipping industry, so it's time to get on board!



A photograph of a container yard with stacks of colorful shipping containers (red, blue, yellow, green) under a cloudy sky. The containers are stacked in rows, and the ground is gravel. The sky is filled with white and grey clouds, and the overall lighting is somewhat dim, suggesting an overcast day.

**An Algorithm to Reduce
Container Reposition
Cost through**

**VIRTUAL
CONTAINER
YARD**



By Hansa Edirisinghe

Virtual container yard

Container inventory imbalance causes a substantial cost to carriers amounting to twenty two percent in the overall cost structure of containers. The most popular mechanism to overcome this problem is the repositioning of empty containers from the idle location to other locations where they are in demand. Also, there is no commonly accepted standard system to minimize the idle time of empty containers at storage. The virtual container yard (VCY) is a novel strategy underpinning the container interchange between carriers that could substantially reduce this ever-increasing container empty repositioning cost. And it ensures maintaining a balanced container inventory in a port through interchange

between carriers. The VCY became a popular topic in the literature in the current decade as the alternative methods such as foldable containers did not prove expected results. This paper considers the operationalization of the VCY through the context of computing and information communication technology (ICT).

Although container interchange is not yet a popular mechanism, shipping lines used to interchange their ship space (slots) since last three decades. When CSL realized that they should collaborate to fill their ships they formed strategic alliances, but it took considerable time to form shipping alliances and exchange slots. Slot

exchange became a buzz word in the container shipping industry years later after the economic benefits it offered were realized and understood. However, since the container exchange is perceived as a complicated mechanism the decision to exchange containers needs a serious evaluation of its pros and cons in every individual case. This obviously involves many decision parameters. Therefore, the authors believe that ICT could bridge this industry gap and facilitate most effective and economical decision to exchange containers. Accordingly, his paper discusses the possibility of deriving a VCY solution through an algorithm.

The concept of algorithm

Algorithms have been used to aid decision-making for centuries and pre-date computers. Algorithms need data, and their effectiveness and value tend to increase as more data are used and as more datasets are brought together. In this scenario, there is no one correct solution, but there is a best possible solution, depending on what you want to achieve. Also, there are multiple ways to approach the problem, based on what strategy you choose to have for your game play. Think for a moment about how an organization makes a decision. First come the facts, the data that will inform the decision. Using these facts, someone formulates alternative courses of action and evaluates them according to agreed-on criteria. The decision maker then chooses the best alternative, and the organization commits itself to action. Today, an algorithm can assemble many more facts about the accounts than any human being could easily process namely, lengthy payment histories, extensive demographic data, and so on. Using these facts, it can separate the accounts into simple categories, say red-yellow-green. In

the same manner VCY uses present and forecasted container inventories to develop an algorithm and solve the container interchange problem.

To better understand the concept of algorithm, consider how we solve the VCY problem manually. We collect data of those carriers who have excess containers (offeror) and those with deficit inventories (offeree).

Presume line D and line E operating in two ports/locations. Line D has excess containers only and line E has deficit inventory. For example line D in port 1 has excess 100x20' and 50x40' and offers 50x20' and 50x40' (150 TEUS in total) that is required by line E. Line E reciprocally offer 40x20' and 55x40' (150 TEUS in total) that is required by line D at port 2. The financial benefits to lines D and E can be calculated on the basis that line D need not export 50X 20' and 50X40 empties from port 1 while line E need not import same quantity from elsewhere to port 1. Similarly, line E need not export 40X 20' and 55X40 (150 TEUS) empties from port 2 while line D need not import same quantity from elsewhere to port 2. However, it is to

be noted that various operational costs associated with a 40' are not always the double of the cost incurred by a 20'. The feasibility of interchange should be calculated based on consolidated financial cost and consideration of non-financial benefits such as marketing advantages as well. It is clear from this simple example that it is unrealistic to solve this problem manually and derive at the most economical decision. Therefore, we deal with some simple data and then see if we can derive an algorithm from that process. However, this does not consider the distance the containers will be carried after borrowing. We try to solve a smaller part or an easier version of the problem and then work to conquer the entire problem. Many problems are naturally solved by solving one piece at a time, but sometimes you need to figure out how the problem can be simplified. Search through common data structures and algorithms that you know and see if any of them could be "plugged-in" to solve the problem. It's a "Solution Looking for a Problem"

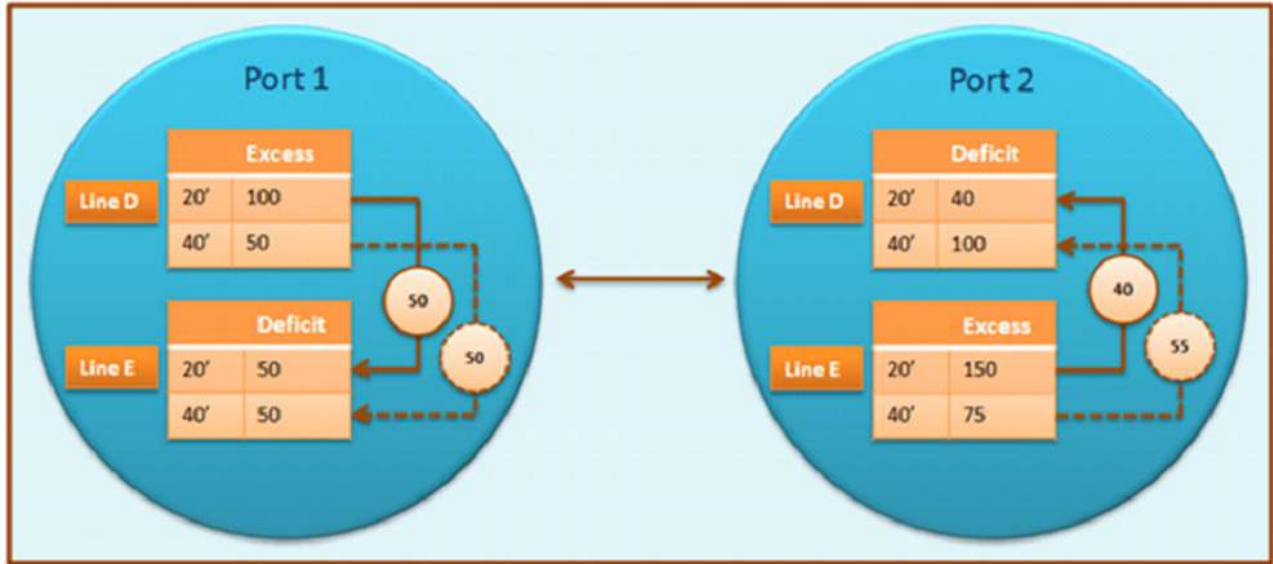


Fig 01: Inter-port VCY Model (Source: International Journal of Logistics Systems and Management)

VCY Model

According to problem scenario, there are several important data elements were identified as the variables for the proposing algorithm. These elements are,

- Sea ports around the world and the shipping lines provide services to those respective seaports/country.
- Current stock of different size (i.e. 20', 40', 45') and different types (i.e. GP, HC, OT, FR, FB) containers of each shipping line and each port/country who wish to join VCY.
- Estimated container inventory in each port (type and size wise) as per annual stock forecast of lines who wish to join VCY
- Transit time in number of days of port pairs Offered by each shipping line

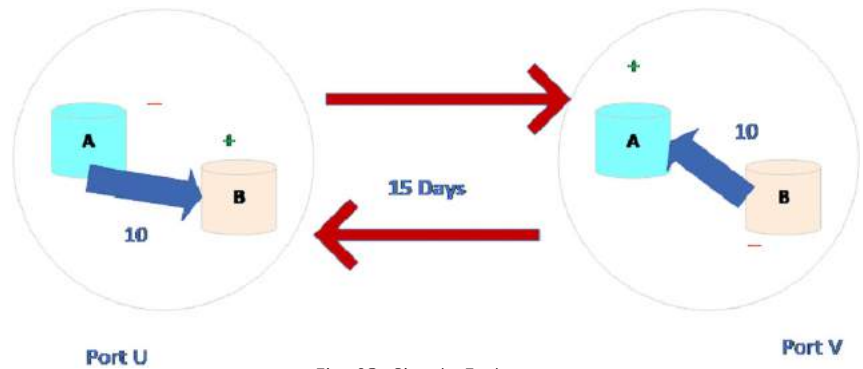


Fig 02: Simple Exchange

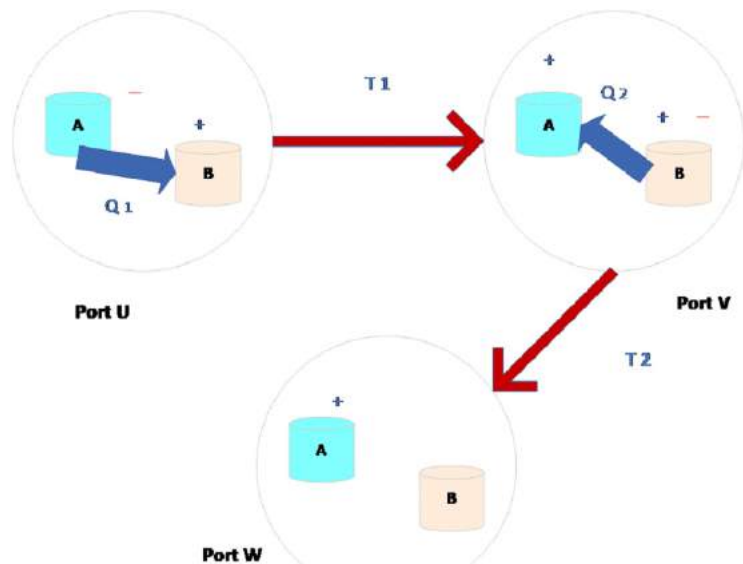


Fig 03: Virtual Container Yard

Scenario 1: A and B Lines in the port U and V (Figure 02)

We have already recorded the current container stock of Line A in both port U and V. Same data recorded for Line

B as well. The transit time from U to V was recorded as 15 days. We assume that Line A in port U has 10x20'GP containers, Line B in port V also has 10x20'GP containers and need to ship 10x20' container from U to V and vice versa. This is the simplest scenario in the VCY that we must run through the proposing algorithm because of the transit time does not matter in this scenario. Let's look at more complex situation.

Scenario 2: A and B Lines in the port U, V and W

We have already recorded the current container stock of Line A in both port U, V and W. Same data recorded for Line B as well. The transit time from U to V was recorded as T1 and the transit time from V to W was recorded as T2. We assume that Line A in port U has

Q1x20'GP containers and Line B in port V also has Q2 x20'GP containers and B need to ship Q1 from U to V. Then the Line A in V has Q2 which need to be shipped to W. Accordingly, it could form two scenarios. i.e. if $T1=T2$ and if $T1 \leftarrow T2$. If the quantity from port V to W is same ($Q1=Q2$), then it may form one scenario but if the quantity is different (i.e. $Q1 \leftarrow Q2$) it will form multiple scenarios. Similarly, it could form many scenarios under various combinations (i.e. Q3-n vs T3-n) and with more data elements and values.

The VCY demands a unit of measurement to determine its benefits because the exchange is not one-time activity but a continuous process. Once the first exchange is affected the offeror may request the offeree to reciprocate the similar benefits. This is because it is always not possible to have equal benefits are exchanged between offeror

and offeree. This is one of the reasons why the ad-hoc container exchange does not materialize. However, if the benefits can be measured it is not necessary to exchange the benefits in a single activity. It can be carried forward like we do with money. Each carrier may do multiple exchanges and reciprocate at a different time or times, in the same port or in different ports. For example, carrier A offers 10 TEUs (Twenty Equivalent Units) to carrier B who will return them after 15 days in a different port. Then the overall benefit to B is 150 TEU/Days. Simultaneously, carrier B offers 25TEUs to carrier A who will return them in 4 days in an adjunct port and another 5 TEUs that will be returned after 10 days in another port. The total transaction could be completed as A reciprocally gets 150TEU/Days.

Process of determining the Capacity of exchange:

Records Database:

Keeps track of all relevant data related to the liners, exchanges, capacity and unique and general factors influencing the calculation of unit of measurement.

Custom Factors:

The factors that are unique by the means of geographical, legal, technical and monetary factors for different liner services.

Process of VCY

Assumptions:

- Capacity related factors are preloaded to the system by its relevant stakeholders
- All factors are fed and managed to ensure accuracy by the relevant user / Stakeholder (Liner Service)
- The liner services agreed to use the system has the advantage

of enjoying the benefits of the outcome by using the system.

- It is assumed that the exchange occurs between the pre-agreed two parties.
- If not, the system is expected to propose the benefits to the possible beneficiary.
- The sole purpose is the 'Competitive Advantage' for the parties using the system will not be used to gain any unethical benefits for anyone interacting with the system.

The new decision procedures are likely to require investments in technology for example, software that embeds rules and new decision logic into the workflow systems. They'll also require redesigning people's roles to fit with the new process. The possible need for new skills could mean extensive retraining and may require hiring new talent altogether. There are many different

types of algorithms, with differing functions, and associated issues of bias and transparency. Transparency must be a key underpinning for algorithm accountability. However, literature suggests barriers to a collaborative approach by carriers as confidentiality of information; regulatory, competition and social issues; and business philosophy of firms (Edirisinghe, et al., 2015). Today, many decisions that could be made by human beings (from interpreting medical images to recommending books or movies) can now be made by computer algorithms with advanced analytic capabilities and access to huge stores of data. The growing prevalence of these algorithms has led to widespread concerns about their impact on those who are affected by decisions they make. To proponents, these systems promise to increase accuracy and reduce human bias in important decisions. But others worry that many of these systems amount to "weapons of math destruction" that simply reinforce existing biases

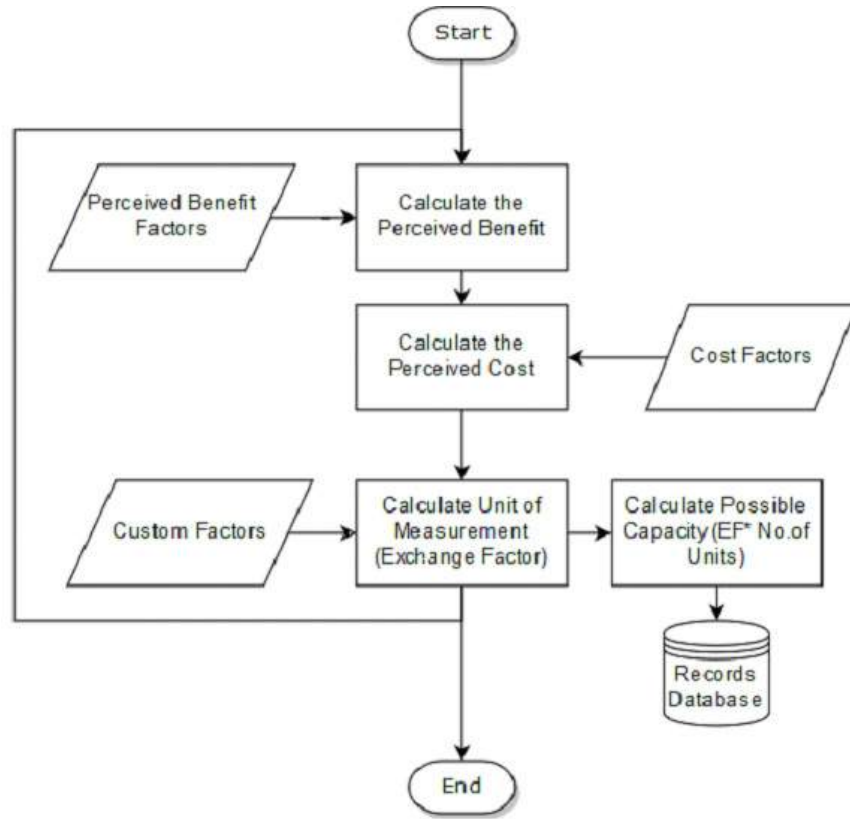


Fig: 04 Process of determining the Capacity of exchange

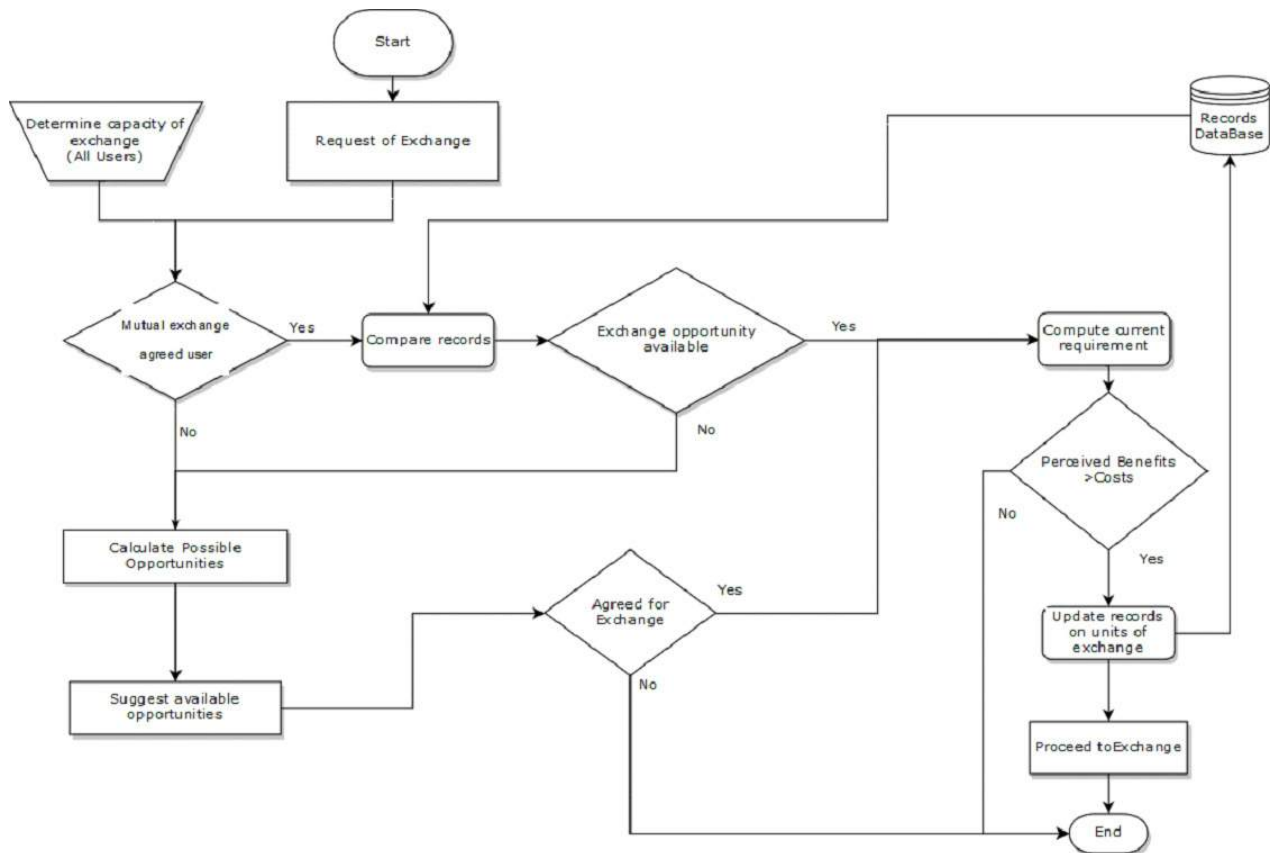


Fig: 05: Process of virtual container yard

and disparities under the guise of algorithmic neutrality.

The implementation of the virtual container yard will be influenced by six key factors, namely complexity, attitudes, stakeholders, legal, organization and decision. Since the virtual container yard could reduce overall shipping costs, it is vital to examine the carriers' perception of this concept. Container shipping lines (CSL) interchange ship space (slots) to gain the advantage of economies of

scale. However, they do not interchange containers at present according to industry sources. Mutual agreements exist between CSL for collaborative activities and these agreements cover various activities, inter alia, container interchange; although it does not happen. Carriers may be interested if the benefits of exchange are quantified in financial terms. One way to look at this requirement is to measure the cost of exchange as perceived by the individual carrier. The study may develop potential parameters

that carriers consider as costs.

Thereafter any shipping line may be able to calculate own cost of exchange independently. Since each carrier has their own costing, operational, and marketing strategies the values of these parameters may be unique to each carrier. This needs a unit of measurement to quantify the individual cost. Similarly, the lines may look at the actual benefits that they derive from the exchange. If the quantified financial benefits supersede the cost of exchange the decision is very clear.

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Hansa Edirisinghe obtained his MSc in Information Technology from the University of Cardiff Metropolitan, UK after completing BSc (Hons.) in Computing awarded by the University of Portsmouth, UK. He presently reading for his Master of Philosophy in ICT offered by Sri Lanka Institute of Information Technology (SLIIT). He carries ten years industry experience in computing and ICT and presently attached to the Board of Investment (BoI) Sri Lanka as information Technology officer.

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An underestimated letter of guarantee

A South American port agent acted for a ship that discharged a bulk cargo at his port. There was a cargo shortage in an amount that exceeded the customs allowance, which meant that there would be customs duty and possibly a fine to pay which is common in South America under local law the agent has a joint and several liability with the carrier for customs claims. Therefore, before the ship sailed, the agent took the precaution of obtaining a letter of guarantee from the ship owner's P&I Club. In due course, the customs authorities imposed customs claims in the amount of US\$ 113,250. The P&I Club appointed lawyers to defend the customs claim, but lost in court some six years later. In the meantime the ship had been sold, and the P&I Club therefore dis-instructed the lawyer and was only willing to contribute the amount of the letter of guarantee to the settlement. Unfortunately, the agent had underestimated the potential claim, and had only obtained a letter of guarantee for US\$ 63,000. In view of the lengthy legal proceedings, the customs authorities had also added interest of US\$ 43,314. This meant that the agent was found liable for the additional US\$ 50,250 not covered by the P&I Club letter of guarantee plus the interest - a total of US\$ 93,564. This amount was reimbursed by ITIC.

February is the shortest month

Ship broker fixed a vessel for an initial period of 3 months with subsequent optional periods of 3 months. The optional periods were declarable 30 days prior to expiry of the preceding period. The charterer was a regular client of the broker and the broker kept track of such options for them. Unfortunately when counting back to calculate when the notice was due the broker overlooked the effect of February only having 28 days. The notice was given late. The owner had the right to reject the option and either ask the charterer to pay more or fix the vessel elsewhere. On this occasion the owners however waived their rights and continued the fixture at the existing rate.

ITIC sees many claims which involve time – whether it be calculating time, or missing time bars. You should ensure that you have systems in place to avoid being involved in these types of dispute.

The forgotten tug costs

A Scandinavian port agent was asked by the owners of a ship to provide a proforma disbursement account for a call at their port. When the final disbursement account was sent to the owners, they questioned the fact that it included a charge of US\$ 17,500 for tugs that had not been part of the proforma disbursement account. The original proforma disbursement account was used by the owners when calculating the rate required for the fixture, which meant that the owners had not allowed for the tug charges. The owners claimed the tug charges from the port agent. Although the owners were regular callers at the port and ought to have realised that tugs were required, they claimed to have only read the bottom line when negotiating the fixture and the agent's omission had therefore caused them a loss.

A protected password

The clearance of import containers discharged at a Saudi Arabian port was delayed by two months due to the local ship agent's inability to submit the import manifest in respect of the containers and cargo to the Saudi customs authority via their SAUDI ELECTRONIC DATA INFORMATION (SEDI) system. The agent was unable to input details of the cargo into the SEDI system because only one of their employees had access to this system via a unique password, and this employee had left the company. When the employee left the company he had handed details of the password to the HR department, who had

misplaced it, thereby causing the delay. The delay in delivery resulted in additional port storage costs of almost US\$ 30,000. ITIC reimbursed this amount.

Agency appointment agreement

FONASBA and BIMCO published in 2017 a new agreement for use by ship agents. The agreement is intended to cover one-off port calls and sets out the parties' obligations in a short and simple way. ITIC's claims director, Andrew Jamieson, was a member of the committee that produced the document. At a webinar publicising the agreement, Andrew commented that while many agency appointments were casual and concluded either verbally or more usually by a brief exchange of emails ITIC had seen owners imposing written terms. The difficulty with these documents is that they often were adapted from general service provider agreements and so did not deal with the specific issues of a port call. Alternatively, they were unreasonably onerous for the ship agent. This newer agreement, which is the first to specifically address one-off port calls, was drafted with input from both ship agents and owners. It therefore provides a balanced approach to this type of business.

The agreement wording can be downloaded from ITIC's website:

<https://www.itic-insure.com/knowledgezone/article/itic-circular-fonasbaand-bimco-launch-new-agencyappointment-agreement-136763/>

Turkish trouble

The Turkish office of an international agency group was appointed to handle a ship's call at their local port. The owner was an existing customer of the group but had not called at that Turkish port before. Turkish regulations prohibit any vessel directly or indirectly related to the Republic of Cyprus from calling at Turkish ports. In the agent's pre-arrival messages to both owners and charterers they mentioned that anything linking the vessel to Cyprus could lead to the ship not being allowed to berth. In spite of the agent's express warning to their principal a document was sent to the agent showing the address of the Panamanian registered owning company as being c/o a company in Cyprus. The agent failed to notice the address and the documentation was forwarded to the authorities. The vessel was not allowed to berth. The agent's position was that the owners were warned about the embargo of all things Cypriot, and failed to take the necessary action. The owner claimed the agent should have carefully reviewed the document. The owner deducted their alleged losses from other sums due to the agency group. Ultimately the owner told the agent that they would accept 50% responsibility. This still left the agency group with a shortfall of US\$50,000 which was reimbursed by ITIC.

Not so peachy

A clerical error by a ship agent meant that the temperature on a reefer container, carrying a shipment of peaches, was set at 5.5C instead of 0.5C. The shipping line passed the cargo claim of US\$59,000 to their agent. The agent settled the claim and was reimbursed by ITIC.

ITIC frequently handles claims involving erroneous temperature settings on reefer containers.

All in the timing

A ship agent was advised by the local pilots' association that ships arriving or departing the port needed to give two hours' notice for pilot services instead of one. Unfortunately, shortly after the change came into effect, the agent overlooked the new requirement. As a result there was no pilot available for a ship arriving at the port under their agency. The vessel missed its berth and was delayed by 2 days. The agent received a claim of just under US\$50,000, which was reimbursed by ITIC.



IS LNG THE RIGHT SOLUTION?

**CHANNELIZING THE
PROSPECTIVE POTENTIAL OF
GLOBAL NATURAL GAS RESERVES
IN ECONOMICALLY VIABLE
DIRECTIONS**



Dr. RANALI PERERA

PETROLEUM ANALYST

PETROLEUM RESOURCES DEVELOPMENT SECRETARIAT

GOVERNMENT OF SRI LANKA

Having worked for the World Bank (Urban Unit) on several complex tasks and presently employed as a Petroleum Analyst at the Petroleum Resources Development Secretariat (GoSL), the international exposure I have gained has greatly motivated me to further focus my career interests in the direction of research and analytical work. Such world class exposure and first hand experiences gained, have undoubtedly made me move in search of opportunities, where I could contribute to tasks with my expertise and knowledge while also continuing to learn about new sectors and subjects. Having obtained my basic degree in Business Management from the University of Bangalore (Specialisation; International Business) and my MBA in International Trade and Logistics from the Post Graduate Institute of Management, affiliated to Colombo and Canberra Universities, in 2017 I was also able to successfully complete my PhD. in Economics (Trade Finance) at the University of Colombo, under a research fellowship awarded by the Commonwealth Fellowship Plan.

As a career oriented individual interested in research work, I often involve myself in work that requires analytical thinking which eventually facilitates the formulation of new strategies, policies while bringing to light new ideas and suggestions, where change towards betterment is required. My approach towards taking up new and challenging work related tasks is always very positive and dynamic. I look at every experience that comes my way as a new learning experience, which makes me observe things, analyse and eventually produce my findings with the ultimate intention of contributing something new, something different in any area of relevant work. My expertise and my level of education often play a vital role in my area of work and my career path and the international exposure I look for in every task I take up, I define as one important platform that complements my personality and career interests. The commitment with which I perform each task entrusted to me, has enabled me in gaining international recognition as one amongst the most influential officials in the Global Energy Sector.

The global energy sector at present is not merely witnessing varied phases of growth and development, yet is experiencing a transition where diversification has emerged as a key component, nations are rapidly initiating efforts to infuse into their long-term energy production and consumption plans. The accelerated demand raised by the global communities for the consumption of various sources of energy over the years, has experienced dynamic changes both by region and by sector. Furthermore, the addition of unconventional sources to the quantum of conventional sources of energy that were commonly used, has shifted the patterns of energy usage to move along a more efficient and economical consumption pathway.

Estimates derived conclude that the global energy mix at present is predominantly composed of conventional fossil fuel sources such as Oil, Coal and Gas, while a significant growth can also be observed in the use of renewable energy sources as an alternative, of which nations are keenly weighing the prospects. Nevertheless the upward trends the growth in demand projects for the use of energy implies that, sufficient volumes of proved reserves of energy should be in place enabling the right management of both supply and demand. However the proved to production ratio values when assessed individually indicate that Coal (109 year), Oil (53 years) and Natural Gas (56 years) are the primary sources of energy having substantial quantities of discovered commercial reserves, that could sufficiently meet the demand and supply intake.

As observed by the U. S. Energy Information Administration (EIA), both energy production and consumption patterns may show a gradual tilt towards the use of certain sources in particular, the outcome of which will raise the need to diversify the global energy mix. It has further been anticipated that by 2035, the global energy consumption will rise by 41%, while fossil fuels will continue to supply nearly 80% of the world's energy use by 2035. Projections also indicate that

The global energy consumption will rise by 41%, while fossil fuels will continue to supply nearly 80% of the world's energy use by 2035.

natural gas shall become the fastest growing fossil fuel and the use of oil may only present a slow acceleration. Coal consumption on the other hand, may climb up to 65% of the total energy demand by 2035. The demand for renewable energy too would be able to keep up the pace and continue to grow at 2.5 % per year, opening doors to welcome the entry of the use of non-conventional fossil fuel sources.

Questions may still remain unanswered to learn the impactful outcome the evolving nature and culture of the global energy sector would offer, to help one in obtaining an insightful glimpse of what determinants would reshape the future energy mix. The enforcement of anti-emission policies to curtail the use of green house gases, has shed light on the need to transform and re-define the global mandate for energy production. Therefore as the cleanest source of energy Natural Gas has showcased beneficial traits and has become instrumental in generating interest amongst the global communities, to begin availing the advantages of its myriad uses.

Therefore if Natural Gas usage is expected to unfold a futuristic breakthrough in the global energy domain, from a general perspective one may contemplate upon the thought raising the question "Why Liquefied Natural Gas (LNG)". When speaking of LNG, it becomes vital to address the fundamentals of natural gas applications. While natural gas remains a primary source of energy or hydrocarbon, LNG has been identified as an energy sourcing technique which enables the conversion of Natural Gas

to a liquid form to serve the purposes of easy storage and transportation, which Natural Gas in a gaseous state may not be able to fulfill. Liquefied Natural Gas if defined rightly, is Natural Gas (predominantly methane, CH₄) that has been converted to a liquid form. It takes up about 1/600th the volume of natural gas in the gaseous state.

LNG technology makes Natural Gas available throughout the world, as Natural Gas has become abundantly available when considering the existence of discovered vast proved Natural Gas reserves globally. As LNG is lighter than air, non-toxic, non-corrosive and odorless, it has been identified as a safe form of fuel, the cost of which on average is 50% less than that of oil. Natural Gas has been recognised as environmentally friendly. Therefore, LNG produces up to 90% lower emissions, when compared with other fossil fuel sources. Such factors tied to LNG, are causing an unexpected proliferation of the consumption of LNG, where nations at large are re-shaping their production plans to widen their supply channels by introducing the use of LNG.

Nations at present are keenly observing the possibility of integrating the LNG value chain into their regular dissemination networks and investors attentively are attempting to capture growth opportunities, that will help them in consolidating a firm footing on the same platform. While nearly 30 proposed supply projects awaits the unveiling of its Final Investment Decision (FID), seven projects emerged as the top contenders to reach the FID by 2019, which may add around

82MMtpa to global liquefaction capacity. Nevertheless the global LNG capacity is expected to encounter approximately 16 MMtpa of excess supply capacity in 2019, exerting downward pressure on LNG prices and the structural LNG demand is set to reach 342MMtpa in 2019. Over supply may commence in 2019 and shall persist till 2022. However this excess capacity the industry would be able to absorb, by resorting to price responsive and weather driven demand management strategies.

By 2023 these patterns of demand and supply may gradually begin to run in reverse directions, when the structural demand would exceed the operational supply capacity. Much will depend on Northwest Europe and China is expected to drive the demand growth over 2020-21, supported by coal-to-gas switching in inner provinces, pipeline expansion operations and rising LNG bunkering demand. Asian nations such as Thailand, Pakistan and Bangladesh may play an important role beyond 2021, due to the rapid depletion of local gas reserves and the growing demand for gas consumption, which would be prevalent in power and industry sectors. Lower gas production in the UK, Netherlands and Norwegian, will increase the dependence on LNG imports from 2021. By the end of 2019, the global LNG export capacity would reach 358MMtpa, further facilitating the trade and exchange of LNG in all parts of the world.

LNG pricing mechanism is yet another factor, close attention should be paid to. As the initial investment for undertaking LNG projects would be relatively high, one may often wonder if considering such options would be a good enough investment decision to be made. Although LNG prices are mostly governed by forward contracting, since recently nations are making efforts to reap the advantages of settling down for spot pricing. While contracted LNG prices stayed in the range of 8\$/MMBtu in 2018, spot LNG prices were at a similar level as contracted LNG prices during 2018, indicating a well-balanced LNG market. However spot LNG prices during the first quarter of 2019 were at heavy discount to contracted

LNG is now available as a global commodity, with almost 20 countries exporting and 35 countries importing it as a commonly traded commodity.

LNG prices, even during the winter peak season, reflecting the beginning of a loose market. Nevertheless, current Japan Korea Market (JKM) futures prices suggest that, spot LNG prices will remain below contracted LNG prices until 2021. When spot pricing is gaining preference, market observations also indicate that buyers are beginning to seek new contract terms as competition increases.

Liquefaction allows the primary source of energy it uses to be channelized in various applicable directions. Primarily, LNG would serve beneficial when used for road transportation, off road applications, sea and water transportation, harbour services, off-grid applications and mobile electricity generation. Moreover its benefits could be availed by using it as a boiler fuel and as feed stock. However LNG as a marine fuel, is also expected to provide a future-fit solution for shipping companies and the associated supply chain. LNG is now becoming widely available as a global commodity, with almost 20 countries exporting and 35 countries importing it as a commonly traded commodity. It has a better emissions performance rate than conventional marine fuels. Furthermore LNG bunkering facilities are being built globally, as LNG is becoming economically viable to venture into commercial initiatives. There is growing shipper and consumer pressure for the use of more environmentally friendly logistics, in order to be able to meet the 2020 targets set by the International Maritime Organisation to bring down the use of sulfur in shipping operations. Therefore the global LNG fuelled shipping fleet is growing rapidly..

When LNG in the present context is attracting wide-spread attention, the need prevails to set milestones paving the way forward for sustaining its growth. As anticipated the market for LNG will begin to mature by 2023, when demand and supply patterns are able to attain a balance. Therefore developing the market to enable the fair flow of LNG trade, may have to be maneuvered primarily in several specific directions such as, capturing new business opportunities, managing rightly the associated economics and externalities, encouraging the improvement of technology development and supporting the undertaking of subject specific policy formulation to promote LNG based trade. As LNG markets continue to mature, the LNG based activities will begin to diversify and external factors affecting the markets will eventually drive forward strategy initiatives. Furthermore old business models may have to be slightly altered, to allow the involvement of small companies in LNG based business activities. Presently although the market is occupied by large upstream operators and downstream companies that govern the LNG value chain, if the entry of small investors could be permitted, better gains could be secured by the sector, as the sphere of LNG business activities keep growing. Tapping rightly the hidden potential of the available resource base shall remain mandatory, to harness its yield. When liquefaction of Natural Gas has become a technique that helps in fulfilling this purpose, nations should be able to consider the associated positivity and welcome its applications.

An aerial photograph of a port area. In the foreground, a large, dark, rounded object, possibly a ship's hull or a large cargo container, is being pushed or pulled through shallow, rippling water. A tugboat is visible at the end of a long, narrow pier or channel, creating a large splash of white water. The background shows a wide expanse of land with various industrial structures, including cranes and buildings, under a bright blue sky with scattered white clouds. The overall scene depicts a busy port environment.

THE FUTURE
of **PORTS**
AND
SHIPPING *in*
SRI LANKA



An interview with

Mr. Kavan Ratnayaka *Chairman of Sri Lanka Ports Authority*

How does the milestone achievement of over 7 million TEUs in the Port of Colombo raise the bar in 2019?

While handling 7 million TEUs last year was a significant achievement and we celebrate the achievement, the management and team of the SLPA is clearly focused on the future. We must expedite decisions that are critical to the expansion of capacity and improvement of efficiency and services to our clients, so that the remarkable growth we have achieved in recent years is sustainable well into the future.

What are your views on the SL port being

positioned as the 11th best connectivity port in the world and the best connectivity port in South Asia? How can we improve in terms of world rankings?

If we continue to proceed with our initiatives to be a reliable partner, improve efficiency and give operational solutions in a timely manner we will be able to consolidate and improve our position as one of the "best connected" ports in the world.

Further, in order to serve our customers better all three terminals at the Colombo Port and the wider SLPA Team, Customs and Immigration should play as "One Port." This decision when adopted by all the teams will bring



We have allocated approximately a Billion Rupees for the project in 2019.

about a leap in service quality for the Colombo Port customers.

I will give you an example on the importance of "Team". The recent industrial action by Sri Lanka Customs was more damaging to our port business than the unfortunate events of Easter. So as a Community we need to be aware of all the people that constitute this "Team" and work holistically to ensure Sri Lanka and the Port of Colombo are seen as efficient, reliable partners.

Explain where Sri Lanka stands at this juncture with regard to the development of the East Container Terminal?

We have signed a Memorandum of Cooperation (MOC) with Japan and India pertaining to the development of the East Container Terminal (ECT). According to the MOC, the full ownership of the terminal lies with the SLPA and we will also own 51% of the Terminal Operating Company (TOC) that will be set up to handle operations. We are currently in discussions with Japan on the concessionary loan that will be granted for the development of ECT. A Joint Working Group will be formed to work out detailed arrangements relating to the MOC. We believe that the final agreement can be signed in another few months.

We hope to be operational with ECT by end of 2020. As you may be aware a ship to shore crane takes about 18 months to build, ship and install.

For Sri Lanka to retain its competitiveness as a Trans-shipment hub and with the lines upsizing their fleets, capacity needs to be added at a brisk pace. What plans does the SLPA have to increase capacity in Colombo?

The National Port Master Plan (NPMP),

A full-scale IT infrastructure drive is currently underway to transform Colombo into a Smart Port.

outlines a comprehensive 30-year plan to develop the capacity and efficiency of the Colombo Port based on business projections.

The plan includes the East Container Terminals (ECT I and II), the West Container Terminals (WCT I and II) and the JCT Modernization. By 2035 together with SAGT II Colombo should be ready for the projected business with a capacity of about 18 Million TEU's.

We have also started the feasibility studies required for the North Port Project. As envisaged currently North Port should be ready by 2040 and add another 10 Million TEU's.

How has technology and automation boosted the standing of SLPA?

A full-scale IT infrastructure drive is currently underway to transform Colombo into a Smart Port. We have allocated approximately a Billion Rupees for the project in 2019.

The smart port initiative will lay the groundwork for the longer-term transformation of all processes, which will touch everyone involved in the value chain. Once all the components are in place and working together we will be able to provide a level of service second to none in the world.

India has been heavily investing in ports. Will this be a threat to Colombo as these ports may attract more ships there and divert TS traffic away from Colombo?

From what we see, India is preparing its ports and transport sectors to facilitate huge export growth through newly developed industrial zones closer to its ports. I see amazing potential to serve the Indian and other South Asian markets as a value-adding partner.

That is why we have decided to expedite decision-making with regard to port expansion. Sri Lanka is positioned well in the connectivity index and has a minimum deviation from the major shipping routes. With the right decisions and determination, we can capitalize on our strengths and support the regions growth aspirations and trajectory.

What role do you expect the logistics and shipping industry to play in order to achieve the objective of maritime hub status?

Sri Lanka is positioned in the center of the Indian Ocean at the crossroads of international trade, making it ideally located to become a key regional logistics hub. Logistics sector will become more attractive through establishment of trade zones and accompanying policies and incentives. The government is working expeditiously in this regard appropriate trade policies and trade agreements. The private sector must come and make the correct investments now.

Value-added industries can transform Sri Lanka into an export-driven nation, making excellent use of its strategic geographical location. Also, Sri Lanka's position as the 11th best-connected port in the world is a major boon to the logistics industry. We must push ahead with new Logistics Concepts and be reliable, quick and nimble.

Taking all this into consideration, I believe the logistics and shipping industry is at the heart of our plans for maritime hub status. Can be done, in my lifetime!

Conventional cargo – does it have a significant place in your plan of things for the Port of Colombo?

Yes. Conventional cargo volumes are

on the decline, but we will serve this market and be ready to improve based on the demand. And here I must bring up the concept of multiple ports in Sri Lanka playing together to serve the markets that need us. Besides Colombo we have the Ports of Trincomalee, Galle, Hambantota, and Kankasanthurai (KKS) and each of these can play a conventional cargo role.

Trincomalee is well positioned to handle dry bulk cargo. With the government's plans for a development corridor and road connections, Trincomalee can emerge as an important dry bulk and general cargo port in the country.

SLPA is planning to extend the Ashroff Jetty in view of expanding the operational capacity. This involves the extension of existing of Ashroff Jetty by 50m in a transition depth of 13 to 14m. This will create a 300m long quay wall in a straight line to operate two ships less than 150m LOA to berth simultaneously. Construction of another 110m long quay wall in a straight line at a depth of 14m in alignment with the existing jetty is also being planned. This may later extend up to 300m with a backyard.

Do you see the railway's supplementing your efforts to grow port activity in the near future?

No. And we can't afford to wait. So the plan is to leverage the large investments the country has made in the road network. We see the Road Development Authority (RDA) as a reliable and committed partner. We can deliver on the countries logistics promise together with the RDA, until the Railways get's its act together.



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Green Wave
හැඳි

“Reforestation of Yagirala
Forest Reserve”

**Team SAGT pledges their support on
World Environment Day by planting
a tree for each member on one acre.**

#SAGT_Green_Wave #WorldEnvironmentDay2019 #beatairpollution




SAGT
PORT OF COLOMBO SRI LANKA



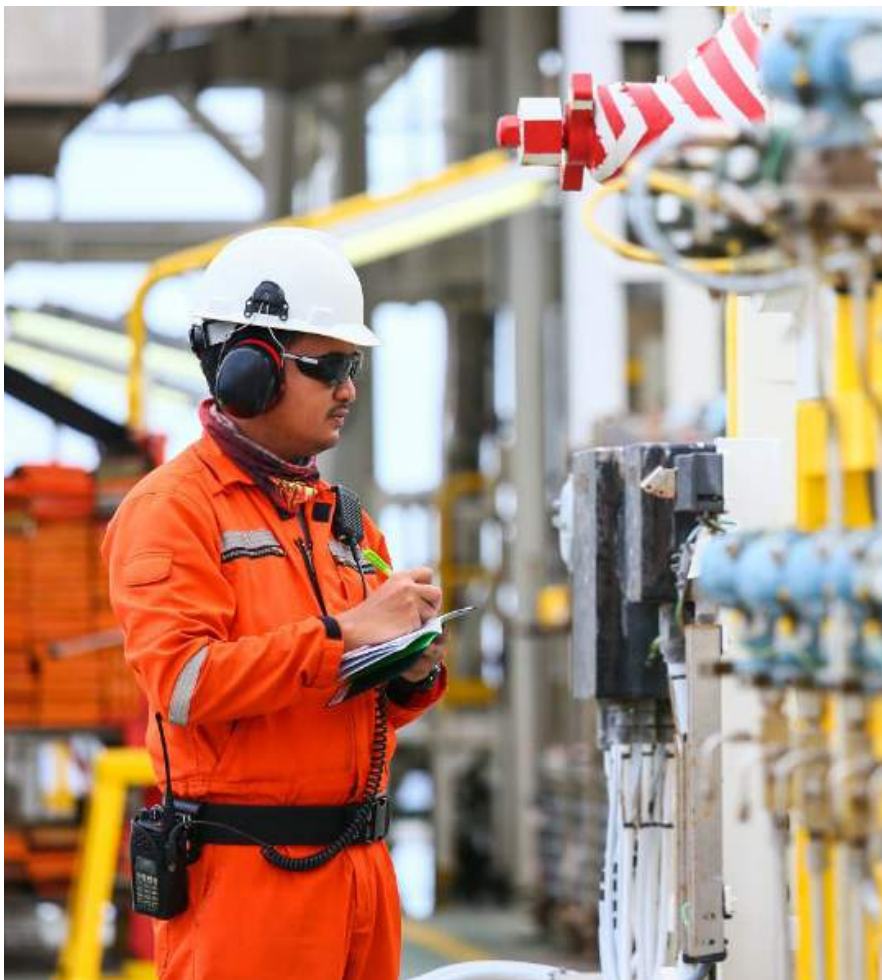
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CASA highlights the importance of Maritime Education and Training

Maritime Education and Training is a vital element in the journey to make Sri Lanka a maritime hub. Ceylon Association of Shipping Agents (CASA) has highlighted the importance of capacity building in the industry in numerous press articles and forums and have always encouraged its members to invest in human capital. This article will reflect on the contribution made by seafarers to the Sri Lankan Economy and the opportunities that exist in maritime education.



ITF Praises Sri Lankan Maritime Schools

A London based Inspector from the International Transport Federation (ITF) Mr. Steven Townsdale has commended the Sri Lankan Maritime schools and academies in Sri Lanka and has stated that the facilities available in Sri Lanka are of very high standard when compared to similar academies in the region. This was stated during a tour of local maritime facilities in March on the invitation of the National Union of Seafarers Sri Lanka (NUSS). He urged the government to take more steps to enhance this sector at the very earliest. He added that despite the high standards of the maritime academies in the country, the presence of Sri Lankan Seafarers on the international fleet was very much less in number when compared with those from other Asian countries.

CASA the voice of the shipping industry would like to congratulate its member academies for displaying these high standards and receiving commendation from the ITF.

Seafarer Contribution

In 2015 seafarers have contributed over \$200 million per annum to the economy. Seafarers attract a higher income than any other Sri Lankan expatriate staff in the same level. For example when a domestic aid brings in a monthly income of close to \$300, a seafarer at entry level would attract a monthly income close to \$1,000. At the rank of Officer and Captain the salary scale is significantly higher. Therefore, by promoting Sri Lanka as a hub for seafarer recruitment the economy can expect a higher contribution. Foreign exchange earnings, employment opportunities and increased domestic spending would have a profound impact to the Sri Lankan Economy. CASA has played a leading role, through its members, by engaging in training and development of seafarers, making them employable, and finding them employment opportunities.

Global outlook

The demand for seafarers will keep growing over the next 10 years with the growth of global trade. Expansion of the Panama Canal has also resulted in a demand for larger vessels which results in an increase in demand for seafarers. The Philippines has emerged as the biggest supplier of seafarers on international merchant ships followed by China, Indonesia, Russia and the Ukraine. A research report prepared by BIMCO (Baltic and International Maritime Council) says of the 1,647,500 seafarers, the Philippines is the leading supplier of ratings (low/semi-skilled maritime workforce).

However, there is a shortage of marine officers in the world and the shortage is expected to increase over time. The forecasted shortage of officers will grow from 16,500 in 2015 to 147,500 by 2025

The role of a seafarer has also changed over time. The adjustment in working practices from the 'command and control' system at sea to the more

Expansion of the Panama Canal has also resulted in a demand for larger vessels which results in an increase in demand for seafarers.

collaborative management style and the technological disruptions in the maritime sector would require the seafarer to be equipped with a different skill-set. For example, with the introduction of autonomous ships, ship navigation can happen ashore and will change the dynamics of the profession.

Seafarer training in Sri Lanka – opportunities and challenges

Sri Lankan employees are hailed globally for their work ethic and overall conduct, and therefore, Sri Lanka is preferred for talent sourcing. This is mainly due to the sound education system in the country, which promotes equal opportunity for education, and our unique culture, which has molded work ethics such as team work, reliability, dedication, honesty and integrity. This quality workforce is the greatest asset that should be capitalised by Sri Lanka.

CASA member-institutes engage in training and development of seafarers while complying with the standards of the International Maritime Organization (IMO), and therefore, is recognised internationally. These institutes are equipped with state of the art technologies such as marine simulators and the qualifications are regulated by the Merchant Shipping Secretariat of Sri Lanka.

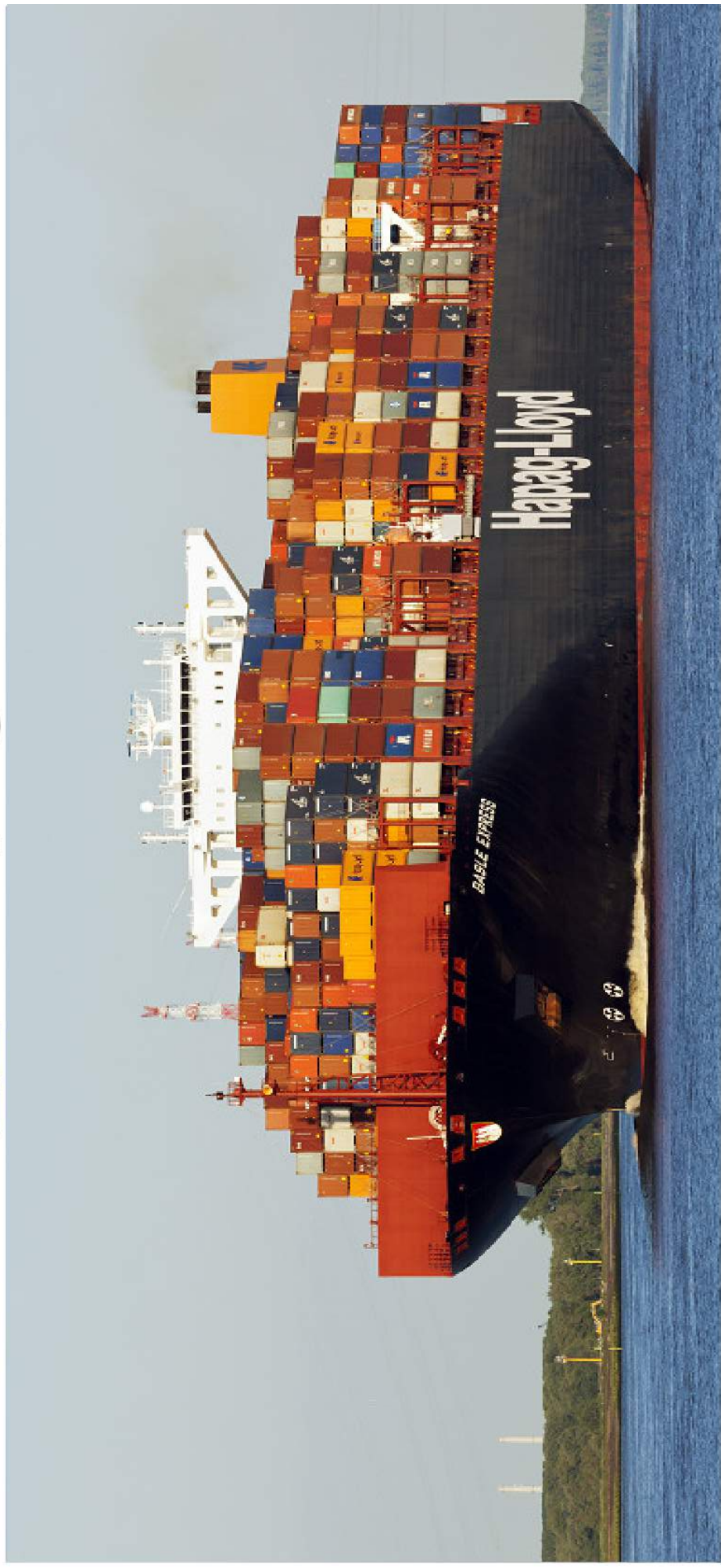
Government plays an active role in facilitation and enhancement of employment opportunities in foreign ships for Sri Lankan seafarers

and ensures their safety. With the ratification of the Maritime Labour Convention, the government will have to be committed to improving labour conditions for Sri Lankan seafarers.

It is important that consistency in policy is maintained by the government, as regular changes to syllabi, assessments, taxation, etc. will adversely affect seafarer training. Duration of seafarer training is relatively longer, and therefore, abrupt policy changes will not help the industry.

There's lot to learn from countries such as Philippines - the biggest supplier of seafarers. The Philippines government has approved legislature designed to ensure working and living conditions that are consistent with Philippine law and international maritime conventions. Seafarers have the right to safe and secure workplace that complies with safety standards; decent working and living conditions on board a ship; medical care, welfare measures and other forms of health and social protection; and fair terms and conditions of employment including salary commensurate to their rank, minimum number of working hours, and rest periods consistent with Philippine or international maritime conventions.

Regular consultation with all stakeholders including ship owners, institutes and unions will help Sri Lanka create a competitive edge in seafarer training and development. Building awareness among Sri Lankans about this lucrative occupation at school level would also attract a wider audience and enhance the economic contribution to the country.



Agents in Sri Lanka

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CASA Youngship open quiz

2019



The much awaited 2nd Annual CASA Youngship open quiz 2019 which was conducted by Youngship Sri Lanka in collaboration with the International quizzing association (SL branch) (IQA) which got underway on 8TH June 2019 at BMICH was a resounding success with the participation of 30 teams covering various industry sectors such as Logistics & Transportation, Liner Shipping, Banking & Financial Institutes, Educational Institutes, Independent Teams & other Commercial Establishments.

The quiz was an “Open Quiz” covering a wide range of topics including current affairs, international trade, sports, games, entertainment, history, science and technology, general knowledge and IQ.

The winner of the quiz was an independent team by the name of “Wizards” who walked away with a lucrative cash award of Rs 150,000 along with the Gold award, followed by another independent team “Invictus” who came as runners up bagging prize money of Rs. 75,000 along with Silver Award. The 3rd place was awarded to another individual team, “ACQC” who also walked away with prize money of Rs 50,000 and the Bronze award respectively.

Apart from the overall winners there was recognition for the respective sector/industry winners who walked away with a trophy and the winners are as follows.



Gold Winners



Silver Winners



Bronze Winners

- Other Commercial & Educational Establishments
 - Banking & Financial Institutes
 - Logistics & Transportation
 - Liner Shipping
 - Independent Teams
- Dialog Axiata
 - Seylan Bank
 - GAC Shipping Limited
 - MSC Lanka Pvt Ltd
 - Wizards



Chairman YoungShip



Project Chair YoungShip

Speaking about the event, the Quiz Master and the head of IQA Sri Lanka branch Mr. Ruwan Senanayake said “CASA Youngship open quiz 2019 has been receiving very positive comments from participants known to me about the excellent manner in which it was organized.” he also went on to say that “Hard work and dedication has really made this event a much talked about Quiz now “

The event was sponsored by Advantis Freight & CINEC Maritime Campus coming onboard as Gold Sponsors, South Asia Gateway Terminals (SAGT), Hemas Maritime coming in as the Silver-sponsors.

The awards and presentation ceremony was graced by the Additional Managing Director of SLPA, Mr. Upali De Zoyza, Chairman of CASA, Chairman of YoungShip, Executive Committee Members of both CASA and YoungShip and members of CASA and YoungShip.

The Ceylon Association of Shipping Agents (CASA) is the industry body representing Shipping Agency companies in Sri Lanka and has been the voice of the shipping industry since its inception in 1966. CASA has a total membership of over 130 Shipping Agency companies. CASA contributes regularly towards the formulation of National Maritime Policy initiatives in Sri Lanka and draws on the experience and expertise of its members who are Shipping Professionals.

YoungShip Sri Lanka formerly Young Shipping Professionals (YSP) of CASA, YoungShip Sri Lanka is part of Youngship International which was formed to be the voice for young people in the maritime industry and has won awards for promoting young entrepreneurs and for promoting young professionals. Headquartered in Norway, Youngship is present in 18 countries with a membership of over 3000. The Norway branch has a 350-strong membership and we are pleased announce that with support from CASA the Sri Lanka branch, the newest addition to the list now possesses a 250-strong membership.

We thank you all for your participation, support and the encouragement extended!

PIPER ALPHA and S.S.TITANIC

By Captain Chandra Godakanda Arachchi



S.S. Titanic was said to be unsinkable, similarly oil platform Piper Alpha owned by Occidental Petroleum was located 110 miles from Port of Aberdeen operated in extreme weather conditions most of the time during the year, was known as indestructible due to the sheer size of the structure. Sinking of S.S. Titanic is known as the maritime disaster of all time, disaster on large oil platform Piper Alpha with 226 crew on board in North Sea is said to be the deadliest off-shore oil platform disaster of all time with over seventy per cent of crew (more in percentage than Titanic) losing lives in the inferno followed by a series of explosions with some sections of 300 feet tall structure collapsing within three hours (Titanic took two hours and forty minutes to sink whereas Piper Alpha was destroyed in about the same time duration) becoming a flaming ball of twisted metal. Piper Alpha at its peak

was producing thirty thousand tonnes of oil per day, which was equivalent to ten per cent of British North Sea oil production. Whilst the shipping industry witnessed an unprecedented regulatory regime post grounding of Exxon Valdez in 1989 in Alaska causing a massive crude oil spill, similarly Piper Alpha disaster was instrumental in bringing about significant regulatory changes in the oil and gas industry in terms of safety improvement and managing "Permit to work" system. Piper Alpha which had been in production for twelve years from 1976, was built for oil production initially later modified for gas production as well. Piper Alpha was connected to a network of oil platforms (Claymore and Tartan). Almost all survivors from Piper Alpha had to jump into burning sea from a height about three hundred feet which required a lot of courage particularly jumping into oil burning sea. Survivors had to choose



At 2145 hrs, compressor B tripped and failed to restart despite of repeated attempts by the control room. Now there is another risk looming due to tripping the compressor...

between “burning to death” or jumping to burning sea from the height pretty much a quick choice between imminent death and probable death. So what happened on 06th July 1988. Here is the story in brief!

It was just another Summer night in North sea, 06th July, 1988. 226 crew on board Piper Alpha, the all important oil platform which produced over 30000 barrels of crude oil a day, a significant share of North Sea oil production was having another night shift with usual problems to deal with for the control room.

Piper Alpha had two gas pumps (centrifugal compressors) A & B to boost gas pressure for delivering gas to Flotta, an island terminal off Scotland. There had been two work permits issued during the day shift, one for pressure safety valve (PSV) servicing and the other for

overhauling compressor A, the work would have taken two weeks. Crew had removed the PSV for servicing and taken compressor A out of service only by isolating power. Crew could not complete servicing PSV as expected by 1800 hrs as expected and the engineers made the call to postpone reinstating the PSV until morning and fitted a blind flange (metal plate) to the flange where the PSV had been removed (probably not a rated flange). Overhauling compressor A had not begun during the day shift, which was noted in the work permit form. When the engineer arrived the control room to hand the permits, the supervisor had been busy, therefore he failed to inform that the PSV is out of service though he made notes on the permit form and returned two permits and knocked off. Unfortunately two permits got separated from one another in the control room. There could have been

many permits written even on the day due to a new gas line being fitted during weeks leading up to the disaster which required welding as well. Piper Alpha was not shut down for gas line installation. Critical aspect to note here is that nobody in the control room had the update of incomplete PSV work. In the mean time Diesel fire fighting pumps had been switched to “Manual” from “Auto” due to divers working as a control measure to prevent divers being sucked in case the fire pumps started in “AUTO” mode.

At 2145 hrs, compressor B tripped and failed to restart despite of repeated attempts by the control room. Now there is another risk looming due to tripping the compressor. In case not being able to get a compressor online within certain period of time, the platform run the risk of loosing gas pressure which is required to run the gas generator. Consequence of

ESD had shut down oil and gas production however oil in the separator continued to burn...

shutting down the gas generator is huge with platform shutting down including drilling with the likelihood of drill head getting stuck. Getting everything back online is a time consuming with a huge cost, therefore with this scenario in mind, the shift engineer traced the permit for compressor A and noticed that overhaul work had not begun but failed to realise PSV is out of service. Therefore at 2155 hrs, the supervisor assumed it is safe to start compressor A, ordered reinstating power and got it online. As the PSV was located about five metres above the compressor crew failed to notice the missing PSV. As the compressor started at 2157 hrs due to the sudden rise in pressure, gas started to leak from the blind flange. Huge quantity of gas leaking and gas alarms were going off in the control room continuously followed by an explosion. Supervisor immediately activated the emergency shut down (ESD) which shut off safety valves of huge oil and gas production risers of Piper Alpha from sea bed isolating Piper Alpha, however it appears that it did not shut down the connections to other network oil platforms. The explosion did rupture the fire walls in oil separator area which caused to start an oil fire.

It was believed at 2204 hrs that only two crew members had been killed due to the blast. There had been similar fires in certain other rigs but successfully fighting the fire. When the fire started fire fighting pumps should have started, unfortunately pumps had been switched

to "Manual". Two brave members took the decision to try and start the pumps manually unfortunately they were not successful also never seen again. At this stage emergency procedures simply collapsed, Rig Manager who was supposed to co-ordinate the emergency from radio room sent a distress message which was heard by Claymore and Tartan. No attempt was made to announce the distress message over the public address system. No one told crew what to do, crew as per the training received were supposed to muster at life boat deck and wait for instructions in case of emergency however the fire prevented them from reaching the muster point therefore over hundred crew waited in fireproof accommodation block beneath the helicopter pad and waited for helicopter rescue. However, wind was blowing the heavy smoke over the helicopter pad and it was impossible for the helicopter to land. Unfortunately accommodation block too gradually started to fill with smoke and even at this there was no attempt whatsoever to evacuate the crew to safety.

ESD had shut down oil and gas production however oil in the separator continued to burn, eventually burnt itself out with the fire extinguishing itself but even though Claymore heard the May Day, later witnessing the flames of Piper Alpha from a distance continued to pump oil while waiting instruction from on shore Occidental control room to shut down. Claymore was repeatedly attempting to contact on shore control room without success comparatively for a long time. Therefore the discharge pressure of Claymore and Tartan oil pumping fed oil through a damaged pipework to fire on Piper Alpha, adding more and more fuel to fire. That was another critical factor and fault on the part of Claymore and Tartan decision not to shut down pumping knowing the situation on Piper Alpha. It was noted that communications had been cut off due to the explosion and the fire on Piper Alpha, however due diligence should have been to shut down. Both Claymore and Tartan knew about the costly operation to restart the production from platform again after ESD and this probably lead Claymore and Tartan to wait for instructions to shut down rather than taking decisions on due

diligence.

There was another huge problem looming at 2218 hrs with oil fire heating the high pressure gas risers from other rigs on Piper Alpha. Heat eventually took the toll on pipework and high pressure gas riser from Tartan melted at 2220 hrs adding three tonnes of gas per second to already burning Piper Alpha. Most crew even at this were alive and above scenario was the last straw and game over for Piper Alpha and the crew. Some crew took matters into their hands at this stage and the brave decision to jump into burning sea from a ten storey high Piper Alpha before the second explosion. Those are the people who survived whilst 167 crew killed in the explosions and inferno. Seventy five per cent of Piper Alpha destroyed thought to be indestructible by many similar to Titanic unsinkable. Emergency response vessel Faros by luck happened to be there anchored closer to Piper Alpha on the night. Faros attempted to start the fire pumps too quick then tripping and wasting valuable ten minutes before getting pumps back online, also the extendable gangway was unusually extremely slow in operation taking more than an hour to reach the deck with crew (too late). However after the second explosion Faros couldn't get closer to Piper Alpha due to intense heat manoeuvred away from Piper Alpha for its own safety.

Occidental Petroleum later destroyed the remains of Piper Alpha within a year, closed down the operation never to operate in North Sea again and left for good. Investigators found the safety culture on Piper Alpha was just superficial with no true intent for serious safety. CEO of Occidental Petroleum in post incident press conference said that July 06th was the first incident in twelve years since commenced operation, however the fact is that there was a crew member killed in an accident four year prior to July 06th incident. That could have been an ideal opportunity to review safety procedures on Piper Alpha. Those who survived had to live a nightmarish life for a long time. Had Occidental Petroleum seriously committed to safety, the incident probably would not have occurred and 167 crew would never have been killed.

TANER SANCHI and M.V. CF CRYSTAL COLLISION

Captain Chandra Godakanda Arachchi Master Mariner

Fire on board lasted several days - photo from Internet

Two hundred and seventy metres long double hull Motor tanker Sanchi built in 2008 collided with CF Crystal, 76000 tonnes bulk carrier DWT (built 2011) around 2000 hrs China Standard time (CST) on 06th January, 2018, one hundred and sixty miles East of Shanghai. Both vessel fully laden with cargo, m.t Sanchi heading on a NNE course whilst CF Crystal heading perhaps in the opposite direction. M.t Sanchi was carrying 136000 tonnes (960000 barrels) of highly volatile natural Gas Condensate from Asalouyeh in Iran to South Korea whilst two hundred and twenty five metres long CF Crystal was laden with 64000 tonnes of grain from USA bound for South China. There was a huge explosion some unknown minutes post the collision, followed by fire on the tanker burning for several days with several explosions occurred with the final explosion occurring on 14th January ripping the bow off, a few hours later m.t. Sanchi sinking.

Chinese rescue team comprising of four rescuers on the 13th January were lifted off to aft deck of Sanchi utilising a crane from a support vessel in search of unlikely survivors. Rescuers found no bodies inside or outside the bridge though found two bodies on boat deck (in addition to one body already found earlier). They quickly removed the heat affected vessel data recorder (VDR) from the tanker Sanchi, carried both bodies with them prior returning to support vessel with the mission perhaps not fully accomplished though did their best under hazardous existing gaseous and heat and fire conditions existed, just taking only twenty eight minutes in total for the whole operation. Rescuers couldn't make it too far into the accommodation due to high temperature inside accommodation. It was a high risk operation due to with a risk of another explosion, quite rightly rescuers making a quick get away.

Unfortunately all thirty two crew, thirty Iranians and two Bangladeshis on Sanchi had perished by the whilst no fatalities on CF Crystal. So what happened on that fateful night? There is no official word yet as to what happened though the VDR was said to be still under scrutiny, one year elapsed at the time of writing this article post removal of VDR from Sanchi.



Will the marine community ever see the investigation report in the context of true events taken place prior and post collision. There could be a few theories floating around as to what occurred on the night, the author of this article post careful hypothetical study of the pre collision, collision, post collision and characteristics and properties of cargo on the tanker in a broader sense, presenting the following probable theory.

Last known course of m.t. Sanchi is 020 and m.v. CF Crystal on a South Westerly course was sailing towards a South Chinese port approaching probably from South of Japan. It may be possible that both ships were approaching head on or near head on courses slightly passing starboard to starboard. It is interesting to note the time of collision as 2000 hrs CST, possibly the watch change over time for both the vessels. Were (officer on watch) OOWs actually concentrating on the job closer to the collision given change over time ! Was the tanker Sanchi attempting

to turn to Port in panic seeing the unavoidable collision situation looming, simultaneously CF Crystal altering course to starboard as per Rules of the Road (ROR) to try and avoid the collision? Did above actions of both vessels caused CF Crystal's bow taking on starboard side of Sanchi abreast of No 1 and No 2 cargo tanks (collision point on Sanchi appears to be abreast of No 1/No2 starboard cargo tanks – as per photo evidence). Then bulbous of CF Crystal penetrating through wing tanks (most likely wing tanks empty prior to collision – Sanchi fully loaded with NGC) through to starboard 1 and 2 cargo tanks thus causing the highly volatile condensate to escape from cargo tanks. Both ships may have got slightly entangled due to the penetration caused by collision. Boiling point of natural gas condensate is about 5 C (ambient temperature could have been about 15 C), means that escaping condensate would have been evaporating as NGC was leaking out of tanks thus making a huge gas cloud and drifting. Prevailing seasonal wind being North Easterly, perhaps at the



m.t Sanchi in ballast condition – Captured sometime back, Sanchi was fully loaded at the time of collision. Note the position of Life boats - Photo from internet

time with head wind or there about on Sanchi, the gas cloud may have begun to drift towards the accommodation of Sanchi. It is also interesting to note that Lower Explosive limit (LEL) of Natural Gas Condensate is just above 1.4% whilst Upper Explosive Limit (UEL) being about 12%, means not much gas is required to make an explosive mixture. Flash point of NGC is about negative 45 C. Ideal scenario required for an explosion in existing conditions.

Natural instinct of the Master (and possibly CO too who is still in the bridge with 3/0) of Sanchi upon the collision would be go towards starboard bridge wing (the side where CF Crystal collided Sanchi) unaware of the gas cloud drifting towards superstructure. However as the gas cloud was drifting, those on bridge wing might have felt the strong odour of gas, thus sensing imminent explosion (CF Crystal yet attempting to dislodge itself ?) may have gone inside to shield themselves leaving the bridge. Other possibility is that severe heat of

m.t. Sanchi LOA being 274 metres , guesstimate collision occurred about 50 to 60 metres (No 1 and No 2 stbd tanks) from the bow of Sanchi. Best estimated distance, arrived by photo evidence (however in the absence of starboard side photos of m.t. Sanchi) post collision from point explosion to front of superstructure is between 150 to 160 metres. It is very much notable the absence of any starboard side (collision side) photographs of tanker Sanchi !

the explosion affecting those on bridge severely (burns) all rushing down to take cold showers never to return. This is absolutely anyone's guess to explain the reason why no bodies found in the bridge or wings.

CF Crystal would have been attempting to dislodge herself to move away from Sanchi, in the process creating an ignition source (rubbing metal to metal) provided the spark for the explosion in an ideal explosive mixture. Natural gas vapour

explosion consequence studies in open space have proved the likelihood of nearly 100% fatality within a blast wave zone of 160 meters. Blast effect also can cause severe damages to any structure within 156 meters of explosion point. Bridge front of tanker Sanchi could have been about 150 metres from the point of collision based on below estimate however actual explosion (gas cloud drifting) could be much closer to the bridge.



Forward Port side of CF Crystal appears to have severely affected by explosion with blackish burnt paint too. Damage gives an indication of the magnitude of explosion – photo from internet

First explosion may have even damaged the bridge front port holes thus gas entering the accommodation. It has been known and experienced light crude oils originating from Persian Gulf containing significant concentration of toxic Hydrogen Sulphide. It is also interesting to note the anaesthetizing effect of Natural Gas Condensate depending on it's concentration, however in this case concentration of gas could have been very high. It is likely that those within accommodation were severely affected by aforesaid anaesthetizing effect, thus rendering all inside somewhat unconscious (lack of Oxygen too) also perhaps affected by heat from explosion and fire. It is interesting to note that rescuers found only two bodies both on boat deck. What happened to the rest of the crew? Were they overcome by the toxic gas, heat or trapped inside or didn't they want to come out due to the explosions occurring with fire raging and seeing no life boats in position? Crew may have lost the command and the Chief Officer too as both Captain and CO may have been severely affected by the first explosion? Crew not knowing lost command waiting for orders to abandon ship? Crew trapped inside died of heat strokes? There are plenty of unanswered

questions! It is quite possible those inside the accommodation may have been affected by the toxic gas is a real possibility with significant concentration of Hydrogen Sulphide releasing from NGC. Rescue mission noted very high readings of poisonous Carbon Monoxide as well.

There were some unknown duration of minutes between the collision and the explosion, most likely less than 20 minutes, the bare minimum duration perhaps required to get all mustered and launch the life boats. Unless the master took immediate action to abandon the ship immediately upon the collision and moved well away from ship, nobody stood a chance to survive the explosion. Explosion may have destroyed even the life boats or were the life boats destroyed by the fire?. Unfortunately it is highly unlikely any Master to abandon the ship immediately upon any collision at least without a brief assessing the situation which proved to be fatal. No one to be blamed on Sanchi for not taking immediate action to get the crew off the ship as it's just the unfortunate circumstances lead to inaction.

There is no doubt Chinese and other supporting nations did a great deal to fight the fire on Sanchi. However

questions arise as to why Drones were not utilised, should have been equipped with, utilised upon support vessel arrival to get a closer look at bridge and decks etc. 3D technology too is now available on Drones with video recording and instant transmitting to base station (support vessel) should have given an insight into accommodation area right from the word go. VDR records data only for 12 hours then rewrite over. What provisions are there to preserve important data following such an incident? What can be done to preserve data in future? Data automatically transmits to a shore based database and preserve. Some food for thought!

It will be interesting to know the investigation report post analysing very much heat affected VDR. Those who were on CF Crystal bridge should be able shed some light on what happened on the fateful night and the whole scenario including the critical time between the collision and explosion in terms of what action taken by Sanchi and CF Crystal pre collision, communications with each other and any other relevant details. It will be extremely important to reveal the truth for the rest of the marine community for the lessons learnt.

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