REPORT NO.

368

PARLIAMENT OF INDIA
RAJYA SABHA

DEPARTMENT-RELATED PARLIAMENTARY STANDING COMMITTEE ON TRANSPORT, TOURISM AND CULTURE

THREE HUNDRED SIXTY EIGHTH REPORT

'Status of Ship building, Ship Repair and Ship breaking industries in the Country'

(*Presented to the Rajya Sabha on 08th February, 2024*)
(*Laid on the Table of Lok Sabha on 08th February, 2024*)

Rajya Sabha Secretariat, New Delhi
February, 2024/ Magha, 1945 (Saka)

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RAJYA SABHA SECRETARIAT
NEW DELHI

February, 2024 / Magha, 1945 (Saka)

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*To be appended

COMPOSITION OF THE COMMITTEE
(2023-24)

(Constituted on 13th September, 2023)

1. Shri V. Vijayasai Reddy - Chairman

Rajya Sabha

2. Shri Mohammed Nadimul Haque
3. Shrimati S. Phangnon Konyak
4. Shri Manas Ranjan Mangaraj
5. Dr. Sonal Mansingh
6. Shrimati Rajani Ashokrao Patil
7. Shri A. A. Rahim
8. Dr. C. M. Ramesh
9. Shri Zala Kesridevsinhji*
10. Shri Surendra Singh Nagar*

Lok Sabha

11. Shri Anto Antony
12. Shri Ram Margani Bharat
13. Shri Tapir Gao
14. Shri Rahul Kaswan
15. Shri Ramesh Chandra Majhi
16. Shri Sunil Baburao Mendhe
17. Shri K. Muraleedharan
18. Shri S. S.Palanimanickam
19. Shri Chhedi Paswan
20. Shri Kamlesh Paswan
21. Shri Sunil Kumar Pintu
22. Shri Prince Raj
23. Shri Tirath Singh Rawat
24. Shrimati Mala Roy
25. Shri Rajiv Pratap Rudy
26. Shri Dushyant Singh
27. Shri Rajbahadur Singh
28. Shri Ramdas Chandrabhanji Tadas
29. Shri Manoj Kumar Tiwari
30. Shri Krupal Balaji Tumane
31. Shri Dinesh Lal Yadav "Nirahua"

SECRETARIAT

Shri D. S. Prasanna Kumar, Joint Secretary
Shrimati Monica Baa, Director
Shrimati Subha Chandrashekar, Deputy Secretary
Shri Ranajit Chakraborty, Deputy Secretary

**Nominated as Member w.e.f. 26th September, 2023*

INTRODUCTION

I, the Chairman, Department-related Parliamentary Standing Committee on Transport, Tourism and Culture, having been authorized by the Committee to present on its behalf, do hereby present this Three Hundred Sixty-Eighth Report on 'Status of Ship building, Ship Repair and Ship breaking industries in the Country'.

2. The Committee heard the views of the representatives of the Ministry of Ports, Shipping and Waterways and Inland Waterways Authority of India on 6th October, 2023 to delve into the intricacies of the situation. Further, the Committee during its Study Visit to Kochi, Thiruvananthapuram and Bekal during 4th -8th September, 2023, held meetings with the representatives of the Ministry of Ports, Shipping & Waterways and Cochin Shipyard Limited, on the subject. The Committee also heard the Directorate General of Shipping, the Gujarat Maritime Board and the representatives of the Ship Recycling Association of India at its meeting on 20th December, 2023.

3. The Committee wishes to express its thanks to the officers of the Ministry of Ports, Shipping & Waterways; Inland Waterways Authority of India; Gujarat Maritime Board; Directorate General of Shipping and Ship recycling Industries Association (India), for placing before the Committee, the material and information desired in connection with the subject and for clarifying the points raised by the Members.

4. The Committee considered and adopted the Report in its meeting held on the 6thFebruary, 2024.

(V. Vijayasai Reddy)
Chairman,
Department-related Parliamentary Standing Committee on Transport, Tourism and Culture,
Rajya Sabha

NEW DELHI;
February 6, 2024
Magha 17, 1945 (Saka)

ACRONYMS

ASTM	American Society for Testing and Materials
BCG	Boston Consulting Group
BIS	Bureau of Indian Standards
CSL	Cochin Shipyard Limited
CT Scan	Computed Tomography Scan
CSOV	Commissioning Service Operation Vessels
CPSUs	Central Public Sector Undertakings
DG(S)	Directorate General of Shipping
DWT	Dead Weight Tonage
ECB	External Commercial Borrowings
EOI	Expression of Interest
EU	European Union
FY	Financial Year
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GMB	Gujarat Maritime Board
GST	Goods and Services Tax
GT	Gross Tonnage
GTTP	Green Tug Transition Program
HCSL	Hooghly Cochin Shipyard Limited
ICU	Intensive Care Unit
IMF	International Monetary Fund
IMO	International Maritime Organization
INR	Indian Rupee
IRS	Indian Register of Shipping
ISRF	International Ship Repair Facility
LNG	Liquefied Natural Gas
LOA	Length Overall
M/s	Messrs (used for companies)
MRI	Magnetic Resonance Imaging
MSRA	Master Ship Repair Agreement
MIV	Maritime India Vision
MRI	Magnetic Resonance Imaging
NCoEGPS	National Centre of Excellence for Green Port and Shipping
NDC	Nationally Determined Contributions
PPP	Public-Private Partnership
PSU	Public Sector Undertaking

RE	Renewable Energy
R&D	Research and Development
RoFR	Right of First Refusal
SBFA	Shipbuilding Financial Assistance
SMPK	Syama Prasad Mukherjee Port Kolkata
SoP	Standard Operating Procedure
TMT	Thermo-Mechanically Treated
TRT	Turnaround Time
TSL	Tebma Shipyards Limited
TERI	The Energy and Resources Institute
UCSL	Udupi Cochin Shipyard Limited
USD	United States Dollar
US	United States

REPORT

SHIP BUILDING

India has long-standing maritime tradition, with shipbuilding activities documented as early as the Indus Valley Civilization. Coastal regions like Gujarat, Kerala and West Bengal have been centers of shipbuilding for centuries. Modern shipbuilding as an industrial activity gained momentum in the post-independence era. Shipbuilding industry holds strategic significance due to its role in energy security, national defence and its immense direct and indirect linkages with most other leading industries. The shipbuilding industry has the same impact as infrastructure sector due to higher multiplier effect on investment and turnover (11.6 and 4.2) and high employment potential due to multiplier effect of 6.4. The industry has the potential of generating mass employment in remote, coastal and rural areas. Promotion of ship building and ship repair industries therefore should be given prime importance due to their potential to strengthen the mission of an Atmanirbhar Bharat.

2. Despite the significance of the ship building and ship repair industries, India's share in the global ship building and ship repair market remains meager, hovering around 1-2%. In fact, India's position in both sectors has witnessed a decline in the past decade. Recognising this concern, the Department-related Parliamentary Standing Committee on Transport, Tourism and Culture undertaken an examination and report on the subject 'Status of Ship Building, Ship Repair and Ship Recycling Industries in India'.

3. The Ministry informed the Committee that there are 45 Shipyards in the country, 7 under Central Public Sector, 2 under State Governments and 36 under private sector **(ANNEXURE-I)**. The Ministry of Ports, Shipping and Waterways formulates policies and programs for shipping, marine

development, Ship Building, Ship Repair, and Ship Breaking Industry. However, the Ministry has direct control only over the Public Sector shipyards under the Central Government. Remaining shipyards operate as separate entities which ensure they take informed decision making.

4. The Ministry also informed that over last few decades, India's shipbuilding capacity increased substantially, witnessing emergence of state-of-the-art shipyards equipped with advanced technology and infrastructure. Indian shipyards are developing a wide range of vessels, including aircraft carriers, cargo ships, oil tankers, passenger ships, offshore support vessels & naval ships. Currently, the maximum size of the vessels, which can be built in India in the public sector is 1,10,000 Dead Weight Tonage (DWT) which is increasing to built vessels up to 3,00,000 DWT by Cochin Shipyard Ltd. Private sector shipyards can build vessels upto cape size vessels comparable to some of the leading shipyards in the world. Reliance Naval Engineering Limited has the capacity to build vessels upto 400,000 DWT and L&T Shipbuilding -Kattupalli 300,000 DWT which includes large LNG Carriers. Smaller size LNG Carriers, Dredgers and other specialized vessels can be built by other shipyards in the Private sector such as Shoft Shipyard Private Ltd., Chowgule & Co. Ltd., Titagarh Wagons Ltd., Vijay Marine Services, Mandovi Dry Docks Ltd., A.C. Roy & Co., Dempo Shipbuilding and Engineering Pvt. Ltd. etc.

5. The Global ship building market is estimated to be approx. USD 70 billion, primarily dominated by China, South Korea and Japan which account for about 85% of global Ship Building. The Ship building industry has however been going through an extended global downturn for the past few years, with world's leading shipyards facing financial troubles due to lack of orders. During early 2000s, Indian ship building industry produced over 3,00,000+ Gross Tonnage (GT) and ranked amongst top 10 in the World. The global downturn in the shipbuilding industry significantly impacted the Indian shipyards and India's share in the Global markets has declined to less

than 1%. At present, India holds the 20th position among the top shipbuilding nations globally.

6. Under the present depressed prevailing market, the growth in the Industry is likely to be accelerated through the "Atmanirbhar Bharat" initiative under the Make in India Programme of the Government of India. In this regard, the Ministry had informed the various support initiatives taken by the Ministry such as:

(i) Providing preference to local built Tugs for the employment of services in all the Major ports. -In order to promote small and medium shipyards, in September, 2020, the Ministry has issued Standard Operating Procedures pertaining to Procurement/Chartering of Port Crafts by the Major Ports. As per this SOP, no Global Tender has to be issued for Procuring or Chartering the Tugs with value less than 200 crores, making these procedures simple and more efficient. To assist the Major ports in expeditious implementation of the Make in India Order' an Approved Standardized Tug Design & Specifications (ASTDS) has also been issued and published. This ensures consistency and quality in the construction of tugs and promotes uniformity across major ports. Overall, these initiatives are aimed to boost the domestic shipbuilding industry aligning with the broader "Make in India" initiative.

(ii) Schemes for the coastal shipping and Inland water

(iii) Defence market and deep sea fishing segment. As per a published report, the Indian Navy's perspective plan outlines an ambitious goal of expanding its fleet from the present 137 vessels to 200 nos. by the year 2027. The strategic vision aligns with the broader goals set up by the Government of India as otlines in the recently circulated Defence Production Policy. the vision aims "To make India among the Top Five countries of the world in Aerospace and Defence Industries", with active participation of public and private sector, fulfilling the objective of self-

reliance and meeting the demands of other friendly nations in the field of defense.

7. Further, the Ministry issued Standard Operating Procedure (SOP) in 2021 for Procurement of Deep-Sea Fishing Vessels to assist the state fishery departments in expeditious implementation of Prime Minister Matsya Sampada Yoyana (PMMSY). Consolidated Standard Operating Procedure (SOP) for Procurement of Deep-Sea Fishing Vessels for Steel and FRP was issued on 31.01.2022. Further, three variants of Standardized DSFV Design & Specifications (ASDDS) for Fishing vessels approved by Nodal authority have been sent to D/o Fisheries for necessary action.

8. The Ministry informed that given the huge scope in, in urban transport segment and the Short sea shipping market where environment friendly electric mobility technology is fast catching up and provides new opportunity for Indian Shipbuilders the private shipyards are upgrading their capabilities for construction of Hybrid Vessels, so that those also become eligible to be considered for construction of such vessels, with support of the government.

9. The Government of India is also actively considering framing of rules to reduce the age profile of vessels to improve safety and to improve emission standards as well as overall improvement of maritime environment. This would enable creation of additional demand for domestic shipbuilding industry.

10. The Committee appreciates the initiatives of the Ministry for its efforts under the "Make In India" programme for promotion of shipbuilding activities . The Committee observes that Approved Standardized Tug Design and Specifications (ASTDS) have been issued by the Ministry to assist the Major Ports in expeditious implementation of the Make in India Order. The Committee desires to know how many locally built Tugs have been ordered by the Major Ports since the

implementation of this Order in September, 2020.

11. Maritime Vision 2030 provides for making Indian ship building to become competitive by 2025 and then build on the momentum to reach "Make in India Make for World" levels.. The ultimate objective is for India to emerge as one of the top 10 shipbuilding nations globally. Major initiatives include channelizing the cargo to improve demand, improving the ecosystem for ancillary industries for better productivity with appropriate Governmental interventions to create level playing fields to make the industry competitive in international arena. Further, Maritime India Vision 2030 has set a target of taking up India to top 10 Ship building country with with a Gross Tonnage (GT) exceeding 500,000, a substantial increase from the current production level of around 30,000 GT. This strategic roadmap outlines a comprehensive approach to propel the Indian shipbuilding industry into a more prominent and competitive position on the international stage.

12. Maritime India Vision 2030 provides for various interventions to augment and promote the shipbuilding industry in India,which include:

(i) Channelize domestic demand for Indian Shipbuilding leveraging AtmanirbharPPP provisions and RoFR rules efficiently

(ii) Develop common platform for ancillaries to showcase the products available forIndian shipbuilding

(iii) Create a common database of standard vessel basic designs with pre-approval from Indian Register of Shipping (IRS) to drive standardization, improve design process and leverage cost economies

(iv) Develop strong marine design ecosystem by identifying design clusters andincentivizing for 'Design in India'

13. The Ministry further informed about the following initiatives taken to

promote the shipbuilding industry in country:

FINANCIAL ASSISTANCE POLICY

13.1 In order to encourage domestic shipbuilding and to provide a level playing field vis-a-vis foreign shipyards, the Union Cabinet approved the Shipbuilding Financial Assistance Policy for Indian Shipyards on 09 December, 2015. This policy, applicable for a duration of 10 years, covers shipbuilding contracts secured between 1 April, 2016, and 31 March, 2026, (including these dates). Any ship which is built in India whether in Government sector or private and does not fall under the category of an armored ship—meaning it does not have armory or arms fitted—is eligible for financial assistance.

13.2 Under the Shipbuilding Financial Assistance Policy, Indian Shipyards are eligible for financial assistance equivalent to 20% of the lower of "Contract Price" or the "Fair Price" or "actual payments received", whichever is the least. This assistance is granted for a minimum period of 10 years starting from the fiscal year 2016-17. This rate of 20% will be reduced by 3% every three years. Presently, 14% of the cost of that ship is provided by Government through this scheme. Budget of Rs. 4,000 crore has been approved by the Government of India for this initiative The and the Directorate General of Shipping [DG(S)] serves as the implementing authority for release of financial assistance . The applications for release of financial assistance are processed through an online portal in order to expedite the disbursement process to Indian shipyards. The amount of financial assistance released so far is as under:

Year	**Amount of financial assistance released**
2018-19	Rs. 29.02 Cr
2019-20	Rs. 26.97 Cr

2020-21	Rs. 58 Cr
2021-22	Rs. 65 Cr
2022-23	Rs. 58 Cr
2023-24 (until 17.12.2023)	Rs. 32.24 Cr (expected to reach 97Cr approx.in)

13.3 The Ministry further informed that so far 31 Shipyards are approved under SBFA policy and a total of 99 ships have been delivered by various shipyards.146 applications have been received and the cost of the ships to be built is Rs. 8239 crores. Under this policy Rs.275.7 crore rupees have been released to the shipyards as part of financial assistance thus far.The target for the current financial year is 102 crores and next year target is beyond 200 crores. Notably, the policy has introduced incentives for green shipbuilding, offering a flat rate of 30% for ships using green fuel as propulsion and 20% for hybrid fuel ships (diesel plus electric or diesel plus hydrogen). Due to these incentives, the CSL has been able to build fully autonomous vessels for export to Norway.

13.4 The increase in financial assistance over the years proves that the volume of ship building is steadily increasing in India. In the government sector, CSL is the only company taking advantage of this Scheme but in the private sector, both medium scale and small shipyards have been benefitted by this scheme.

13.5 The Committee observes that the earlier subsidy scheme of the Ministry of 5 years offered shipbuilders 30% extra on building ocean-going merchant vessels that are more than 80 metres in length, if they are manufactured for the domestic market. For export orders, however, ships of all types and capacities were eligible for the subsidy. In the new financial assistance scheme, assistance will be given for all types of

ships irrespective of size. In the new scheme, both state-owned and private yards will get the assistance only after they construct and hand over to the ship to the buyer to ensure timely delivery of ships. The new financial assistance scheme was therefore for double the period of the earlier subsidy scheme, the focus extended for all ships and ensured timely delivery which had been a constraint in the earlier scheme. The Committee also observes that when commercial orders dried up in the wake of the 2008 financial crisis, Indian shipyards were focusing mainly on defence orders to stay afloat. The Government's financial assistance policy was meant to help bring in more and major commercial ship building orders.

13.6 However, the Committee observes that in the nearly 8 years since the launch of the scheme, only a paltry 6-7% of the Rs. 4000 corpus has been utilized. The target of Rs. 200 crores for the next financial year appears to be bit rather unrealistic considering the poor response of the past few years. Since there are only 2 years left for the Scheme, it appears that the financial benefits under the Scheme have not been utilized to the extent possible. The Committee disagrees with the Ministry's contention that the increase in financial assistance availed over the years is significant enough to prove that the volume of ship building is increasing in India. The Committee desires to know how many of the 31 Shipyards approved under the policy have actually utilized the benefits of the scheme and how many ships have been built by individual shipyards under the Scheme. The Committee may also be informed of the type of vessels that have been built by the Shipyards which have actually utilized the benefits. While CSL in the government sector has been able to win orders from global clients, the Committee desires to know whether the private shipyards benefitting under the scheme have also been competitive enough to win global orders to build large container ships. The leading Ship Building nations of

China, South Korea and Japan thrive on export orders to build their shipbuilding expertise. The Committee while appreciating the Government's efforts to create an ecosystem for boosting shipbuilding recommends that the Ministry should evaluate the reasons for the poor utilization of the financial assistance scheme and whether technical reasons like high imports of material for shipbuilding, less automation in the shipbuilding processes are affecting the competitiveness of Indian Ship yards.

Right of Refusal to Indian Shipyards

13.7 On 09.12.2015 the Union Cabinet also approved a directive that all government departments or agencies including CPSUs must provide Right of First Refusal to Indian shipyards while procuring or repairing vessels meant for governmental or own use. This mandate will be in effect till 2025, beyond which Indian shipyards would build and repair vessels of these organizations. Guidelines were uploaded on website of this Ministry on 31.05.2016. Subsequently, a few provisions of the guidelines regarding Quay Length and Non-Destructive Testing facilities have been modified by this Ministry to facilitate more Indian shipyards including small shipyards to take advantage of this policy. The modified guidelines have been uploaded on website of Ministry of Ports, Shipping & Waterways.

Grant of Infrastructure Status

13.8 The Department of Economic Affairs has notified the inclusion of standalone 'Shipyards' in the Harmonized Master List of Infrastructure Sub-sectors on 13.04.2016. With this inclusion, shipyards will be able to avail flexible structuring of long term project loans, long term funding from Infrastructure Funds at lower rates of interest and for a longer tenure equivalent to the economic life of their assets, relaxed ECB norms, issuance

of infrastructure bonds for meeting working capital requirements. Standalone shipyard is defined as a floating or land- based facility with the essential features of waterfront, turning basin, berthing and docking facility, slipways and/or ship lifts, and which is self sufficient for carrying on shipbuilding/repair/breaking activities.

14. Promotion of tonnage under Indian Flag

The criteria for granting the Right of First Refusal in chartering of vessels through tender process has been revised, for promoting tonnage under Indian flag and shipbuilding in India, so as to make India an Atmanirbhar/self-reliant Bharat, in terms of tonnage and ship-building in India. The following is the revised hierarchy of RoFR:

(i) Indian built, Indian flagged (Indian owned);

(ii) Foreign built, Indian flagged (Indian owned);

(iii) Indian built, foreign flagged (foreign owned).

15. This will promote demand of Indian built vessels as the Indian built vessels will have the priority in chartering and will also provide additional market access and business support to ships built in India. Further, the Shipbuilding Financial Assistance is provided to Indian Shipyards in order to promote the Indian Shipbuilding Industry and to enable them to acquire global Shipbuilding Contracts while competing in International Markets.

16. The following number of Indian-flagged ships are manufactured in ourshipyards per year

Financial Year	**Nos.**
FY-2018-19	07
FY-2019-20	11

FY-2020-21	09
FY -2021-22	20
FY -2022-23	26
FY -2023-24	10. FY ongoing)

17. The Committee observes that while India has about 25% of the global market in ship recycling, its share of ship building is barely 1-2%. The Committee has been informed that the main reason for the low percentage share in ship building is the high cost of ship building in India which in turn is due to high cost of material and labour costs. Some of the other reasons are lack of strategic guidance, level playing field between private and public sector companies, funding, technology. The Committee has been informed that while India is very competitive in normal steel and even automative graded steel, the steel required for ship building is more specialized. Since the market for such specialized steels is small in India, this further drives up the material costs. Since most Indian steel mills are located near to the mines, the rail transportation costs are also high and further push up the costs. Indian steel is therefore costlier by about 50 — 70 dollars a tonne. Further, the labour costs are also higher in India due to productivity issues. Labour productivity in India is also low due to the fact that there is less automation in India unlike Korea and China which have high levels of automation due to the investments made by these countries in this regard.

18. Further, though Shipyards come under 'Infrastructure", ships themselves do not come under Infrastructure and getting long-term finance at easy rates for ships is difficult. Shipbuilding payments is usually done in stage payments as per defined stages. If the owner defaults, he forfeits the money and the ship, the half built ship, belongs to the purchaser. But then the

purchaser has to sell the ship in the global market to recover his costs, so there is a risk involved. The Committee was also informed that most of the leading maritime countries have got risk insurance cover given to banks or lending institutions. China has got Sinesure, Korea has got K-sure and Netherlands has got Atradius. If India could get a scheme like that, the banks would be able to offer much lower rates of interest.

19. The Committee observes that the high cost of steel, labour costs and high interest rates drive up the material costs of shipbuilding. The Ministry has informed that interests rates are as high as 10-12 % in India while only 2-2.5% in China. Upon query of the Committee on whether the Ministry has any plans to give interest subsidy to encourage ship building, the Ministry informed that in the Harmonized Master List, only Shipyards and not Ships are regarded as infrastructure. Therefore ships do not get long term financing and other advantages that Infrastructure gets.

20. If India is to be positioned among the top 10 nations in Ship Building, then an ecosystem which would address the infrastructure, regulatory, fiscal issues and capability development is to be developed. The Committee observes that as per the Rangarajan Commission, six indicators of sectors to be classified under Infrastructure were –

(a) natural monopoly;

(b) non-tradability of output;

(c) bestowing externalities on society;

(d) high-sunk costs or asset specificity;

(e) non-rivalness (up to congestion limits) inconsumption; and,

(f) possibility of price exclusion. The Commission had recommended the inclusion of Ships and other Vessels on the basis of the characteristics from (d) to (f).

21. The Committee appreciates the grant of infrastructure status to

Shipyards due to which the Ship Building industry would be able to avail long term funding at lower rates and for various forms of financial assistance, benefits and concessions. The Committee also observes that the Government is planning to give infrastructure status to coastal shipping. The Committee recommends that the Government may consider extending infrastructure status granted to Shipyards to all ships and Vessels, not only coastal shipping.

22. The Committee recommends that the production of specialized steels domestically should be incentivized and strategic partnerships with global suppliers should be established to ensure a cost-effective supply chain to address the high costs of materials. The Committee recommends that setting up a specialized financing institution/marine finance scheme could provide a much-needed boost to the shipbuilding industry. The Ministry may also explore the possibility of getting a risk insurance cover scheme for ships in India on the lines of the ones in Korea and China which would attract domestic and international investors to participate in financing maritime projects. The Committee observes that the private sector ship building companies are mostly struggling with hardly any profits, the most recent casualties being Western India, Bharati and ABG Shipyards. The Committee recommends that the private sector must be considered as much of a stakeholder in shipping as the public sector and a level playing field for both sectors must be the concern of the Government.

23. The Committee observes that Skilled manpower is the most essential prerequisite in Ship Building industry. Ensuring proper education and training could bolster the effectiveness of the industry. The Committee observes that as per studies the labour productivity value for India is approximately 10 times lower than the major shipbuilding nations. All these translate to about 20-25 per cent cost advantage for major

shipbuilding nations vis-à-vis India.[1] The Committee recommends that investments in automation should be encouraged in order to improve labor productivity and reduce costs.

24. One of the constraints of shipbuilding in India is the limited investment in R&D in ship design and innovation. The Committee recommends that the Government focus on skill development and developing an R&D base to increase the competitiveness of the Indian shipbuilding industry.

25. The MIV document also advocates creation of a Maritime Development Fund to provide easy access to working capital and long-term finance needs across marine sectors. The Committee recommends that the Ministry may implement the creation of the Fund which can give access to Indian ship owners to improve their capacity and shipyards to improve the infrastructure

26. The Ministry also informed the Committee about the key milestones achieved in shipbuilding and repair industry in the last decade:

(i) Cochin Shipyard Limited has also incorporated a 100% subsidiary company viz. Hooghly Cochin Shipyard Limited (HCSL) at Kolkata. HCSL targets to develop various types of vessels like Ro-Ro Vessels, River-Sea Cargo Vessels for bulk, liquids, containers, Passenger Vessels, other watercrafts for the inland waterways.

(ii) CSL has also recently acquired Tebma Shipyards Limited (TSL), a medium sized shipbuilding facility at Malpe, Karnataka, through the IBC/ NCLT process as a 100% subsidiary. The name of the Company as subsequently changed to Udupi Cochin Shipyard Limited (UCSL) to relate the company more appropriately to CSL. UCSL mainly focuses on building fishing vessels (especially technologically advanced deep sea fishing vessels), tugs and specialized crafts of up to 80 M length which

[1] https://maritimeindia.org/navigating-economic-security-through-shipbuilding/

projects huge potential in domestic as well as international markets. Upon enquiry by the Committee, the Ministry informed that the total revenue generated through export of ships by CSL in 2022-23 is Rs.69.06 Cr.

GREEN SHIP BUILDING

27. The Committee was informed that from fossil fuels, Ship building is now happening in hybrid or green fuels. Upon query by the Committee regarding the strategy adopted to promote green vessels the Ministry informed that to promote building of green vessels, financial assistance of 30% is provided through SBFA for vessels where main propulsion is achieved by means of green fuels such as Methanol/ Ammonia / Hydrogen fuel cells and Financial Assistance of 20% is provided for vessels with electric means of propulsion or vessels fitted with hybrid propulsion system, thereby increasing the competitiveness of Indian shipyards and to gain export orders.

28. India will also be implementing IMO energy efficiency requirements for existing ships and carbon intensity requirements on all its vessels whether coastal or international in order to help achieve IMO GHG reduction targets. India is already supplying shore power to ships with power demand less than 150 KW at present and targeting to supply shore power to all visiting ships. India is working actively at Marine Environmental Protection Committee of IMO to help devise acceptable regulatory requirements for GHG emission reduction in line with IMO GHG initial strategy.

29. India's Nationally Determined Contributions (NDC) under the Paris Agreement for the Period 2021-2030 include: to reduce the emissions intensity of its GDP by 33 to 35 per cent by 2030 from 2005 level, and to achieve about 40 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030 with the help of transfer of technology and low-cost international finance. India is well on its way to

achieve these targets and has already achieved more than 24.5% share of Renewable Energy (RE) in total Installed Capacity. Globally, today India stands 4th in RE power capacity, 4th in Wind power, and 5th in Solar Power capacity.

30. The pace at which the Green initiatives are undertaken by the 12 major ports will surely bring a green revolution in the sector making the ports cleaner and greener, which is also a key component of 'Blue Economy', creating environmental benefits and balancing the investments and cash flow.

31. Following are the initiatives by Ministry of Ports, Shipping and Waterways inexporting Green ships: -

(i) In June 2022, CSL has delivered two autonomous electric barges for the Norway-based ASKO Maritime AS.

(ii) In November 2022, CSL signed an international order for constructing 2 nos. of Commissioning Service Operation Vessels (CSOV) at a price of approximately Rs 500 crores each from a European Client, with an option to build 4 more of such vessels to be exercised by the Owner within a period of one year. These vessels are intended for the services of offshore wind farm installations towards its commissioning and maintenance and are powered by methanol fuelled engines.

(iii) In March 2023, CSL signed another international order with a Norwegian companies for design and construction of a total of two nos. of Zero Emission Feeder Container Vessels with an option for two more vessels at a price of Rs.550 crores approximately. These ships can carry abt. 365 Nos. of 45-feet long high cube containers and are intended to serve the European Market where sustainable transportation solutions are in high demand.

(iv) On 10 May 2023 Udupi Cochin Shipyard Limited, a subsidiary of CSL has contracted for the construction of 6 Nos 3800 DWT

bulk carrier for Wilson As Norway. These "Future proof dry cargo vessels" are environmentally friendly diesel-electric vessels which are ready for installation of wind foil units and battery hybrid systems.

(v) Construction of first Zero Emission 50 Pax Hydrogen Fuel Cell Passenger Catamaran Vessel is in collaboration with M/s KPIT, Pune. The catamaran vessel will be deployed at Varanasi after test and trial at Kochi. Based on the success of this project, the technology can be adopted for greening of, cargo vessels, small country crafts etc. enabling significant reduction in pollution levels in the National Waterways.

(vi) Construction of 23 number of Hybrid Electric Aluminium Catamaran Hull vessel for Kochi Water Metro Project out of which twelve vessels have already been delivered.

(vii) CSL is also constructing 8 Nos of 50 Pax Hybrid Electric Aluminium Catamaran Hull vessel vessels, similar to KMRL to enhance urban water mobility in the National waterways of Varanasi, Ayodhya, Madurai and Guwahati.

(viii) CSL along with three other ports viz. Deendayal Port Authority, Kandla, Paradip Port Authority, Paradip, V.O Chidambarnar Port Authority, Thoothkudi, has partnered in the National Centre of Excellence for Green Port and Shipping (NCoEGPS) which has been established by MoPSW in TERI campus Government of India has announced the Green Tug Transition Program (GTTP), which will gradually convert tugs operating in different ports to battery-powered/greener fuel vessels in order to reduce carbon emissions from port operations. As a first step towards this 4 major ports Deendayal Port Authority, Kandla, Paradip Port Authority, Paradip, V.O Chidambarnar Port Authority, Thoothkudi and Jawaharlal Nehru

Port Authority Mumbai are tasked to operationalize 2 green tugs each.

(ix) In order to enhance the share of Green Shipping, various projects are being implemented by Cochin Shipyard Ltd., India's largest shipbuilding and maintenance facility. These include green urban mobility solutions like Hybrid Electric Ferries, autonomous Zero-emission vessels, pilot project on Hydrogen Fuel Cell Ferry, Electric Catamaran Water Taxi, Hybrid Electric Ro-Ro, Hybrid LNG-Electric Inland Cargo Carrier, Hybrid Tugs, etc.

32. The Committee observes that ship engines and ship fuels are undergoing rapid change and moving away from fossil fuels to new fuels like green methanol, green ammonia etc. In the near future, every goods/service will have an identifiable carbon footprint and carbon neutral products and services will have a competitive advantage. While the Committee appreciates the initiatives of CSL in constructing green vessels, there does not appear to be the same efforts on the part of other shipyards. The Committee recommends that the National Centre for Excellence in Green Ports and Shipping may act as a nodal entity for green shipping so that there is a coordinated effort by all shipyards to position India as a global hub for green shipping.

33. Overall, the Committee observed that faced with high financial costs, the shipbuilders in India encounter difficulties in expanding their operations and providing competitive pricing to end-users. This predicament has led to low orders, diminished profits and a constrained capacity for reinvestment.

34. As per a FICCI report, Indian shipyards require about 25-35% of the ship's cost as working capital during construction, with interest rates averaging 10-10.5%. In contrast, overseas shipbuilding yards enjoy

significantly lower rates along with lower-interest export credit.[2] The Committee, therefore, recommends that measures to reduce interest rates on working capital for Indian shipyards be explored .

35. The Committee feels that a potential Production Linked Incentive (PLI) scheme can go a long way to boost the shipbuilding industry. This multifaceted scheme could include output-based rewards, wherein shipbuilders stand to receive incentives commensurate with the quantity and type of ships they manufacture. Additionally, the PLI scheme might introduce investment incentives tailored to encourage shipbuilders to modernize their facilities and integrate advanced manufacturing technologies. Shipbuilding entities making investments in upgrading infrastructure and adopting state-of-the-art manufacturing processes could qualify for these investment incentives. This dual approach of incentivizing both production and investment could create a dynamic environment that propels the shipbuilding industry towards technological advancement, increased efficiency and global competitiveness.

SHIP REPAIR

36. The Committee was informed that the global ship repair market is approximately US$ 12 billion and is expected to witness significant growth, reaching a market value of USD 40 Billion by 2030. The global market for ship repair and maintenance service is currently dominated by shipyards in China, Singapore and Middle East largely due to the availability of skilled workforce and latest technology. India's share in the global ship repair market is currently less than 1%.

[2] https://ficci.in/public/storage/events/24269/ISP/FICCI_IN_Compendium_Nation-Building-Shipbuilding.pdf

37. The Committee was further informed that India has the following inherent advantages to become a major player in the global ship repair market.

Strengths of Indian ship repair industry

(i) Geostrategic location of India

India has a long coast line of around 7516 kilometre. There are a number of all weather ports which are not subjected to severe weather conditions. The country's considerable coastal expanse, featuring numerous all-weather ports shielded from harsh weather conditions, stands as a significant advantage. It is positioned strategically along major trade and shipping routes, with 7 to 9 % of the global trade passing within 300 NM *nautical miles* of its coastline. This represents increasing market potential for the ship-repair business, as ship owners prefer to repair their ships without deviating from their trade routes as much as possible. Additionally, India is poised well to offer repair services to Indian Navy and the ally US Navy for its 5th and 7th fleet deployed in the Indian Ocean and the Arabian Sea.

(ii) Abundance of labour

Among the resources required for the Ship Repair Units to function efficiently, labour market plays an important role and India has a huge untapped potential in terms of all segments of labour – from unskilled to highly skilled. Most of the existing and new ship repair yards in India concentrate on new building and providing services to naval and coastal vessels.

(iii) Competitive labour rates

Apart from abundance of labour, the subcontract labour rates for steel work, pipe work, blasting and painting, mechanical and electrical works are cheaper in India and are comparable to labour rates in Indonesia and Vietnam. In fact it is 10 to 15% lower than subcontract labour rates of Indonesia.

38. With strategic location in the trade route of tanker/bulk carrier traffic on east & west and availability of trained workforce, there are opportunities for huge revenue generation in the ship repair market. Ship-repair service, a

supplementary service provided by most of the shipyards, is also a labour-intensive activity that utilizes the existing ship-building infrastructure to provide additional returns on the capital invested. It is estimated that market size for ship repairs for domestic vessels is around INR 4K crore, out of which nearly 800 crores of ship repair market is under Government/PSU control.

Constraints

39. Despite such advantages, India's share in the global ship repair market is currently less than 1%. The Ministry informed that there are major issues with the Indian Ship Repair Industry such as higher Turnaround Time as compared to other South-East Asian countries and a lack of efficiency in the working process along with higher cost of procurement. The untapped potential in the Indian ship repair market can also be attributed to the following reasons –

(i) presence of competing international ship repair yards on major trade routes

(ii) a capability gap of Indian yards in repairing certain kinds of vessels.

(iii) One of the major deterrents in ship repair has been GST which is an additional tax burden.

(iv) Further, import of raw materials and parts for use in maintenance & repair of Ships/ Vessels by the Ship building/repair yards shall now also attract customs duty at applicable tariff rates (5%, 7.5%/10%/15%/20% etc) as the current exemption vide Sl. No. 549, 550 will not be available from 1st April 2024 as per Notification 02/2023 dated 01.02.2023. The industry is also facing the issue of accumulation of input tax credit which results in working capital cost. All this will increase the cost of ship repair in India. Other reasons of cost disadvantages include high cost of financing, lack of supply of ship spares in India, ancillary support and technology related issues increasing ship repair execution cycle time. Due to these disadvantages, only about 5-6 shipyards out of a total of 24 shipyards in the country carry out any significant repair jobs.

40. Referring to the formal framework agreement signed in 2023 with the U.S. Government on naval ship repair with Larsen & Toubro at the shipyard at Kattupalli, lndia, the Committee asked about the efforts taken by the Government to increase foreign partnerships in the realm of Ship Repair and make India a logistics hub for countries in the lndo Pacific Region.

41. The Committee was informed that the Maritime India Vision, 2030 has set the target for India to be in the top 10 countries by 2030 in global ship repair activities. To address the untapped potential of the Indian Ship Repair market, the Government of India under the Maritime Vision 2030 is giving a string forward thrust to the industry with multiple initiatives which include infrastructure creation of two Ship Repair Clusters in the south coast and west coast to enhance the Ship Repair capability of the nation. A Ship Repair cluster is a Ship Repair ecosystem which will have Maritime or Ancillary Parks, all Services, Space for Stockyard and Common Use facilities. As the international shipping routes are very close to these clusters, this will open a new arena for the ship repair industry. Cochin Shipyard is in the process of being an anchor company for both the Ship Repair clusters being planned.

Initiatives of the Ministry to promote the Ship Repair Industry

Development of ship repair clusters:

42. Cochin Shipyard Limited has engaged M/s Boston Consulting Group (BCG) to prepare a Strategy Report for setting up of the two Ship Repair Clusters in India. The BCG carried out a detailed study of the requirements of ship repair clusters and held interactions with various potential stake holders. Deep dive study of the ship repair cluster models operating successfully in Dubai and China was also carried out by BCG with an aim to benchmark the requirement for India. The Ship Repair cluster strategy report was deliberated in detail and the overall cluster strategy brought out therein was agreed in-principle by?. The MoPSW accordingly directed that necessary actions towards implementation of the strategy as brought out in the action plan and road map of the report shall be

initiated by respective organisations. As per the report, the initial two Ship Repair Clusters proposed are:-

(i) Southern Cluster (Kochi):

This would be set up in association with the new International Ship repair Facility (ISRF) being set up by CSL at Kochi. It would be implemented in two phases as follows:-

a) Phase–1: This would include the ISRF facility built by CSL with the ship lift and six work stations at an investment of Rs. 970 crores. The proposal is for CSL to utilise this facility as part of the Kochi SR Cluster on an Operate & Maintain mode with another shipyard of International repute. An – Expression of Interest or Request for Proposal (EOI/RFP) for identifying an International Operating Partner will be issued shortly. Road Show and meeting with potential partners are currently in progress to help on-board a best in class global partner.

b) Phase-2: This would be an extended ISRF facility as per which another ten workstations will be added to the original six, thereby making ISRF a facility with 16 Work Stations centered around the ship lift of 6000 T capacity, capable of handling ships up to 130 Mtr long. Phase-2 will be taken up subsequently at an appropriate time. The O&M partner of Phase-1 will have the ROFR on partnering with CSL in Phase-2, which is proposed to be on a JV mode between CSL and the partnering entity.

43. A detailed Expression of Interest (EOI) for identifying an International Operating Partner will be issued shortly, Road Show and meeting with potential partners are also planned to help on-board a best in class global partner. CSL has finalized M/s BCG for consultancy for its part of the implementation phase of the ship repair clusters above. The Consultant has commenced the 1st phase from 14 Aug 2023 for a period of 10 weeks assignment. The initial reach out to potential global ship repair partners has commenced. The EOI towards this will also be issued by the CSL shortly.

44. In addition to the above and to facilitate the overall development of the region as part of the SR Cluster eco system, it would be necessary to set up Ancillary Parks for suppliers, service providers, contractors, etc. and Hospitality Hubs to ensure accommodation and other facilities for technical teams, client teams, foreign OEM representatives and service engineers etc.

45. Upon a query of the Committee about the necessity of a foreign partner in establishing the Ship Repair Cluster, it was informed that adding ten more workstations at the ISRF facility at Cochin would require an investment of an additional 1500 crores and a foreign partner would not only provide the investment required but also bring in international best practices.

(ii) Western Cluster (Mumbai / Vadinar):

46. Vadinar, at the mouth of a gulf with Mundra port on one end and Kandla port nearby, forms a catchment area with natural draft which receives the maximum number of ships and therefore a major ship repair cluster is being planned here.

47. CSL is already operating the Ship repair facility in Hughes Dry-dock in Mumbai (called CMSRU). A floating dry-dock (FDD) will also be positioned at CMSRU for which tendering is in progress, after receipt of clearance from Ministry for global procurement. This will increase the ship repair capacity in the area. Along with this and as brought out in the Strategy Report a new Ship Repair facility, based 2/3 large Floating Dry-docks capable of handling large ships of around 250 Mtr is planned to be set up in Vadinar, Gujarat. CSL and Deendayal Port Authority (DPA) will jointly build up the facility. An operating model in association with a leading International partner will also be put in place. CSL and DPA are in the early stages of discussing the facility layout, and DPA is actively working on securing the required environmental clearances for the project.

Development of International Ship Repair Facility (ISRF) and New Dry Dock (NDD) at Cochin Shipyard

48. Cochin Shipyard Limited (CSL) is the largest and most accomplished Ship Repair Yard in India with more than 2500 Ship Repair projects completed. It is the only yard capable of handling Aircraft Carriers – 15 Refits including Life Extension projects. The existing Ship Repair Docks of CSL are as follows:-

CSL Ship Repair Docks

270 x 45 x 12M at Kochi

300 x 30 x 9M at Mumbai

172 x 23 x 8M - 2 Nos at Kolkata

88 x 20 x 7M at Port Blair

68 x 20 x 5M at Port Blair

Shiplift: 6000T (130 x 25M) at Kochi1

Slipways: 35 M x 250 MT - 5 Nos at Port Blair

49. CSL is developing International Ship Repair Facility (ISRF) and New Dry Dock (NDD). Their details are as under:-

International Ship Repair Facility (ISRF)

- Start date: 08.01.2018
- Target completion: December, 2023 (allied works by May, 2024)
- Cost: Rs. 970Cr
- Area: taken from CoPT
- Scope of work:
    - Shiplift for vessels of size 130 m LOA x 25 m Beam, Capacity:- 6000 T
    - 06 Work stations for repair of vessels
    - 4 nos. Cranes
    - 1.25 Km Berthing space for afloat repair of vessels: Jetty 1 (277 m) and Jetty 2 (537 m)

- Baffle wall & floating gate

New Dry Dock (NDD)

- Start date: 01.06.2018
- Target completion: December, 2023
- Cost: 1799Cr
- Area: At premises of CSL
- Scope of work:
  - Dock Size: 310m x 75/60m x 13m (Stepped Dry Dock)

50. The new dock will augment the Company's shipbuilding and ship repair capacity essentially for building specialized and technologically advanced vessels such as LNG Carriers, Aircraft Carriers of higher capacity, jack up rigs, drill ships, large dredgers and repairing of offshore platforms and larger vessels.

51. The cost disadvantages of ship repair in India are also intended to be reduced and efficiencies to be enhanced:-

Reduction in repair cost in India by at least 40% by:-

- Higher costs of procurement due to import requirements
- Enhance efficiency by improved working processes and modern tools

Reduction of Turnaround Time (TRT) for repairs in Indian shipyards by at least 60% by-

- Simplify procedures for procurement and custom clearances
- Shortage of specialized lifting/material handling equipment and shore cranes
- Standardize operations and increase training manpower

- Shorten lead times in procurement and operations which are constrained by policies of public undertaking structure

52. The Ministry is also taking other initiatives like channelising of domestic demands leveraging Public Procurement (Preference to Make in India), Order 2020, reduction of GST from 18% to 5%, infrastructure development through better access to financial instruments, providing better opportunities for overall development and enhanced business in the Industry by creating free trade depots, maritime clusters etc. For acquisition of any type of vessel/ repair of vessel by Government Department/ Agencies including public Sector Undertakings (PSUs) through global tendering process, the Ministry of Ports, Shipping and Waterways, existing policy of RoFR (Right of First Refusal) would continue to be implemented. This is a major policy to create demand.

53. The Committee notes that India is suitably located to offer repair services for the Indian Navy as well as the US Navy for its 5th and 7th Fleet deployed in the Indian Ocean and the Arabian Sea. It has also been seen that many contracts of the US Navy have been awarded to either private Indian Shipyards or to other foreign shipyards. Indian PSU Shipyards are not strong contenders for repair amidst global competition. The Committee has also learnt from media reports that the US Navy and L&T have signed a 5 year Master Ship Repair Agreement (MSRA) which shows that the US is committed to utilize ship repair facilities on a regular basis at the L&T shipyard in Katupalli in Tamil Nadu. The Committee understands that Mazagon Docks Shipbuilders have also concluded an agreement with an entity of the US Navy. While appreciating the above-said achievements, the Committee feels that while other Asian countries, notably Singapore and Japan have bagged many foreign ship repair orders, India has lagged behind due to inadequate infrastructural support services needed for ship repair. The Committee recommends that the Ministry may make efforts to

improve the infrastructure to enable PSU shipyards to bag ship repair orders.

54. The Committee notes that as per the Statistics of the Ministry placed at Annexure-II, 725 ships were repaired in private shipyards during the years from 2019-20 to 2021-22 whereas 448 ships were repaired in Government/PSU shipyards in the same period. Among Government/PSU shipyards, Cochin Shipyards handles the bulk of the ship repair market. In 2021-22 for example, out of the total 157 ships repaired in the public sector shipyards, 100 ships were repaired by CSL, 33 by Goa Shipyard and 14 by Hindustan Shipyard Ltd. That is, out of the approximately 24 Shipyards in the country, only 3 Shipyards are carrying out Ship Repair works of significance. The Committee notes that among the Major Ports, the Syama Prasad Mukhejee Port (SMPK), Kolkata has 5 Dry Docks while the Mumbai Port, Vishakhapatnam Port, Paradip Port and Deendayal Port have 1 Dry Dock each but no ship repair activity has been undertaken by these Major Ports in the last few years. The Committee desires to know the reason for no ship repair activity in the Dry Docks of the above-said Major Ports and also whether the facilities in the Dry Docks are lying unutilized or are being utilized for other purposes. The Committee also sought to know the plans of the MoPSW for augmenting facilities at the these ports to carry out ship repair actitvities.

55. The Committee, on an earlier Study Visit to Mumbai Port, had been informed that the Mumbai Port has been having financial difficulties and the only solution appeared to be monetization of its landbank. Due to the nearby JNPA port, there was no scope for container or any other type of cargo except liquid bulk cargo. The Port had a Ship breaking facility second only to Alang which is now almost closed. The Committee desires to know whether Ship Repair activities can be revived in the Mumbai Port to offset its financial difficulties.

56. The Committee also observes that a Ship Repair facility at Pandu first announced in August, 2021 is now rescheduled for completion by 2025. This facility at Pandu would enable repair of inland vessels with dry docking in the North-Eastern Region itself instead of having to go to Kolkata, which will result in less cost and shorter repair time. The Committee would like to know the status of the project at Pandu.

SHIP RECYCLING

57. Ship recycling plays an integral role in the maritime industry's life cycle, addressing the end-of-life phase of vessels. The ship recycling industry converts end-of-life ships into steel bars, billets, and rods for the construction industry, as well as electronic equipment and tools for homes and small businesses. On the one hand, such transformation of ships into new products positively affects the environment as it avoids extracting iron ore — which is often associated with energy-intensive processes. In addition, the usage of ferrous scrap extracted from vessels promotes the use of Electric Arc Furnaces that usually emit lower amount of carbon-di-oxide per ton of steel produced compared to Blast Furnaces/Basic Oxygen Furnaces.On the other hand, ship recycling poses high risks to human health and the environment if it is not carried out in a proper and safe way, thereby leading to high levels of fatalities, injuries and work-related diseases. Ships contain many toxic substances, such as PCBs, PVCs, PAHs, TBT, mercury, lead, and asbestos, which can intoxicate workers and can have significant negative effects on the environment when dumped into the soil and coastal waters. Thus, while the practice can contribute to a circular economy by recycling valuable materials, if not carried out properly, it can pose significant environmental degradation as well as pose safety risks to the workers in the industry

58. The history of modern ship breaking dates back to the 1960s and 1970s wherein ship breaking was largely carried out in large ship building yards of the developed countries such as United States of America and Europe. The

high costs involved in demolition of a ship in a safe and sound manner along with the development of stringent environmental regulations led to shifting of the ship recycling business, in the early 1990s, to South Asian countries such as Bangladesh, India, China, Pakistan and Turkey.

59. Currently, these five leading ship recycling nations collectively account for nearly 97 percent of the world's ship recycled tonnage. However, last decade witnessed China slowing down their ship recycling business due to the domestic production of steel and change in their policy. Thus at present the ship recycling business rests with the rest of the 4 countries with major ship recycling in South East Asia in Bangladesh, India and Pakistan. As per UNCTAD report, in 2022, India (30.98%), Bangladesh (38.13%), Pakistan (17.23%) and Turkey (6.33%) accounted for 92.66 per cent of known ship scrapping across the world.

60. India, once the leader in the global ship recycling market with a substantial 40 percent share, has now slipped to the second position, witnessing a decline in its market share to approximately 25 percent. In 2022, India recycled nearly 2.34 million gross tons (GT), securing the second position behind Bangladesh, which recycled nearly 2.87 million GT during the same period.

61. The Indian Government has set a goal to double its existing ship recycling capacity through the Maritime India Vision 2030 (MIV 2030) initiative.

62. Regulatory framework for Sustainable Ship Recycling in India.

(i) Ship Breaking Code in 2013:

In 2013, the Government of India enacted the Ship Breaking Code, a comprehensive set of guidelines that encompasses various statutes and rules related to the management of hazardous waste disposal, Factory Rules, Explosive Act, Petroleum Rules, Atomic Regulatory Board Act, Labour Laws, Employee State Insurance Corporation Act, Air Act, Water Act, etc. This code was formulated in consultation with

Directorate General of Shipping, Mumbai, ensuring alignment with the stipulation outlined in the Hong Kong Convention for Ship Recycling (HKC) 2009. Hong Kong Convention for Ship Recycling, 2009

63. The growing demand for ship recycling has rightly led to an increase in regulatory pressure at both national and international levels. This regulatory demand resulted in the development of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (HKC) by the International Maritime Organization (IMO) in 2009. This Convention aims to establish mandatory standards for safety and environmental protection standards at ship recycling yards. Despite its adoption in 2009, it is noteworthy that the Hong Kong Convention has not yet come into force.

64. The Convention becomes internationally effective 24 months after being ratified by 15 States, representing 40 per cent of world merchant shipping by gross tonnage and a combined maximum annual ship recycling volume not less than 3 per cent of their combined tonnage. Meeting these criteria, the Convention is set to enter into force on 25th June 2025, following accession by Bangladesh and Liberia on 26th June 2023. The Convention will provide a global standard for ship recycling, promoting level-playing field amongst ship recycling facilities worldwide. The potential impact is a reduction in incentives for ship-breaking in countries with lax environmental and safety regulations. Currently, shipyards are investing between Rs. 5 crores to 10 crores each to meet international standards, creating a financial disparity of about 30-50 dollars between India and Bangladesh.

65. The implementation of Hong Kong International Convention (HKC) in July 2025 opens up more opportunities to the Indian Ship

Recycling Industry. Currently India is having 114 Ship Recycling Yards that are in compliance with HKC standards and an additional 27 yards are on the verge of being included in to the European list of approved Ship Recycling yards as per European Union Ship Recycling Regulations (EUSRR). This number is nearly 4 times the combined total of HKC compliant yards in other major ship recycling states.

66. Flag Administrations and Shipping Companies will now have to partner with HKC Complaint yards in India to ensure that their ships are recycled in safe and environmentally sound manner. Further, a Voluntary Resolution encouraging member states to recycle their ships in HKC complaint yards has been adopted at the Assembly of the International Maritime Organization (IMO), London, at the initiative of India.

67. Recycling of Ships Act, 2019

The Recycling of Ships Act of 2019 places restrictions and prohibitions on the use and installation of hazardous materials on ships, regardless of whether they are intended for recycling. New ships will be subject to immediate restrictions or prohibitions on hazardous materials starting from the legislation's effective date., whereas existing ships will have five years to comply It's important to note that these restrictions or prohibitions regarding hazardous materials do not apply to government-operated warships and non-commercial ships.

SHIP RECYLING YARDS IN INDIA

68. At present India has more than 131 recycling yards dismantling end-of-life ships to extract various types of scraps and equipment for recycling and reusing. Out of these 131 yards, nearly 111 yards are currently complying with the requirements of Hong Kong Convention (HKC). In addition, nearly 25 yards are in the process of getting enlisted under European Union (EU) Ship Recycling Regulations (EU-SRR 1257/2013).

List of Ship Recycling Yards in India				
	Location of Yards	**Total no. of Yard Plots**	**No of allotted yards**	**No. of HKC Complaint yards**
1	Alang, Bhavnagar (Dt), Gujarat	153	131	111
2	Steel Industries Limited Kerala (SILK), Thrissur (Dt), Kerala	1	1	0
3	Amar Iron Udyog , Syama Prasad Mukherjee Port, Kolkata	1	1	0

69. The Committee was informed that the Alang Ship Recycling Yard located in Bhavnagar, Gujarat, is one of the most preferred ship recycling destinations around the world and caters to nearly 98 per cent of the recycling capacity inIndia.

70. Alang which has an almost 10 kilometre sea-front, favourable for ship recycling, was started in 1983. Alang has a very high inter-tidal gradient due to which very big ships can come up to the shore in Alang with very little expenditure involved. More than 400 ships a year are being recycled at Alang

on average and a total of more than 8,600 ships and 68 million tones of LTD has been recycled at Alang, which is almost 98 per cent of India's total and 32 per cent of global volume of the ships. It provides direct employment to 15,000 persons and indirect employment to 1,50,000 persons.

71. A complete ecosystem and circular economy exists in Alang wherein Ship- recyclers completely breakdown the ships by cutting and processing. The waste material goes for waste management facilities and other materials, mostly steel, go for reuse. There are more than 60-plus induction furnaces and 80-plus re- rolling mills at Bhavnagar which re-rolls this steel and provides TMT bars. The commodities which come out of the ship are sold directly to the public through more than 200 retail and wholesale shops at Alang. There is systematic disposal of TSDF (Treatment, Storage and Disposal Facilities), and environmentally and ecologically-compliant method for ship recycling is being used. Further, the cutting process is done by high pressure water in impermeable floors so that there is no water leakage into the sea.

72. The plots at Alang are rented out on lease at a rent of three hundred rupees per square metre. Additional charges include development charges and housing cess which are subsidized during recession times so that plot owners do not suffer.

73. Upon a query of the Committee about the percentage of expenses spent by a shipyard on recycling, the representatives of the GMB informed that it varies from ship to ship. It would be more for a Reefer ship which contains more glass wool and hazardous material. In a container or bulker ship, the hazardous material is less so it would cost less. Generally it costs 15-20 dollars to handle the hazardous material and Rs 20 lakh to maintain the HKC certification which Pakistan and Bangladesh do not have to pay.

74. Upon query of the Committee regarding the technical know-how

received from bilateral agreements, the representatives of the GMB informed that due to the Basel Ban, presently there is no bilateral agreement with any European countries. But the GMB and Ship Recyling Association is in talks with ship recycling associations in other countries. The Committee was also informed that nowadays ships are built according to a highly advanced technology. The concept now is that when a ship is built, at that time itself its recycling plan is prepared. In new ships, hazardous waste like asbestos is not allowed.

Initiatives taken for reviving the Ship Recycling Industry -

75. The representatives of the Gujarat Maritime Board informed the Committee about the initiatives taken by the Board for reviving the industry. The following seven major initiatives which were required to be taken for HKC compliance have been completed-

- recycling facility management plan
- ship-specific dismantling plan
- oily waste reception facility
- paint-chip removal plan
- asbestos waste handling
- hazardous waste management and water treatment plants.

76. The EU norms are a little stricter than the HKC norms. The EU Committee inspected the Alang yards and required that certain conditions must be metfor EU certification.

77. The initiatives taken for EU compliance are enumerated below –

- Development of advanced healthcare facilities at Alang. Fifty-six per cent of the work of hospital facilities like MRI, CT Scan, ICU, 35-beds, doctors, X-Ray, Operation Theatre, Advanced laboratory,

Pharmacist has been completed.

- Scientific treatment of effluents including hazardous and toxic materials.
- Mandatory use of PPEs with minimum fatal accidents. Key facility equipment include fire fighting installation and water storage, breathing sets for emergency situation or gas meters for explosive gases, Co_2, H_2S and oxygen metres. All operation procedure is under the supervision of certified safety officer only Development of an advanced labour safety and training institute. Since its operation in 2003, more than 1.5 lakh workers have been trained there.
- Compulsory training for all new workers
- Downstream waste management. 99.95 per cent of the salvaged materials are dispatched to downstream industries and traders for use with less than 0.05 per cent treated as a waste. The remaining 0.05 % which is hazardous waste is treated at a facility at Alang.
- Environmental impact analysis, regular monitoring of gas emission, sea water and soil water around the entire yard area by independent agencies like the Central Salt Research Organisation. There has not been any oil spilling at Alangtill date.
- Twenty-seven plots have applied for EU Certification so that EU ships canalso be recycled at Alang.

78. The Ministry also informed that the Government of India has also taken thefollowing measures to help the ship recycling industry —

- reduced the customs duty on ship recycling from 2.5 per cent to zero, which hashelped the yard owners.
- incentives of Rs.50 lakhs given as subsidy to those yards which are

HKCcertified.

- Central Government provided financial assistance of Rs.11 crore for construction of labour housing colony, Rs.20 crore for hospital, Rs.49 crore for obtaining the HKC-compliant plot and Rs.30 crore for providing training
- Annual fix charges have also been relaxed for the yards to the tune of Rs.52 crore in the financial year 2020-21, 2021-22 and Rs.28 crore in 2023-24 GMB and Government of India participated in EUSR Summit to boost the business.
- Government has also resolved the issue pertaining to Customs, GPCB, ESICand also some finance related issues.
- as a long-term measure, a Master Plan of Alang-Sosiya Ship Recycling Yard to develop new plots and double the capacity of the plots has been made. Right now, the plot size is generally 40-80 metres. Bigger plots of sizes 200 to 300 metres are proposed to be developed since for bigger ships, bigger size of plot is required for safety reasons.
- latest beaching methods which are compliant with the international standards.

79. Besides, the GMB has provided free housing facility for one thousand workers with the help of financial assistance from the Central Government. Temporary settlements and encroachments removed in consultation with local authority. A few community centres have also been made but are not operational because not many labourers have shifted to the new housing facility.

80. The Committee was informed that the following two main issues have contributed to the decline in India's share of recycling -

- the policy change by the Bureau of Indian Standards (BIS) due to which the TMT (Thermo-Mechanically Treated) steel bars made from recycled steel from ships are no longer recognized for reinforcement purposes, leading to significant revenue loss and reduction in turnover for the ship-breaking industries at Alang. A Committee under the chairmanship of BIS is examining the issue and is due togive its report shortly.
- non-arrival of ships from EU countries due to the Basel Ban Agreement of 2019 which prohibits any hazardous material of OECD countries from being taken to non-OECD countries.

81. Besides, other reasons for the decline are –

- Business cycle of the world economy is declining
- Shortage of ships and increased freight rate
- Environmental and safety compliance increased the cost of recycling
- Impact of the Covid pandemic

82. The Committee was also informed about the status of the two main issuesdue to which ship recycling has declined in India-

(i) Regarding the Basel ban on export of hazardous material from OECD to non- OECD countries, in 2019, the European Union decided that any hazardous waste, which is being produced in the OECD countries, will not be exported to the non-OECD countries, and ship-breaking comes under hazardous waste. That is why, the ships were stopped from being transferred from EU countries to the non-OECD countries for recycling. The status on this issue is that a political agreement between the European Parliament and the European Council has been reached in November, 2023. With this agreement, by April, 2024, the EU will allow their ships to come to

India after Indian yards earn EU certification. Further, Europe hardly has the capacity to recycle even 10% of their own ships and would have to send 90% of their ships for recycling to India and other Asian countries. A ship has an average lifetime of 30-35 years and many ships would be completing this lifetime in the next few years.

(ii) Regarding the TMT bars issue, the Committee was informed that 95% of a ship is made of steel and before the enforcement of the BIS standards, 60 per cent of ship recycling plate was used as TMT bar. In 2012, BIS deleted TMT bars of over 6 mm diameter manufactured from recycled steel plates from its list of approved products. After the quality control order has been implemented, the steel has to be sent to furnace plant to make ingots which are then used to make the TMT bars. However, if the reclaimed steel plates can be rolled directly into TMT bars, the melting cost of making steel into ingots can be avoided. Many small industries in the Bhavnagar zone were selling the TMT bars made from recycled ship steel. Because of this issue, many of the small industries have closed down and thousands of workers have lost their jobs.

83. The representative of the Ship Recyling Industries Association informed the Committee that the ship steel plate is as per the ASTM-A131 brand, which is much above the BIS standards. The Committee studying the issue had visited the plant and its report is awaited.

84. The Committee appreciates the steps taken by all agencies involved to resolve the issues arising out of the Basel Ban Agreement and that EU ships may start to arrive in India from April, 2024 which would restore much of the problems affecting the recycling industry. Regarding the issue of TMT bars, the Committee has learnt from media reports that the Committee set up by the Steel Ministry to look into the issue of the

manufacturing TMT bars from ship steel has reportedly been unable to devise an SoP (Standard Operating Procedure) for usage of ship plates without testing of chemical composition. Non-standardised offerings and the absence of wider data are seen as major reasons for the rejection of using ship breaking steel plates for making TMT bars. The Committee studying the issue has also suggested that ship breakers can sell the plates along with grade certificate and chemistry. The Committee recommends that the Ministry, GMB and Ship Recyclers may cooperate with the Committee and ensure that large size data is made available for long-term durability studies to settle the issue of use of TMT bars for structural purposes. The Committee also recommends that the industry may explore the possibility of making other forms of steel, apart from TMT bars, from ship scraps, like grills, strips and other bars which may not require the same standards as TMT bars.

85. The Committee has been informed that due to the issue of the TMT bars, thousands of workers employed in small industries selling such bars have lost their jobs. The Committee recommends that workers from such allied industries may be trained in various processes of ship recycling. The Committee also desired to know the impact of the incentives provided by the Government of India and the Gujarat Maritime Board and socio- cultural benefits being given to the people of the area.

86. While appreciating the efforts being made to establish India once again as the top country in ship recycling as the industry is an economic driver for India, the Committee underlines the importance of strategic planning to ensure that environmental conditions and workers safety and health standards are not compromised in the pursuit of doubling the capacity of the industry by 2030.

87. TheCommittee had been informed at the presentation by the

representatives of the Ship Recyling Association that trade specific diseases like those found in the mining industry were not present in theShip Recyling Industry and the risk of accidents was the main occupational hazard. The Committee observes that exposure to some pollutants like asbestos only manifest after long periods post exposure. The Committee recommends that comprehensive risk assessment studies due to exposure to pollutants in the ship recycling industry may beconducted. Like the regular monitoring of gas emissions and sea waterand soil water, the pollution exposure of workers should also be monitored continuously.

88. The Committee observes that as informed by the GMB, the activities at Alang does not encroach any vegetation cover and infact the green covers are seen to have been increased by more than 10% in the last 15 years. While appreciating the non-encroachment of green areas, the Committee further recommends that green areas like herbal gardens and green avenues may be developed in the residential areas for labourers to counter the ill effects of ship breaking activities which is highly polluting. The Community Centres should also have libraries, film shows and other recreational facilities for the psychological well being of labourers and their families.

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RECOMMENDATIONS/OBSERVATIONS - AT A GLANCE

SHIP BUILDING

The Committee appreciates the initiatives of the Ministry for its efforts under the "Make In India" programme for promotion of shipbuilding activities . The Committee observes that Approved Standardized Tug Design and Specifications (ASTDS) have been issued by the Ministry to assist the Major Ports in expeditious implementation of the Make in India Order. The Committee desires to know how many locally built Tugs have been ordered by the Major Ports since the implementation of this Order in September, 2020.

(Para 10)

FINANCIAL ASSISTANCE POLICY

The Committee observes that the earlier subsidy scheme of the Ministry of 5 years offered shipbuilders 30% extra on building ocean-going merchant vessels that are more than 80 metres in length, if they are manufactured for the domestic market. For export orders, however, ships of all types and capacities were eligible for the subsidy. In the new financial assistance scheme, assistance will be given for all types of ships irrespective of size. In the new scheme, both state-owned and private yards will get the assistance only after they construct and hand over to the ship to the buyer to ensure timely delivery of ships. The new financial assistance scheme was therefore for double the period of the earlier subsidy scheme, the focus extended for all ships and ensured timely delivery which had been a constraint in the earlier scheme. The Committee also observes that when commercial orders dried up in the wake of the 2008 financial crisis, Indian shipyards were focusing mainly on defence orders to stay afloat. The Government's financial assistance policy was meant to help bring in more and major commercial ship building orders.

(Para 13.5)

However, the Committee observes that in the nearly 8 years since the launch of the scheme, only a paltry 6-7% of the Rs. 4000 corpus has been utilized. The target of Rs. 200 crores for the next financial year appears to be bit rather unrealistic considering the poor response of the past few years. Since there are only 2 years left for the Scheme, it appears that the financial benefits under the Scheme have not been utilized to the extent possible. The Committee disagrees with the Ministry's contention that the increase in financial assistance availed over the years is significant enough to prove that the volume of ship building is increasing in India. The Committee desires to know how many of the 31 Shipyards approved under the policy have actually utilized the benefits of the

scheme and how many ships have been built by individual shipyards under the Scheme. The Committee may also be informed of the type of vessels that have been built by the Shipyards which have actually utilized the benefits. While CSL in the government sector has been able to win orders from global clients, the Committee desires to know whether the private shipyards benefitting under the scheme have also been competitive enough to win global orders to build large container ships. The leading Ship Building nations of China, South Korea and Japan thrive on export orders to build their shipbuilding expertise. The Committee while appreciating the Government's efforts to create an ecosystem for boosting shipbuilding recommends that the Ministry should evaluate the reasons for the poor utilization of the financial assistance scheme and whether technical reasons like high imports of material for shipbuilding, less automation in the shipbuilding processes are affecting the competitiveness of Indian Ship yards.

(Para 13.6)

Promotion of tonnage under Indian Flag

If India is to be positioned among the top 10 nations in Ship Building, then an ecosystem which would address the infrastructure, regulatory, fiscal issues and capability development is to be developed. The Committee observes that as per the Rangarajan Commission, six indicators of sectors to be classified under Infrastructure were –

(a) natural monopoly;

(b) non-tradability of output;

(c) bestowing externalities on society;

(d) high-sunk costs or asset specificity;

(e) non-rivalness (up to congestion limits) inconsumption; and,

(f) possibility of price exclusion. The Commission had recommended the inclusion of Ships and other Vessels on the basis of the characteristics from (d) to (f).

(Para 20)

The Committee appreciates the grant of infrastructure status to Shipyards due to which the Ship Building industry would be able to avail long term funding at lower rates and for various forms of financial assistance, benefits and concessions. The Committee also observes that the Government is planning to give infrastructure status to coastal shipping. The Committee recommends that the Government may consider extending infrastructure status granted to Shipyards to all ships and Vessels, not only coastal shipping.

(Para 21)

The Committee recommends that the production of specialized steels domestically should be incentivized and strategic partnerships with global suppliers should be established to ensure a cost-effective supply chain to address the high costs of materials. The Committee recommends that setting up a specialized financing institution/marine finance scheme could provide a much-needed boost to the shipbuilding industry. The Ministry may also explore the possibility of getting a risk insurance cover scheme for ships in India on the lines of the ones in Korea and China which would attract domestic and international investors to participate in financing maritime projects. The Committee observes that the private sector ship building companies are mostly struggling with hardly any profits, the most recent casualties being Western India, Bharati and ABG Shipyards. The Committee recommends that the private sector must be considered as much of a stakeholder in shipping as the public sector and a level playing field for both sectors must be the concern of the Government.

(Para 22)

The Committee observes that Skilled manpower is the most essential prerequisite in Ship Building industry. Ensuring proper education and training could bolster the effectiveness of the industry. The Committee observes that as per studies the labour productivity value for India is approximately 10 times lower than the major shipbuilding nations. All these translate to about 20-25 per cent cost advantage for major shipbuilding nations vis-à-vis India. The Committee recommends that investments in automation should be encouraged in order to improve labor productivity and reduce costs.

(Para 23)

One of the constraints of shipbuilding in India is the limited investment in R&D in ship design and innovation. The Committee recommends that the Government focus on skill development and developing an R&D base to increase the competitiveness of the Indian shipbuilding industry.

(Para 24)

The MIV document also advocates creation of a Maritime Development Fund to provide easy access to working capital and long-term finance needs across marine sectors. The Committee recommends that the Ministry may implement the creation of the Fund which can give access to Indian ship owners to improve their capacity and shipyards to improve the infrastructure

(Para 25)

GREEN SHIP BUILDING

The Committee observes that ship engines and ship fuels are undergoing rapid change and moving away from fossil fuels to new fuels like green methanol, green ammonia etc. In the near future, every goods/service will have an identifiable carbon footprint and carbon neutral products and services will have a competitive advantage. While the Committee appreciates the initiatives of CSL in constructing green vessels, there does not appear to be the same efforts on the part of other shipyards. The Committee recommends that the National Centre for Excellence in Green Ports and Shipping may act as a nodal entity for green shipping so that there is a coordinated effort by all shipyards to position India as a global hub for green shipping.

(Para 32)

Overall, the Committee observed that faced with high financial costs, the shipbuilders in India encounter difficulties in expanding their operations and providing competitive pricing to end-users. This predicament has led to low orders, diminished profits and a constrained capacity for reinvestment.

(Para 33)

As per a FICCI report, Indian shipyards require about 25-35% of the ship's cost as working capital during construction, with interest rates averaging 10-10.5%. In contrast, overseas shipbuilding yards enjoy significantly lower rates along with lower-interest export credit. The Committee, therefore, recommends that measures to reduce interest rates on working capital for Indian shipyards be explored .

(Para 34)

The Committee feels that a potential Production Linked Incentive (PLI) scheme can go a long way to boost the shipbuilding industry. This multifaceted scheme could include output-based rewards, wherein shipbuilders stand to receive incentives commensurate with the quantity and type of ships they manufacture. Additionally, the PLI scheme might introduce investment incentives tailored to encourage shipbuilders to modernize their facilities and integrate advanced manufacturing technologies. Shipbuilding entities making investments in upgrading infrastructure and adopting state-of-the-art manufacturing processes could qualify for these investment incentives. This dual approach of incentivizing both production and investment could create a dynamic environment that propels the shipbuilding industry towards technological advancement, increased efficiency and global competitiveness.

(Para 35)

SHIP REPAIR

The Committee notes that India is suitably located to offer repair services for the Indian Navy as well as the US Navy for its 5th and 7th Fleet deployed in the Indian Ocean and the Arabian Sea. It has also been seen that many contracts of the US Navy have been awarded to either private Indian Shipyards or to other foreign shipyards. Indian PSU Shipyards are not strong contenders for repair amidst global competition. The Committee has also learnt from media reports that the US Navy and L&T have signed a 5 year Master Ship Repair Agreement (MSRA) which shows that the US is committed to utilize ship repair facilities on a regular basis at the L&T shipyard in Katupalli in Tamil Nadu. The Committee understands that Mazagon Docks Shipbuilders have also concluded an agreement with an entity of the US Navy. While appreciating the above-said achievements, the Committee feels that while other Asian countries, notably Singapore and Japan have bagged many foreign ship repair orders, India has lagged behind due to inadequate infrastructural support services needed for ship repair. The Committee recommends that the Ministry may make efforts to improve the infrastructure to enable PSU shipyards to bag ship repair orders.

(Para 53)

The Committee notes that as per the Statistics of the Ministry placed at Annexure-II, 725 ships were repaired in private shipyards during the years from 2019-20 to 2021-22 whereas 448 ships were repaired in Government/PSU shipyards in the same period. Among Government/PSU shipyards, Cochin Shipyards handles the bulk of the ship repair market. In 2021-22 for example, out of the total 157 ships repaired in the public sector shipyards, 100 ships were repaired by CSL, 33 by Goa Shipyard and 14 by Hindustan Shipyard Ltd. That is, out of the approximately 24 Shipyards in the country, only 3 Shipyards are carrying out Ship Repair works of significance. The Committee notes that among the Major Ports, the Syama Prasad Mukhejee Port (SMPK), Kolkata has 5 Dry Docks while the Mumbai Port, Vishakhapatnam Port, Paradip Port and Deendayal Port have 1 Dry Dock each but no ship repair activity has been undertaken by these Major Ports in the last few years. The Committee desires to know the reason for no ship repair activity in the Dry Docks of the above-said Major Ports and also whether the facilities in the Dry Docks are lying unutilized or are being utilized for other purposes. The Committee also sought to know the plans of the MoPSW for augmenting facilities at the these ports to carry out ship repair actitvities.

(Para 54)

The Committee, on an earlier Study Visit to Mumbai Port, had been informed that the Mumbai Port has been having financial difficulties and the only solution appeared to be monetization of its landbank. Due to the nearby JNPA

port, there was no scope for container or any other type of cargo except liquid bulk cargo. The Port had a Ship breaking facility second only to Alang which is now almost closed. The Committee desires to know whether Ship Repair activities can be revived in the Mumbai Port to offset its financial difficulties.

(Para 55)

The Committee also observes that a Ship Repair facility at Pandu first announced in August, 2021 is now rescheduled for completion by 2025. This facility at Pandu would enable repair of inland vessels with dry docking in the North-Eastern Region itself instead of having to go to Kolkata, which will result in less cost and shorter repair time. The Committee would like to know the status of the project at Pandu.

(Para 56)

Regulatory framework for Sustainable Ship Recycling in India.

(ii) Ship Breaking Code in 2013:

In 2013, the Government of India enacted the Ship Breaking Code, a comprehensive set of guidelines that encompasses various statutes and rules related to the management of hazardous waste disposal, Factory Rules, Explosive Act, Petroleum Rules, Atomic Regulatory Board Act, Labour Laws, Employee State Insurance Corporation Act, Air Act, Water Act, etc. This code was formulated in consultation with Directorate General of Shipping, Mumbai, ensuring alignment with the stipulation outlined in the Hong Kong Convention for Ship Recycling (HKC) 2009. Hong Kong Convention for Ship Recycling, 2009

(Para 62)

<u>Initiatives taken for reviving the Ship Recycling Industry</u>

The Committee appreciates the steps taken by all agencies involved to resolve the issues arising out of the Basel Ban Agreement and that EU ships may start to arrive in India from April, 2024 which would restore much of the problems affecting the recycling industry. Regarding the issue of TMT bars, the Committee has learnt from media reports that the Committee set up by the Steel Ministry to look into the issue of the manufacturing TMT bars from ship steel has reportedly been unable to devise an SoP (Standard Operating Procedure) for usage of ship plates without testing of chemical composition. Non-standardised offerings and the absence of wider data are seen as major reasons for the rejection of using ship breaking steel plates for making TMT bars. The Committee studying the issue has also suggested that ship breakers can sell the plates along with grade certificate and chemistry. The Committee recommends that the Ministry, GMB and Ship Recyclers may cooperate with the Committee and ensure that large size data is made available for long-term

durability studies to settle the issue of use of TMT bars for structural purposes. The Committee also recommends that the industry may explore the possibility of making other forms of steel, apart from TMT bars, from ship scraps, like grills, strips and other bars which may not require the same standards as TMT bars.

(Para 84)

The Committee has been informed that due to the issue of the TMT bars, thousands of workers employed in small industries selling such bars have lost their jobs. The Committee recommends that workers from such allied industries may be trained in various processes of ship recycling. The Committee also desired to know the impact of the incentives provided by the Government of India and the Gujarat Maritime Board and socio- cultural benefits being given to the people of the area.

(Para 85)

While appreciating the efforts being made to establish India once again as the top country in ship recycling as the industry is an economic driver for India, the Committee underlines the importance of strategic planning to ensure that environmental conditions and workers safety and health standards are not compromised in the pursuit of doubling the capacity of the industry by 2030.

(Para 86)

The Committee had been informed at the presentation by the representatives of the Ship Recyling Association that trade specific diseases like those found in the mining industry were not present in theShip Recyling Industry and the riskof accidents was the main occupational hazard. The Committee observes that exposure to some pollutants like asbestos only manifest after long periods post exposure. The Committee recommends that comprehensive risk assessment studies due to exposure to pollutants in the ship recycling industry may be conducted. Like the regular monitoring of gas emissions and sea waterand soil water, the pollution exposure of workers should also be monitored continuously.

(Para 87)

The Committee observes that as informed by the GMB, the activities at Alang does not encroach any vegetation cover and infact the green covers are seen to have been increased by more than 10% in the last 15 years. While appreciating the non-encroachment of green areas, the Committee further recommends that green areas like herbal gardens and green avenues may be developed in the residential areas for labourers to counter the ill effects of ship breaking activities which is highly polluting. The Community Centres should aAlso have libraries, film shows and other recreational facilities for the psychological well being of labourers and their families.

(Para 88)

ANNEXURES

Annexure I

S.No	Name of Operational Shipyard	Ownership	State	Present Status
1	Goa Shipyard Limited	GoI Undertaking, MoD	Goa	Operational
2	Garden Reach Shipbuilders And Engineers Ltd	GoI Undertaking, MoD	West Bengal	Operational
3	Hindustan Shipyard Limited	GoI Undertaking, MoD	Andhra Pradesh	Operational
4	Mazagon Dock Shipbuilders Ltd	GoI Undertaking, MoD	Maharastra	Operational
5	Cochin Shipyard Limited	PSE	Kerala	Operational
6	Udupi Cochin Shipyard (Previous name: Tebma Shipyards Limited)	PSE	Karnataka	Operational
7	Hooghly Cochin Shipyard Limited	PSE	West Bengal	Operational
8	Shalimar Works Ltd	PSU	West Bengal	Operational
9	Vijai Marine Services	Private	Goa	Operational
10	Mandovi Drydocks	Private	Goa	Operational
11	L &T Shipbuilding Limited	Private	Tamilnadu	Operational
12	Shoft Shipyard Private Limited	Private	Gujarat	Operational
13	Chowgule And Company Pvt. Ltd.	Private	Goa	Operational
14	Titagarh Wagons Limited	Private	West Bengal	Operational
15	Dempo Shipbuilding and Engineering Private Limited	Private	Goa	Operational

16	Marine Frontiers Private Limited	Private	Maharastra	Operational
17	Navgathi Marine Design And Constructions Pvt Ltd	Private	Kerala	Operational
18	Konkan Barge Builders Pvt Ltd	Private	Maharastra	Operational
19	Waterways Shipyard Pvt Ltd	Private	Goa	Operational
20	Synergy Shipbuilders	Private	Goa	Operational
21	San Marine Shipyard	Private	Andhra Pradesh	Operational
22	A H Wadia Boat Builders	Private	Gujarat	Operational
23	MOC Shipyards Private Limited	Private	Maharastra	Operational
24	Zuari Shipyard Private Limited	Private	Goa	Operational
25	Victoria Shipbuilding And Engineerings LLP	Private	Goa	Operational
26	Atreya Shipyard Private Limited	Private	Goa	Operational
27	Navalt Solar And Electric Boats Private Limited	Private	Kerala	Operational
28	A C Roy Shipbuilders Private Limited	Private	West Bengal	Operational
29	Chowgule Sbd Private Limited	Private	Karnataka	Operational
30	KSINC	PSU	KERALA	Operational
31	Sea Blue Shipyard Ltd	Private	KERALA	Operational
32	Island Ship Repairers	Private	A& N Islands	Operational
33	Bristol Boats Pvt, Ltd	Private	KERALA	Operational
34	West Coast Shipyard Ltd	Private	Goa	Operational

35	Aquarius Shipyard Pvt. Ltd.	Private	Goa	Operational
36	Praka Engineering shipyard	Private	Goa	Operational
37	Modest Infrastructure Pvt. Ltd	Private	MAHARASTRA	Operational
38	Sunrich Ship Management Pvt Ltd	Private	Maharastra	Operational
39	Jhellingham Engineering Works Pvt Ltd	Private	West Bengal	Operational
40	Aaditya Shipping And Logistics	Private	West Bengal	Operational
41	* Vipul Shipping & Engineering works	Private	Goa	Operational
42	* Patra Shipping Pvt. Ltd	Private	West Bengal	Operational
43	Timblo Drydocks Pvt Ltd	Private	Goa	Minimal Active
44	Abhishek Engineers Goa	Private	Goa	Minimal Active
45	Chidambaram Shipcare Pvt. Ltf	Private	Tamilnadu	Minimal Active

सत्यमेव जयते

STATISTICS OF INDIA'S SHIP BUILDING AND SHIP REPAIRING INDUSTRY

2021-22

Government of India
Ministry of Ports, Shipping and Waterways
Transport Research Wing
New Delhi

STATISTICS OF INDIA'S SHIP BUILDING AND SHIP REPAIRING INDUSTRY

2021-22

Government of India
Ministry of Ports, Shipping and Waterways
Transport Research Wing
New Delhi

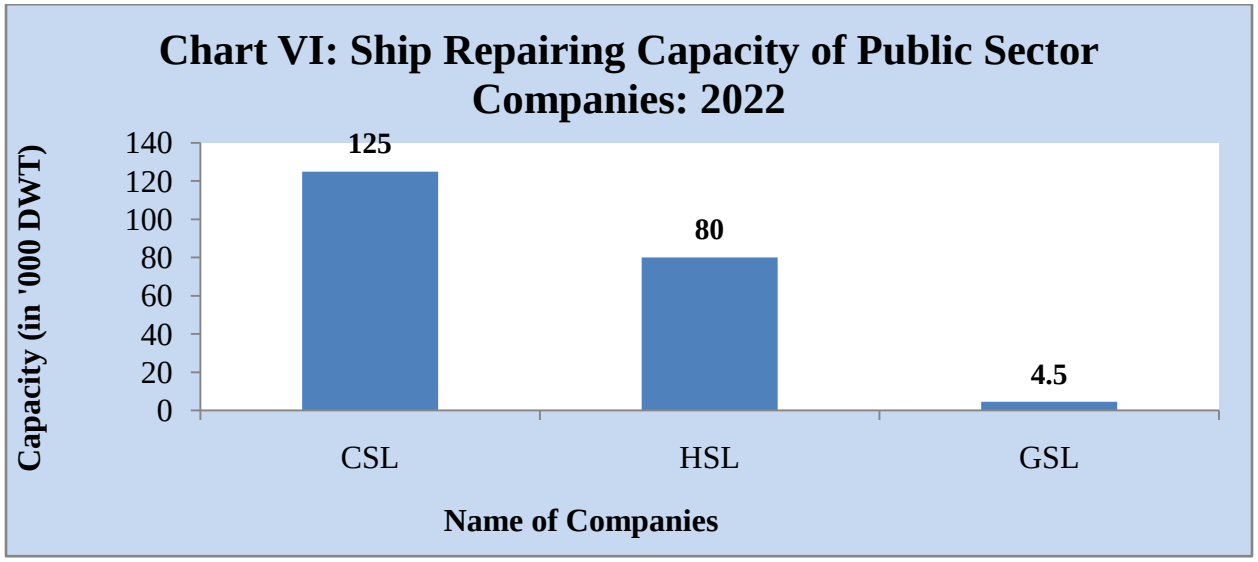
Section-2

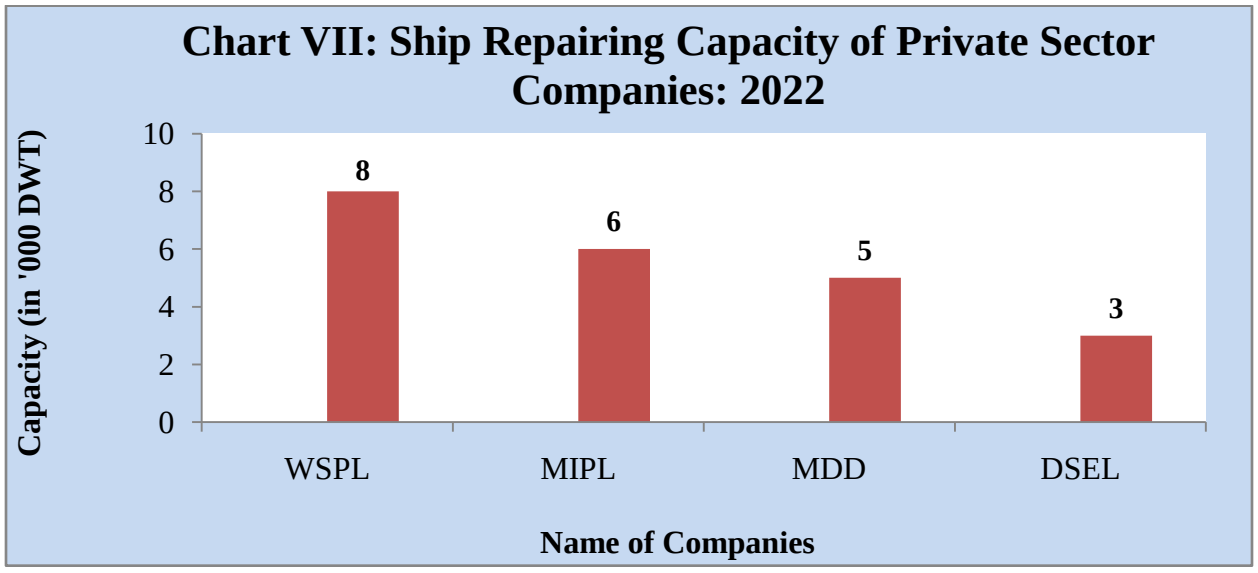
INDIA'S SHIP-REPAIRING INDUSTRY

2. INDIA'S SHIP-REPAIRING INDUSTRY

2.1 Ship repair capacity essentially reflects capability in terms of the number of ships repaired and maximum size of ship that can be repaired in terms of DWT.

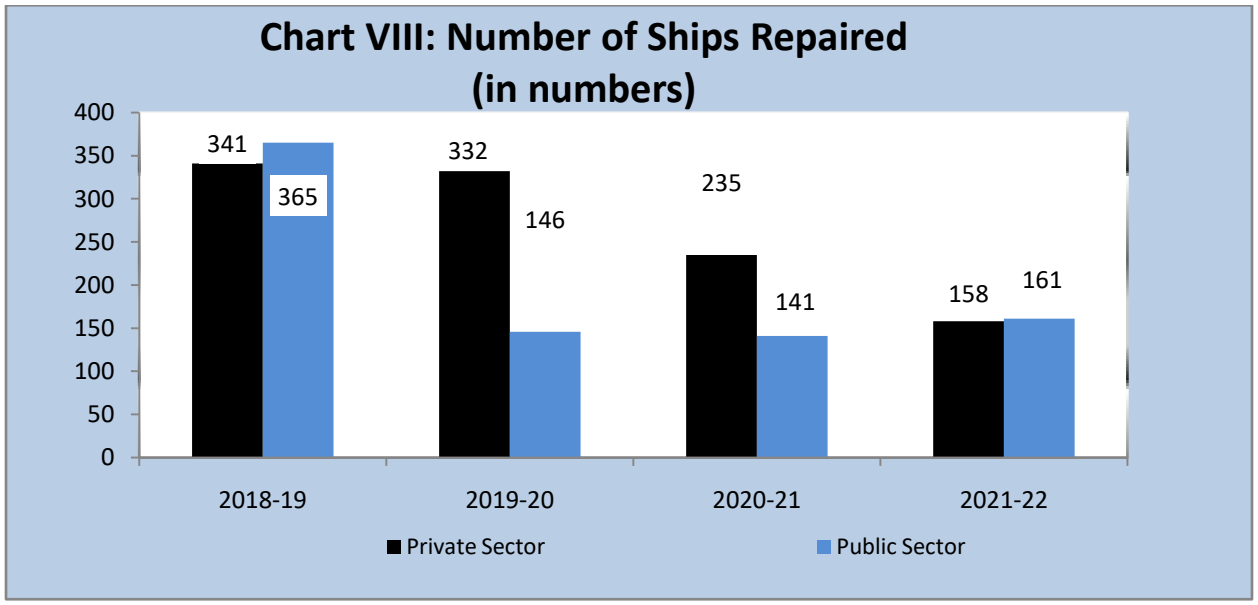
2.2 Amongst public sector companies, Cochin Shipyard Ltd (CSL) had the highest capacity for ship repairing (125 thousand DWT) followed by Hindustan Shipyard Ltd. (HSL) (80 thousand DWT) and Goa Shipyard Ltd. (GSL) (4.5 thousand DWT) in 2021-22. In private sector category amongst the reporting companies, Waterways Shipyard Pvt. Ltd. (WSPL) (8.00 thousand DWT) had the highest capacity for ship repairing followed by Modest Infrastructure Pvt. Ltd. (MIPL) (6 thousand DWT), Mandovi Drydocks (MDD) (5 thousand DWT) and Dempo Shipbuilding and Engineering Pvt. Ltd. (3 thousand DWT). Charts VI& VII below depict the ship repairing capacity of major public and private sector shipbuilding yards as on 31st March 2022 and details of the same are given in table 2.1 (page 25-27).





NUMBER OF SHIPS REPAIRED

2.3 In 2021-22, total 319 ships were repaired out of which 158 ships were repaired by private sector shipyards and 161 ships were repaired by public sector shipyards against 376 ships repaired in 2020-21. Chart–VIII given below depicts comparative picture of the number of ships repaired by all public and private sector shipbuilding yards during 2018-19 to 2021-22 and details of the same are given in Table 2.4 (page 32-34).



2.4 In 2021-22 amongst the Public sector, Cochin Shipyard Ltd had repaired the highest number of ships (100 ships with earnings of Rs. 672.53 crore) followed by Goa Shipyard Ltd. (33 ships with earnings of Rs. 190.14 crore) and Hindustan Shipyard Ltd. (14 ships with earnings of Rs 72.26 crore). In the private sector, amongst the reporting companies Dempo Shipbuilding & Engineering Pvt. Ltd.(DSEL) had the highest number of ships repaired (40 ships with earnings of Rs 6.23 crore), followed by High Seas Shipping Associates (40 ships with earnings of Rs 9.87 crore), Sea Blue Shipyard Ltd.(16 ships repaired with an earnings of Rs 19.08 crore), Mandovi Drydocks (14 ships with earnings of Rs 4.69 crore) and JITF Shipyards Ltd (8 ships with earnings of Rs 0.50 crore). Amongst reporting companies, in terms of ships repaired, the private sector and public sector accounted for a share of 49.5% (158 Ships) and 50.5% (161 Ships) respectively in the total ships repaired (319 Ships) during 2021-22. Company wise ship repairing facilities for dry docks, wet docks and other repairing facilities as on 31st March 2022 is given in Table 2.3 (page 29) & 2.3(a) (page 30-31) respectively. Company wise earnings from the year 2018-19 to 2021-22 along with number of ships repaired by Indian vessels and foreign vessels is given in Table 2.4 (page 32-34).

2.5 Table 5 given below depicts the number of ships repaired and earnings by both public and private ship yards in India during 2020-21 and 2021-22.

Table No. 5 : Number of Ships Repaired and Earnings

Name of The Company	2020-21						2021-22					
	Indian Vessels		Foreign Vessels		Total Vessels		Indian Vessels		Foreign Vessels		Total Vessels	
	S	E	S	E	S	E	S	E	S	E	S	E
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
A. PUBLIC SECTOR (Total)	**138**	**118915.61**	**3**	**568.74**	**141**	**119484.35**	**156**	**132385.42**	**5**	**3093.34**	**161**	**135478.76**
1. Alcock Ashdown & Co. Ltd.@												
2. Cochin Shipyard Ltd.	94	39025.33	3	535.74	97	39561.07	99	67088.51	1	164.20	100	67252.71
3. Garden Reach Shipbuilders & Engineers Ltd.	No Merchant Ships repaired during 2020-21						2	52.68	2	2437.90	4	2490.58
4. Goa Shipyard Ltd.	31	15415.00	-	33.00	31	15448.00	33	18904.09	N.A	110.24	33	19014.33
5. Hindustan Shipyard Ltd.	6	21174.16	-	-	6	21174.16	12	6845.00	2	381.00	14	7226.00
6. Hooghly Dock & Port Engineers Ltd.**	-	-	-	-	-	-						
7. MazagonDock Shipbuilders Ltd.	4	43263.00	-	-	4	43263.00	6	39368.17	0	0	6	39368.17
8. Shalimar Works Ltd.	3	38.12	-	-	3	38.12	4	126.97	0	0	4	126.97
B. PRIVATE SECTOR (Total)	**211**	**8308.07**	**24**	**173.67**	**235**	**8481.74**	**157**	**8188.28**	**1**	**278.10**	**158**	**8466.38**
9. Abhishek Engineers**	6	150.00	-	-	6	150.00						
10. A.C.Roy& Co. Ltd.	8	420.00	-	-	8	420.00	5	199.00	0	0	5	199.00
11. A.H. Wadia Boat Builders	-	-	-	-	-	-	0	0	0	0	0	0
12. A.S. Moloobhoy Pvt. Ltd.												
13. Bristol BoatsPvt. Ltd.	2	1.39	-	-	2	1.39	3	35.79	0	0	3	35.79
14. Chidambaram ShipcarePvt. Ltd	82	721.64	21	162.79	103	884.42		272.90		233.81		506.71
15. Chowgule& Co. Pvt. Ltd	-	-	-	-	-	-	3	446.34	0	0	3	446.34
16. Dempo Shipbuildiing & Engg. Ltd.	26	513.21	-	-	26	513.21	40	623.41	0	0	40	623.41
17. Equiptrans Logistics Pvt. Ltd.**	21	678.39	-	-	21	678.39						
18.Ferromar Shipping Pvt. Ltd.	-	-	-	-	-	-	0	0	0	0	0	0
19. M/s Glory Shipmanagement Pvt. L	4	177.29	-	-	4	177.29	8	266.73	0	0	8	266.73
20. High Seas Shipping Associates	2	76.76	-	-	2	76.76	40	986.77	0	0	40	986.77
21. Homa Engineering Works	1	452.12	-	-	1	452.12						
22. M/s Island Ship Repairers							3	605.96	0	0	3	605.96
23. JITF Shipyards Ltd.	10	236.48	-	-	10	236.48	8	50.24	0	0	8	50.24
24. KSINC	1	14.00	-	-	1	14.00	1	14.00	0	0	1	14.00

25. L&T Shipbuilding Ltd												
26. Mandovi Drydocks	13	461.00	-	-	13	461.00	14	469.00	0	0	14	469.00
27. Marine Care 'N' Associates	8	987.00	-	-	8	987.00	2	286.00	0	0	2	286.00
28. Marine Frontiers Pvt. Ltd.	-	-	-	-	-	-	0	0	0	0	0	0
29. Modest Infrastructure Pvt. Ltd.	6	1686.63	-	-	6	1686.63	7	1931.50	0	0	7	1931.50
30. NN Shipbuilders &Engg. Pvt Ltd	-	-	-	-	-	-	0	0	0	0	0	0
31. Patra Shipping Pvt. Ltd.												
32. Reliance Naval & Engineering Ltd.@												
33. Roshini Ship Repairs and Engineers							4	186.82	0	0	4	186.82
34. San Marine	-	-	-	-	-	-	0	0	0	0	0	0
35. Sea Blue Shipyard Ltd.	15	1247.72	3	10.98	18	1258.60	15	1863.77	1	44.29	16	1908.06
36. Sembmarine Kakinada Ltd. @												
37. Shoft Shipyard Pvt. Ltd.	4	435.34	-	-	4	435.34	4	136.88	0	0	4	136.88
38. Tebma Shipyard Ltd							0	0	0	0	0	0
39. Timblo Drydocks Pvt. Ltd.**	-	-	-	-	-	-						
40. Titagarh Wagons Ltd.	-	-	-	-	-	-	0	0	0	0	0	0
41. Vijai Marine Shipyards**	1	35.03	-	-	1	35.03						
42. West Coast Shipyard Ltd.**	1	14.09	-	-	1	14.09						
43. Waterways Shipyard Pvt. Ltd.	-	-	-	-	-	-	0	0	0	0	0	0
Grand Total (A + B)	**349**	**127223.68**	**27**	**742.41**	**376**	**127966.09**	**313**	**140573.70**	**6**	**3371.44**	**319**	**143945.14**

Note (1): S : No. of Ships ; E : Earnings in Rs. Lakh; - : NIL
Note (2): Note: New companies (At S. No. 22, 31 & 33) have been added from 2021-22; based on the list obtained from Indian Shipping Register.
** No information is received for 2021-22
@ Removed in view of Point 1.4 of Chapter 1 of the Publication

SHIP REPAIR FACILITIES AVAILABLE AT MAJOR PORTS

2.6 Apart from shipbuilding yards, ship repair facilities are also available at major ports. Data provided by different major ports on dry docks, dry dock hire charges and equipments available for ship repairing have been compiled and presented in three different tables (Table 2.5 (page 35), Table 2.6 (page 36) & Table 2.7 (page 37).

2.7 Available data on Ship repair facilities reveal that Syama Prasad Mukherjee Port (SMP, Kolkata) has a maximum number of dry docks (5), Mumbai Port Trust, Visakhapatnam Port Trust, Paradip Port Trust and Deendayal Port Trust have 1 Dry Dock each. The remaining major

Ports do not have any ship repairing facilities. With regard to cranes availability and capacity SMP (Kolkata) has five cranes followed by Visakhapatnam Port Trust and Deendayal Port Trust with 1 crane each.

DRY DOCK HIRE CHARGES

2.8 Dry dock hire charges vary from port to port depending upon a number of factors, which include the size and type of vessels and time spent at dock. The charges are different for different types of vessels (foreign going and coastal). The charges also vary for inner harbour and fishing harbour. The details of dry dock hire charges are given in the table 2.6 (page 36).

Table No. 2.4

No. Of Ships Repaired And Earnings, Company-wise - (2018-19 to 2021-22)

(Rs. in Lakhs)

S.No	Name of The Company	Year	Indian Vessels		Foreign Vessels		Total	
			No.	Earnings	No.	Earnings	No.	Earnings
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	A. PUBLIC SECTOR (Total)	**2021-22**	**156**	**132385.42**	**5**	**3093.34**	**161**	**135478.76**
		2020-21	**138**	**118915.61**	**3**	**568.74**	**141**	**119484.35**
		2019-20	**145**	**89511.70**	**0**	**0.00**	**146**	**89815.55**
		2018-19	**363**	**113159.60**	**0**	**0.00**	**365**	**113166.60**
1	Alcock Ashdown (Gujarat) Ltd. @	2021-22					0	0.00
		2020-21					0	0.00
		2019-20					0	0.00
		2018-19	NIL	NIL	NIL	NIL	0	0.00
2	Cochin Shipyard Ltd.	2021-22	99	67088.51	1	164.20	100	67252.71
		2020-21	94	39025.33	3	535.74	97	39561.07
		2019-20	98	56222.00	1	291	99	56513.00
		2018-19	329	83197.46	NIL	NIL	329	83197.46
3	Garden Reach Shipbuilders and Engineers Ltd.	2021-22	2	52.68	2	2437.90	4	2490.58
		2020-21	No Merchant Ships were repaired during 2020-21				0	0.00
		2019-20	No Merchant Ships were repaired during 2019-20				0	0.00
		2018-19	NIL	NIL	NIL	NIL	0	0.00
4	Goa Shipyard Ltd.	2021-22	33	18904.09	N.A	110.24	33	19014.33
		2020-21	31	15415.00	NIL	33.00	31	15448.00
		2019-20	30	11876.19	NIL	13	30	11889.04
		2018-19	22	19825.96	NIL	NIL	22	19825.96
5	Hindustan Shipyard Ltd.	2021-22	12	6845.00	2	381.00	14	7226.00
		2020-21	6	21174.16	0	0.00	6	21174.16
		2019-20	13	5410.37	0	0.00	13	5410.37
		2018-19	12	7454.18	1	7	13	7461.18
6	Hooghly Dock & Port Engineers Ltd.**	2021-22					0	0.00
		2020-21	NIL	NIL	NIL	NIL	0	0.00
		2019-20	NIL	NIL	NIL	NIL	0	0.00
		2018-19	NIL	NIL	NIL	NIL	0	0.00
7	Mazagaon Dock Shipbuilders Ltd.	2021-22	6	39368.17	NIL	NIL	6	39368.17
		2020-21	4	43263.00	NIL	NIL	4	43263.00
		2019-20	1	15893.00	NIL	NIL	1	15893.00
		2018-19	1	2682.00	NIL	NIL	1	2682.00
8	Shalimar Works Ltd.	2021-22	4	126.97	NIL	NIL	4	126.97
		2020-21	3	38.12	NIL	NIL	3	38.12
		2019-20	3	110.14	NIL	NIL	3	110.14
		2018-19	0	0.00	NIL	NIL	0	0.00
	B. PRIVATE SECTOR (Total)	**2021-22**	**157**	**8188.28**	**1**	**278.10**	**158**	**8466.38**
		2020-21	**211**	**8308.07**	**24**	**173.67**	**235**	**8481.74**
		2019-20	**281**	**42675.19**	**51**	**961.79**	**332**	**43636.98**
		2018-19	**302**	**21972.72**	**39**	**1029.13**	**341**	**23001.85**
9	Abhishek Engineers**	2021-22			NIL	NIL	0	0.00
		2020-21	6	150.00	NIL	NIL	6	150.00
10	A.C.Roy & Co. Ltd.	2021-22	5	199.00	NIL	NIL	5	199.00
		2020-21	8	420.00	NIL	NIL	8	420.00
		2019-20	7	534.00	NIL	NIL	7	534.00
		2018-19	12	65.00	NIL	NIL	12	65.00
11	A.H. Wadia Boat Builders	2021-22	0	0.00	0	0	0	0.00
		2020-21	0	0.00	0	0	0	0.00
12	A.S. Moloobhoy Pvt. Ltd. @	2021-22						
		2020-21						
		2019-20						
		2018-19	NIL	NIL	NIL	NIL	0	0.00
13	Bristol Boats Pvt. Ltd	2021-22	3	35.79	NIL	NIL	3	35.79
		2020-21	2	1.39	NIL	NIL	2	1.39
		2019-20	2	51.34	NIL	NIL	2	51.34
		2018-19	4	51.12	NIL	NIL	4	51.12
14	Chidambaram Shipcare Pvt. Ltd.	2021-22		272.90		233.81	0	506.71
		2020-21	82	721.64	21	162.79	103	884.42
		2019-20	80	333.02	44	76.52	124	409.54
		2018-19	130	818.08	30	143.86	160	961.94

Table No. 2.4 (Contd...)

No. Of Ships Repaired And Earnings, Company-wise - (2018-19 to 2021-22)

(Rs.in Lakhs)

S.No	Name of The Company	Year	Indian Vessels		Foreign Vessels		Total	
			No.	Earnings	No.	Earnings	No.	Earnings
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15	Chowgule & Co. Pvt. Ltd.	2021-22	3	446.34	NIL	NIL	3	446.34
		2020-21	NIL	NIL	NIL	NIL	0	0.00
		2019-20	48	17005.26	NIL	NIL	48	17005.26
		2018-19	54	82.00	NIL	NIL	54	82.00
16	Dempo Shipbuilding & Engineering Pvt. Ltd.	2021-22	40	623.41	NIL	NIL	40	623.41
		2020-21	26	513.21	NIL	NIL	26	513.21
		2019-20	37	562.83	NIL	NIL	37	562.83
		2018-19	15	900.86	NIL	NIL	15	900.86
17	Equiptrans Logistics Pvt. Ltd**	2021-22					0	0.00
		2020-21	21	678.39	NIL	NIL	21	678.39
18	Ferromar Shipping Pvt. Ltd.	2021-22	NIL	NIL	NIL	NIL	0	0.00
		2020-21	NIL	NIL	NIL	NIL	0	0.00
		2019-20	NIL	NIL	NIL	NIL	0	0.00
		2018-19	NIL	NIL	NIL	NIL	0	0.00
19	M/s Glory Shipmanagement Pvt. Ltd.	2021-22	8	266.73	NIL	NIL	8	266.73
		2020-21	4	177.29	NIL	NIL	4	177.29
20	High Seas Shipping Associates	2021-22	40	986.77	NIL	NIL	40	986.77
		2020-21	2	76.76	NIL	NIL	2	76.76
21	Homa Engineering Works	2021-22					0	0.00
		2020-21	1	452.12	NIL	NIL	1	452.12
		2019-20	4	1792.49	NIL	NIL	4	1792.49
		2018-19	2	NIL	NIL	NIL	2	0.00
22	M/s Island Ship Repairers Ltd	2021-22	3	605.96	NIL	NIL	3	605.96
23	JITF Shipyard Ltd	2021-22	8	50.24	NIL	NIL	8	50.24
		2020-21	10	236.48	NIL	NIL	10	236.48
		2019-20	15	172.72	NIL	NIL	15	172.72
24	KSINC	2021-22	1	14.00	NIL	NIL	1	14.00
		2020-21	1	14.00	NIL	NIL	1	14.00
25	L&T Shipbuilding Ltd	2021-22					0	0.00
		2020-21			NIL	NIL	0	0.00
		2019-20	8	10385.01	NIL	NIL	8	10385.01
		2018-19	10	10932.17	NIL	NIL	10	10932.17
26	Mandovi Drydocks	2021-22	14	469.00	NIL	NIL	14	469.00
		2020-21	13	461.00	NIL	NIL	13	461.00
		2019-20	21	1097.18	NIL	NIL	21	1097.18
		2018-19	7	143.70	NIL	NIL	7	143.70
27	Marine Care 'N' Associates	2021-22	2	286.00	NIL	NIL	2	286.00
		2020-21	8	987.00	NIL	NIL	8	987.00
		2019-20	2	987.00	NIL	NIL	2	987.00
28	Marine Frontiers Pvt. Ltd.	2021-22	NIL	NIL	NIL	NIL	0	0.00
		2020-21	NIL	NIL	NIL	NIL	0	0.00
		2019-20	6	88.25	NIL	NIL	6	88.25
		2018-19	6	40.83	NIL	NIL	6	40.83
29	Modest Infrastructure Pvt. Ltd.	2021-22	7	1931.50	NIL	NIL	7	1931.50
		2020-21	6	1686.63	NIL	NIL	6	1686.63
		2019-20	4	937.44	NIL	NIL	4	937.44
		2018-19	4	263.50	NIL	NIL	4	263.50
30	N N Shipbuilders and Engineers Pvt. Ltd.	2021-22	NIL	NIL	NIL	NIL	0	0.00
		2020-21	NIL	NIL	NIL	NIL	0	0.00
		2019-20	NIL	NIL	NIL	NIL	0	0.00
		2018-19	NIL	NIL	NIL	NIL	0	0.00
31	Patra Shipping Pvt. Ltd	2021-22						
32	Reliance Naval & Engineering Ltd. @	2021-22					0	0.00
		2020-21					0	0.00
		2019-20					0	0.00
		2018-19	2	1775.97	NIL	NIL	2	1775.97
33	Roshini Ship Repairs and Engineers	2021-22	4	186.82	NIL	NIL	4	186.82
34	San Marine	2021-22	NIL	NIL	NIL	NIL	0	0.00
		2020-21	NIL	NIL	NIL	NIL	0	0.00
		2019-20	0	0	0	0	0	0.00
35	Sea Blue Shipyard Ltd	2021-22	15	1863.77	1	44.29	16	1908.06
		2020-21	15	1247.72	3	10.88	18	1258.60
		2019-20	14	1553.08	NIL	NIL	14	1553.08
36	Sembmarine Kakinada Ltd @	2021-22					0	0.00
		2020-21					0	0.00
		2019-20	19	6219.37	7	885.27	26	7104.64
		2018-19	19	6219.37	7	885.27	26	7104.64

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Table No. 2.4 (Contd...) No. Of Ships Repaired And Earnings, Company-wise - (2018-19 to 2021-22)

(Rs.in Lakhs)

S.No	Name of The Company	Year	Indian Vessels		Foreign Vessels		Total	
			No.	Earnings	No.	Earnings	No.	Earnings
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
37	Shoft Shipyard Pvt. Ltd.	2021-22	4	136.88	NIL	NIL	4	136.88
		2020-21	4	435.34	NIL	NIL	4	435.34
		2019-20	3	218.48	NIL	NIL	3	218.48
		2018-19	5	501.40	NIL	NIL	5	501.40
38	Udupi Cochin Shipyard Ltd/ Tebma Shipyard ltd $	2021-22	0	0.00	0.00	0.00	0	0.00
		2020-21					0	0.00
		2019-20	3	45.88	NIL	NIL	3	45.88
		2018-19	14	89	NIL	NIL	14	88.93
39	Timblo Drydocks Pvt. Ltd. **	2021-22					0	0.00
		2020-21	NIL	NIL	NIL	NIL	0	0.00
		2019-20	NIL	NIL	NIL	NIL	0	0.00
		2018-19	NIL	NIL	NIL	NIL	0	0.00
40	Titagarh Wagons Ltd.	2021-22	NIL	NIL	NIL	NIL	0	0.00
		2020-21	NIL	NIL	NIL	NIL	0	0.00
		2019-20	NIL	NIL	NIL	NIL	0	0.00
		2018-19	NIL	NIL	NIL	NIL	0	0.00
41	Vijai Marine Shipyards**	2021-22					0	0.00
		2020-21	1	35.03	NIL	NIL	1	35.03
		2019-20	6	602.05	NIL	NIL	6	603.37
		2018-19	16	NIL	2	NIL	18	0.00
42	West Coast Shipyard Ltd.**	2021-22					0	0.00
		2020-21	1	14.09	NIL	NIL	1	14.09
		2019-20	2	89.79	NIL	NIL	2	89.79
		2018-19	2	89.79	NIL	NIL	2	89.79
43	Waterways Shipyard Pvt. Ltd.	2021-22	NIL	NIL	NIL	NIL	NIL	NIL
		2020-21	N.A	N.A	N.A	N.A	N.A	N.A
	C. Grand Total (A + B)	**2021-22**	**313**	**140573.70**	**6**	**3371.44**	**319**	**143945.14**
		2020-21	**349**	**127223.68**	**27**	**742.41**	**376**	**127966.09**
		2019-20	**426**	**132186.89**	**51**	**961.79**	**478**	**133148.68**
		2018-19	**665**	**135132.32**	**39**	**1029.13**	**706**	**136161.45**

@ Removed in view of Point 1.4 of Chapter 1 of the Publication

** No information is received for 2021-22

Note : New companies (At S. No. 22, 31 & 33) have been added from 2021-22; based on the list obtained from Indian Register of Shipping.

* Includes expenditure on others

$ Udupi Cochin Shipyard Ltd earlier known as Tebma Shipyard ltd