



## माझगांव डॉक शिपबिल्डर्स लिमिटेड

(भारत सरकार का उपक्रम)

**Mazagon Dock Shipbuilders Ltd.**

(Formerly Mazagon Dock Limited)

(A Govt. of India Undertaking)

CIN : U35100MH1934GOI002079

डॉकयार्ड रोड, माझगांव, मुंबई - 400 010

Dockyard Road, Mazagon, Mumbai - 400 010

**Certified - ISO 9001-2015**

संदर्भ क्रमांक

Ref. No.

दिनांक

Date

04 Mar 2022

To  
BSE Limited  
Phiroze Jeejeebhoy Towers  
Dalal Street,  
Mumbai- 400 001  
Scrip Code: 543237

To  
National Stock Exchange of  
India Limited  
Exchange Plaza, C-1, Block G  
Bandra Kurla Complex  
Bandra (E), Mumbai - 400 051  
NSE Symbol: MAZDOCK

**Sub: Intimation under Regulation 30 of SEBI (Listing Obligations and Disclosures Requirements) Regulations, 2015 –Publication.**

Dear Sir,

- We are enclosing herewith a copy of the questionnaires to be published by the following publications on occasion of the DEF EXPO 2022:
  - Indian Express- CMD interview (Inaugural Day)
  - Special issue by Chanakya
  - Raksha Anirveda
  - AeroMag
  - Defence Watch Year Book 2022
  - IADB for Def Expo 2022
- The above information is submitted in terms of Regulation 30 of SEBI (Listing Obligations and Disclosures Requirements) Regulations, 2015.

This is for your kind information.

Thanking You,

Yours Faithfully,

For MAZAGON DOCK SHIPBUILDERS LIMITED

(Vijayalakshmi Kumar)  
Company Secretary



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**Questionnaire for CMD on 10 March, 2022 by Indian Express:- (Inaugural Day of Defexpo 2022)**

**1. PM Modi said that the MDL will partner Russia's Zvezda for construction of commercial ships. Please share some details.**

Ans- MDL has been selected as the preferred production partner to undertake major ship construction activities for M/s SSK Zvezda Shipbuilding Complex, Russia.

Zvezda Shipbuilding complex (SBC) is ambitious on development of a shipbuilding cluster in the Far East Russia and the project will open up a large scale export business opportunity for India and specifically to MDL in future as the envisaged quantum of work is really huge spanning for years. MDL intends to take this business opportunity forward.

**2. Can you share the progress of the Project P 75I?**

Ans- In recent years, the infrastructure at the shipyard has been modernized and upgraded to meet the technological advancements in Naval construction. Under Mazdock Modernization program, MDL has augmented its Infrastructure facility specifically to cater to Submarine construction. Submarine Launch Facility is also being created at Alcock Yard to facilitate launching of Submarines independent of deep dry dock which will also immensely contribute to future projects such as Project P75(I).

MDL is actively preparing to bag the order for Construction of six Submarines under P75 (I) program for which RFP has been issued to shortlisted strategic partners. Selection of OEM and subsequent discussions towards Bid preparation is in process.

**3. What are the future plans of MDL with regards to export?**

Ans- MDL has submitted proposals for Exports to various countries viz. Brazil, Peru, Argentina, Philippines, Hungary, Sierra Leone, Chile, Cameroon, etc. for construction & delivery of OPVs, FPVs, FICs, Floating Docks, Flat Bottom Shallow Boats, FAC and Corvettes.

MDL is also participating in various Defence Exhibitions like Defexpo, Aero India etc. for marketing the products built by MDL for exploring the opportunities to increase the exports. In addition, MDL is working on diversification of products which would enhance exports.

A dedicated section has also been formed in the Submarine Division for business development and providing competitive bids to customers. MDL is also making all-out efforts to tie-up with various private companies to grab opportunities/orders from international market.

MDL is trying to penetrate other markets as well for export and some of their offerings are as follows:-

- a) Refit & Repair of Submarines
- b) Autonomous Underwater Vehicle.
- c) Electric & Solar powered vehicles
- d) Air Boat (Fan Boat)
- e) Heavy Engineering works

#### **4. What is your order book position and how much you have been able to fulfil?**

Ans- For the next 5-6 years, we have the order book of Rs 46000 Cr Approx. The order broadly comprises of the construction of four in Nos Visakhapatnam Class Project 15B Stealth Destroyers (one out of four already delivered), four in Nos Nilgiri Class Project 17A Stealth Frigates and six in Nos Project 75 Scorpene Submarine (four out of six already delivered). Medium Refit & Life Certification (MRLC) of one Submarine in collaboration with German Collaborator M/s tkMS, Germany is also in progress.

**QUESTIONNAIRE FOR CMD, MDL INTERVIEW IN DEFEXPO 2022 SPECIAL ISSUE BY**

**CHANAKYA: MARCH 2022**

**Q1. Mazagon Dock has grown to become one of the premier Warship building Yards in India, producing warships for the Indian Navy, including Destroyers, Frigates, Corvettes, Missile Boats, OPVs, etc. Briefly outline the construction activities of the Mazagon Dock Shipbuilders Ltd. (MDL)?**

**Ans-** MDL is the oldest shipyard in India with inception in 1774, incorporated in 1934, and taken over by the Government of India in 1960. MDL is the only shipyard in India to have built Destroyers and two different types of Submarines for the Indian Navy with its facilities located in Mumbai and Nhava and thus MDL is also one of the unique shipyards in the world with such diverse range of products. From the time it was taken over by the Government of India in 1960, MDL has built 799 vessels, including 26 capital warships and 6 conventional submarines. MDL has the capacity to build warships, submarines, merchant ships up to 40,000 DWT.

MDL has developed itself from being a small dry dock in 1774 to being one of country's leading defence shipyard capable of meeting the requirements of the Indian Navy towards its warship building programmes including submarines.

MDL is currently building four 'P-15B Visakhapatnam' Class destroyers (one out of four delivered), four 'P-17A Nilgiri Class' advanced stealth frigates and six Scorpene class submarines (two out of six delivered) for the MoD for use by the Indian Navy. MDL has also undertaken Medium Refit and Life Certification (MRLC) of INS Shishumar Submarine.

**Q2. With the Commissioning of 4 Kalvari-Class Scorpene Submarines - INS Kalvari, INS Khanderi, INS Karanj & INS Vela, and 5th Scorpene Submarine Vagir undergoing Harbour Trials, what is the status of the 5th & 6th (Vaghsheer) Submarine of Indian Navy's Project 75? By when do you foresee the next batch of P-75 to be ordered, or/and to be refitted with the DRDO AIP System?**

**Ans-** Fifth Submarine of Indian Navy's Project 75 is undergoing Sea trials and Sixth Submarine is in advanced stage of outfitting. RFI for DRDO AIP System is awaited from Indian Navy. The next Project P75(I) is being progressed by MoD under strategic partnership model wherein MDL and L&T are two strategic partners (SPs) shortlisted by IHQ/ MoD(N) for which RFP has been issued and discussion with OEMs for Bid preparation is in process.

**Q3. MDL having already delivered three P-15A Class Destroyers - INS Kolkata, INS Kochi and INS Chennai to the Indian Navy/MoD, and currently is building four P-15B Class Stealth Guided Missile Destroyers, with the recent Commissioning of INS Visakhapatnam, with Mormugao - the second P-15B Visakhapatnam-Class Destroyer under construction at MDL, which recently commenced her sea trial, and the 3rd Destroyer Imphal launched; tell us about the P-15 Projects and elaborate on the salient features of the P-15B Class?**

**Ans-** The P15B class Destroyers are the follow on of the prestigious Kolkata Class Destroyers. The 15B ships are a powerful testimony to the Indigenous design and building capability of frontline warships. The INS Vishakhapatnam Class Destroyers are sure to grab attention of the world due to her sheer size, ordnance delivery potential and multi-dimensional capabilities with quality embedded within her at every

stage from design to construction and trials. The ship boasts of several new design features giving her enhanced operational capabilities in terms of survivability, stealth, sea keeping, ship handling and weapons.

The Ship Boasts of a very high level of automation with sophisticated digital networks such as Gigabyte Ethernet based Ship Data Network (GESDN), Combat Management System (CMS) with GbE backbone, Automatic Power Management System (APMS), Integrated Platform Management System (IPMS) and an Integrated Bridge System (IBS).

**Q4. With four P-17A New-Generation Stealth Frigates being built at MDL, tell us about the status of the P-17A Class Stealth Frigates, especially Nilgiri, the First Frigate of Project 17A Class?**

Four of the total seven P17A Class ships are under construction at Mazagon Dock Shipbuilders Ltd. with Integrated Construction methodology. The First of Class NILGIRI, was undocked on 18 Feb 22 with physical progress of 42% (approx.) duly completing all her underwater packages including outboard shafting activities. Major Engineering & Electrical equipment have been shipped-In. Nilgiri is planned to undergo Basin Trials by Dec 2023.

**Q5. Over the last few years, MDL has increased its focus on indigenisation and indigenous content. Tell us about your 'Make-in-India' Initiatives?**

**Ans-** MDL has set-up a dedicated Department of Indigenisation in Oct 2015 to boost and strengthen the indigenisation effort and to provide focused impetus to the Hon'ble Prime Minister's vision of "Make-in-India".

Indigenous warship building has been a distinct success story in our attempt to be self-reliant in Defence through Make in India policy. Today the country is capable of building Destroyers, Frigates, Corvettes as well as strategic submarines. Indigenous contents have steadily increased in these construction programs and presently it is pegged at 72-75%. More can be done in this direction by a collaborative approach amongst all stakeholders.

MDL has launched a separate "Atmanirbhar Bharat" Webpage in the company's website. The process of indigenisation, various items/equipment indigenised, items required to be indigenized (EoIs) are displayed under the webpage. Success stories of indigenisation are published on MDL website as a compendium of items indigenised.

MDL has indigenised 20 items/equipment which if procured from indigenised sources would result in considerable savings in Foreign Currency. Currently indigenisation of 09 major items/equipment through Indian Industries is in progress. Out of 09 items, 02 items are being indigenised under MAKE II process.

**Interview Questions by Raksha Anirveda: CMD - Mazagon Dock**

**Shipbuilders Ltd**

**Q1. Globally Ship building industry is becoming leaner and using modular technology. As one of the leading Defence PSU and "Ship builder to the nation," are you using modular technology in ship building? What steps are being taken to emerge as a leaner and competitive organisation with commercial ship building footprint in near future?**

**Ans:** The Project 17A Stealth Frigates being built at Mazagon Dock Shipbuilders Ltd. are being built with the Integrated Construction(IC) methodology wherein the hull construction and outfitting progresses concurrently with attendant savings in the build timelines along with enhanced quality. This method is being implemented for the first time in the history of warship building in India wherein the conventional shipbuilding process is re-engineered with a different Build Strategy, Detailed Design, procurement process and inspection sequencing. While adopting this construction approach, MDL is also fully leveraging the modernized infrastructure that has been exclusively created for the purpose.

The latest state-of-the-art technologies such as Virtual Reality Centre (VRC), Shore Integration Facility (SIF), Product Data Management/Product Lifecycle Management (PDM/PLM) have also been implemented at MDL.

**Q2. How do you view the government focus on Atmanirbhar Bharat? In what ways MDL has been contributing towards this initiative to make it a success? Kindly provide a detailed account of MDL's role play.**



**Ans-** MDL has been in the forefront of Gol's flagship programme Atmanirbhar Bharat since our inception. MDL has indigenously built some of the frontline Warships and Submarines for Indian Navy which includes Destroyers, Frigates, Conventional Submarines, Corvettes, Missile boats, Offshore Patrol Vessels, Floating Border Outposts etc. From the time MDL was taken over by Government of India in 1960, we have built 799 vessels including 26 capital warships and 6 Conventional Submarines for the Indian Navy.

MDL has been able to significantly enhance the indigenous content in the warships/project it has delivered to the Indian Navy. While the warships under project 15 delivered way back in 90s had an indigenous content of approx. 42%, under-construction warships under project 15B and 17A will possibly have an indigenous content between 70 to 75%.

Further, MDL has been able to successfully indigenize/develop some of the critical items/assemblies to be integrated on the Warships and Submarines to promote Atmanirbhar Bharat in Defence sector.

**Q3. What is your order book position and how much you have been able to fulfil? With government also focusing on defence exports, how has your shipyard been performing? Also provide an account of your current export portfolio and order status, excluding government to government export orders and your future projection for next 2-5 years.**

**Ans-** For the next 5-6 years, we have the order book of Rs 46000 Cr Approx. The order broadly comprises of the construction of four in Nos Visakhapatnam Class Project 15B Stealth Destroyers (one out of four already delivered), four in Nos Nilgiri Class Project 17A Stealth Frigates and six in Nos Project 75 Scorpene Submarine (four out of six already delivered). Medium Refit & Life Certification (MRLC) of one Submarine in collaboration with German Collaborator M/s tkMS, Germany is also in progress.

MDL has submitted proposals for Exports to various countries viz. Brazil, Peru, Argentina, Philippines, Hungary, Sierra Leone, Chile, Cameroon, etc. for construction & delivery of OPVs, FPVs, FICs, Floating Docks, Flat Bottom Shallow Boats, FAC and Corvettes.

MDL has been selected as the preferred production partner to undertake major ship construction activities for M/s SSK Zvezda Shipbuilding Complex, Russia. Zvezda Shipbuilding complex (SBC) is ambitious on development of a shipbuilding cluster in the Far East of Russia and the project will open up a large scale export business opportunity for India and specifically to MDL in future as the envisaged quantum of work is really huge spanning for years. MDL intends to take this business opportunity forward.

**Q4. Keeping abreast of technology is key to organisation's success. How well MDL is prepared to position itself as a leader and execute its challenging role play towards enhancing India's maritime capabilities and being at the fulcrum for building niche naval platforms? –**

Ans- MDL has established itself as Submarine Construction Hub in the country with two dedicated independent parallel Submarine assembly lines fully ready for operations. MDL is the only shipyard in India which has successfully constructed Destroyers and conventional Submarines with two different technologies.

MDL has completed modernization and up gradation of its facility that matches global standards with modular shop for integrated construction, wet basin, Submarine section assembly shop, virtual reality lab, product data management, product life cycle management which enables MDL the capability and capacity to construct at any point of time 10 warships and 11 conventional submarines simultaneously. Submarine Launch Facility is also being created to especially facilitate launching of Submarines directly, independent of availability of deep dry dock to upgrade MDL infrastructure for future projects such as Project P75(I).

MDL being a premier Shipbuilding organization has continuously thrived to keep abreast with the latest technologies and has already implemented Virtual Reality Centre (VRC), Shore Integration Facility (SIF) and Product Data Management/Product Lifecycle Management (PDM/PLM).

MDL is actively involved in developing innovative technologies through R&D using in-house resources and collaboration with academic institutions. MDL is having an in-house R&D team of dedicated personnel with specific targets in pursuit of quality R & D work with a view bridge gaps in engineering and the technology.

**Q5. Do you think India needs to formulate a “National Strategy for Maritime Security” to ensure adequate naval capability to safeguard its vital interests, enhance naval forces capabilities to exercise control of the seas, be a net**

**security provider along with upgradation of the maritime capabilities including shipbuilding, merchant shipping, ports, etc.? Your insights.**

**Ans-** Indian Ocean Region (IOR) is of strategic interest to India being the confluence of regional and international powers. Further, the IOR is a melting pot of key engines that drive international economy. The area constitutes 95% of India's trade by volume and 68% of trade by value. Approximately 80% of the country's crude oil is imported by sea via the IOR also has been an arena of international geopolitics and also a theatre of maritime conflicts.

I firmly opine that we need to ensure adequate Naval capability to safeguard our vital interest. The specific roles of the Indian Navy in future would continue to extend across the entire spectrum of security of the nation; from peacekeeping, through the low intensity segment to high-intensity conventional hostilities. In the last two decades, the capabilities available with our potential adversaries have grown considerably and are forecasted to only improve with time. The Indian Navy would therefore acquire adequate deterrent war fighting capabilities.

The Indian Navy is poised to grow significantly in the upcoming few years with the induction of a large number of ships, submarines and aircrafts.

**Q6. With MDL handing over the sixth submarine in 2023, Project 75 will be completed. What's the current status of Project 75-I under the Strategic Partnership model? Are you optimistic that it will finally take-off by the end of 2022 and have the unique scope for both Strategic Partners to collaborate and work together, irrespective of whoever is the winner?**

**Ans-** MDL is actively preparing to bag the order for Construction of six submarines under P75 (I) program for which RFP has been issued to shortlisted strategic partners. Discussions with OEM for Bid preparation is in process.

## Questionnaire from AEROMAG

1. **Over these decades, Mazagon Dock Shipbuilders Limited (MDL) has grown to become the premier war-shipbuilding yard in India. What are the major milestones in the success journey?**

**Ans-** MDL, today, is the premier shipbuilding yard in the country, producing world class state of the art ships and submarines. Over the last six decades, MDL has delivered over 799 ships/submarines/platforms to various customers both in India and abroad. Out of which 43 have been delivered to the Indian Navy, which forms a formidable part of the Fleet of the Indian Navy.

Following are MDL's major milestones in the last couple of decades:

- a) Delivery of four Scorpene class submarines to Indian Navy under project 75.
- b) Delivery of first Visakhapatnam class Destroyer to Indian Navy under project 15B.
- c) Delivery of three in Nos Kolkata class Destroyers to Indian Navy under Project 15A.
- d) Delivery of three in Nos Shivalik class Frigates to Indian Navy under project 17.
- e) Commissioning of Mazdock Modernisation Project (MMP) which has enhanced MDL's capacity of warship building from 8 to 10 and submarine building from 6 to 11. With the commissioning of MMP, MDL has become India's only shipyard to possess two independent submarine assembly & launch lines.

- f) Successful launch of MDL IPO in end Sep 20; listing on 12 Oct 20 at NSE & BSE which was Oversubscribed by more than 157 times.

**2. The fifth of six Scorpene-class submarines completed its first sea sortie recently and will now undergo rigorous trials before being delivered to the Navy later this year. Could you talk more about the vessel and the project?**

**Ans-** The state-of-art features of the Scorpene include superior stealth features and the ability to launch a crippling attack on the enemy using precision guided weapons. While the attack can be launched with both torpedoes and tube launched anti-ship missiles, and whilst underwater or on surface, the stealth features give it an invulnerability, unmatched by most classes of submarines.

Presently, fifth Submarine is undergoing rigorous Sea trials and Sixth Submarine is in advanced stage of outfitting.

**3. Which are the ongoing defence projects at MDL? Could you talk about the operations at the submarine arm of MDL?**

**Ans-** The order broadly comprises of the construction of 04 Nos Visakhapatnam Class (Project 15B) stealth Destroyers (one out of four already delivered), 04 Nos Nilgiri Class (Project 17A) stealth Frigates. The licensed construction of six Scorpene class Submarines (Project-75) in collaboration with French Collaborator M/s Naval Group, France is in progress at MDL. MDL has successfully delivered four out of six Scorpene Class Submarines of Project 75 to the Indian Navy. Balance, 02 submarines are in advanced stages of trials and outfitting. The initial feedback of Navy on P75 is satisfactory. Medium Refit & Life Certification (MRLC) of one Submarine in collaboration with German Collaborator M/s tkMS, is also in progress.

**4. MDL is committed to indigenize equipment and systems on warships and submarines and support Aatmanirbhar Bharat and Make in India initiatives.**

**What are the activities in this regard?**

**Ans-** A separate indigenisation cell has been constituted to give boost to indigenisation of equipment/ item at company level, apart from efforts made at MOD/IN level.

Also, a separate “Atmanirbhar Bharat” Webpage has been launched by MDL in the company’s website. The process of indigenisation, various items/equipment indigenised, items required to be indigenized (Eols) are displayed under the webpage. Success stories of indigenisation are published on MDL website as a compendium of items indigenised. The under-construction warships under project 15B and 17A will possibly have an indigenous content between 70 to 75%.

MDL has proactively pursued indigenous development for items/ equipment of foreign OEMs. Collaborations are being progressed with a range of private players for indigenized development of Equipment/spares for the warship Projects. Efforts are also being made to take up Indigenisation of equipment for future projects under ‘Atmanirbhar Bharat’ and ‘Make in India’ programs.

**5. Could you shed some light onto MDL’s order book? Who all are the major clients?**

**Ans-** As on date, MDL has an order book of Rs 46000 Cr Approx. The major client for construction and repair of Ships and Submarines is Indian Navy.

**6. How strong is the export division of the MDL? Could you shed some light onto the export operations and clientele base?**



**Ans-** A dedicated section has been formed for business development and providing competitive bids to customers. MDL is also making all-out efforts to tie-up with various private companies to grab opportunities/orders from international market.

MDL has submitted proposals for Exports to various countries viz. Brazil, Peru, Argentina, Philippines, Hungary, Sierra Leone, Chile, Cameroon, etc. for construction & delivery of OPVs, FPVs, FICs, Floating Docks, Flat Bottom Shallow Boats, FAC and Corvettes.

MDL has been selected as the preferred production partner to undertake major ship construction activities for M/s SSK Zvezda Shipbuilding Complex, Russia. Zvezda Shipbuilding complex (SBC) is ambitious on development of a shipbuilding cluster in the Far East Russia and the project will open up a large scale export business opportunity for India and specifically to MDL in future as the envisaged quantum of work is really huge spanning for years. MDL intends to take this business opportunity forward.

MDL is trying to penetrate other markets as well for export and some of their offerings are as follows:-

- a) Refit & Repair of Submarines
- b) Autonomous Underwater Vehicle.
- c) Electric & Solar powered vehicles
- d) Air Boat (Fan Boat)
- e) Heavy Engineering works

**7. How did the Covid-19 pandemic affect MDL's operations? What are the major operations in the post-pandemic times?**

**ANS-** During the first wave, COVID-19 pandemic had affected the Company's ability to maintain continued operations or otherwise operate or conduct its business at pre-pandemic levels as manpower was deployed for only essential work of the organisation. However, remote work arrangements kept the conduct of the business going to a certain extent.

Thereafter, there had been a surge in the number of COVID cases in Mumbai and its suburbs during the second wave. MDL had resorted to reduced strength of executives and non-executives in accordance with the Government of Maharashtra Covid-19 guidelines issued from time to time and in order to break the chain.

Presently, based on the directives of the Govt, Shipyard has been fully operationalized with complete manpower. The Company by all means is leaving no stones unturned to achieve the targets vis-a-vis following all Covid-19 protocols and safety measures at workplaces. The scenario is more or less similar across the complete spectrum of all manufacturing sectors. MDL could tide over the pandemic situation and reach closely towards defined VoP targets.

**8. What are the highlights of MDL's participation at DefExpo 2022? How do you look at the expo to expand the global reach of the company?**

**Ans-** MDL is participating in Defexpo 2022 for marketing the products constructed by MDL for exploring the opportunities to increase the exports. MDL is working on diversification of products which would enhance exports.

**Subject: - Questionnaire | Defence Watch Yearbook 2022 | DefExpo'22.**

**Qus.1. MDL is the oldest name when it comes to shipbuilding. Tell us about the legacy and your journey as the CMD of the company so far.**

Ans- MDL is a Defence Public Sector Undertaking under ministry of Defence. It is one of India's leading shipyards with a capacity to meet requirements of the Indian Navy. MDL's history dates back to the year 1774 when a small dry dock was constructed in Mazagon to undertake ship repair activities for the East India Company. MDL was incorporated as a public limited company in 1934 before being taken over by Govt. of India in 1960.

In the defence sector, MDL has indigenously built some of the frontline Warships and submarines for Indian Navy which includes Destroyers, Frigates, Conventional Submarines, Corvettes, Missile Boats, Offshore Patrol Vessels, Floating Border Outposts, etc.

From the time it was taken over by the Government of India in 1960, MDL has built 799 vessels, including 26 capital warships and 6 conventional submarines for the Indian Navy.

My journey, so far in MDL has been very satisfying and enriching. Following are some of the key goals achieved since I joined MDL as CMD:

- Delivery of third and fourth Scorpene class submarines, INS Karanj and INS Vela to Indian Navy under project 75.
- Delivery of first Visakhapatnam class Destroyer to Indian Navy under project 15B.
- Successful launch of MDL IPO in end Sep 20; listing on 12 Oct 20 at NSE & BSE which was Oversubscribed by more than 157 times.
- Bracing up for delivery of 2<sup>nd</sup> P15B Destroyer & 5<sup>th</sup> Scorpene Submarine by end of this year and undertaking launching of 3 vessels, 2<sup>nd</sup> P17A stealth Frigate, 4<sup>th</sup> P15B Destroyer and the last P75 Scorpene Submarine.

**Qus.2. Government now sees defence manufacturing as one of the major components contributing in \$5 Trillion economy. How is MDL preparing for it?**

Ans- Indigenous defence production is the key to achieving the country's aim to be a USD 5 trillion economy. Government is striving to achieve the goal by implementing key flagship programmes like Make in India. Adequate thrust is being given on enhancing defence exports, though the primary aim of indigenous defence production is to cater to the needs of the armed forces.

The Indian defence manufacturing sector is largely dominated by Defence Public Sector Undertakings (DPSUs) and erstwhile OFB.

MDL has always been in the forefront of indigenous defence production contributing significantly to the desired goal of Gol. MDL has built 799 vessels indigenously, including 26 capital warships and 6 conventional submarines from the time it was taken over by the government of India in 1960.

MDL is also constructing 4 nos Destroyers (one out of four delivered) and 4 nos of Stealth Frigates indigenously for Indian Navy. P15B destroyer and P17A frigate are likely to have indigenous content of 70-75%.

Indigenous warship building has been a distinct success story in MDL's attempt to be self-reliant in Defence. Today MDL is capable of building destroyers, frigates, corvettes as well as conventional submarines which is a testimony of MDL's contribution towards achieving indigenization in defence production.

Further, MDL has been shortlisted as one of the partners for Project-75(I) – Construction of 6 Nos. conventional Submarines fitted with AIP and Lithium Ion batteries. The project is currently at RFP stage. MDL is also a strong contender for six in Nos Next Generation Destroyer which is pegged at Rs. 50000 Cr.

On the export front, MDL has in the past exported 243 vessels to various international clients. MDL intends to revamp its export vertical by pursuing exports with various countries following both the G2G route wherein the GoI have opened Lines of Credit with funding typically extended by EXIM bank as well as the B2B route with sovereign guarantee of the recipient nation. MDL has approached potential clients in friendly countries for MDL designed ship for export market and has been carrying out promotional activities in various geographical location.

**Qus.3. How has COVID impacted the production? Is company out of the shadow of the pandemic?**

**Ans-** During the first wave, COVID-19 pandemic had affected the Company's ability to maintain continued operations or otherwise operate or conduct its business at pre-pandemic levels as manpower was deployed for only essential work of the organisation. However, remote work arrangements kept the conduct of the business going to a certain extent.

Thereafter, there had been a surge in the number of COVID cases in Mumbai and its suburbs during the second wave. MDL had resorted to reduced strength of executives and non-executives in accordance with the Government of Maharashtra Covid-19 guidelines issued from time to time and in order to break the chain.

During the third wave of COVID, based on the directives of the Govt, MDL has worked with 100 % manpower following all the COVID protocols. However, the disruptions of supply chain owing to cash flow crisis of MSME vendors and OEM specialists to travel freely from outstation adversely impacted the project. The Company by all means is leaving no stones unturned to achieve the targets following all Covid-19 protocols and safety measures at workplaces. The scenario is more or less similar across the complete spectrum of all manufacturing sectors. MDL is confident that we could tide over the pandemic situation and reach closely towards defined production targets.

**Qus.4. Submarine construction is an intricate activity. Project-75 submarines are being built by MDL. How is this model of ToT from a foreign-based manufacturer working out?**

**Ans-** Under the Scorpene project, the Collaborator has provided 'Know-How' under ToT for building the submarines. ToT includes provision of Technical Data Package, software & hardware, shipyard training & advising for first two Boats. MDL has fully absorbed the transfer of technology to construct the Scorpene submarines independently without any active support from the collaborator M/s Naval Group, France. MDL has successfully built 3<sup>rd</sup> and 4<sup>th</sup> Submarines without support of Naval Group.

**Qus.5. Aatmanirbhar defence is something the government has been putting a lot of stress on. How has MDL prepared for self-reliant shipbuilding?**

**Ans-** MDL has launched a separate "Atmanirbhar Bharat" Webpage in the company's website. The process of indigenisation, various items/equipment indigenised, items required to be indigenized (Eols) are displayed under the webpage. Success stories of indigenisation are published on MDL website as a compendium of items indigenised.

MDL has hosted 404 imported items for around Rs 2034 Crores on the MoD/DDP initiated website [www.srijandefence.gov.in](http://www.srijandefence.gov.in). MDL is interacting with the Indian firms showing interest in listed products.

Besides, MDL has set-up a dedicated Department of Indigenisation in Oct 2015 to boost and strengthen the indigenisation effort and to provide focused impetus to the Hon'ble Prime Minister's vision of "Make-in-India".

**Subjects: Questionnaire from IADB for DEFEXPO22**

**Q 1: What products and production values we could expect MDL over the next ten years?**

Ans- MDL is committed to continue being the leading Shipyard of the country engaged in building State of the Art Warships and Submarines conforming to International Standards. Our mission is to deliver Quality Ships and Submarines on time. We have built an entire range of platforms from naval vessels to offshore platforms at Bombay High for ONGC. Mazagon Dock's USP is building state-of-the-art Destroyers, Stealth Frigates and conventional Submarines.

For the next 5-6 years we have our hands full with the order book of Rs 46000 Cr Approx. The order broadly comprises of the construction of four in Nos Visakhapatnam Class Project 15B stealth destroyers (one out of four already delivered), four in Nos Nilgiri Class Project 17A stealth frigates and six in Nos Project 75 Scorpene Submarine (four out of six already delivered) and Medium Refit and Life Certification of INS Shishumar. Our major goal in coming years will be the timely delivery of these under-construction warships to the Indian Navy for their operational preparedness.

Order in the offing, for which MDL will be a strong contender is six in Nos Next Generation Destroyer which is pegged at Rs. 50000 Cr.

Another order, MDL will be vying for is six in Nos Project 75-I, conventional submarine fitted with air independent propulsion amounting to Rs 45000 Cr. approx. Since MDL is the only conventional submarine builder in India, we hope to bag this order with our modernized infrastructure facilities and spare capacity. Further, Indian Navy has also accorded Acceptance of Necessity (AON) to MDL for Medium Refit and Life Certification (MRLC-2) of INS Shankush. RFP for MRLC-2 is expected shortly from IN.



**2. How is the progress on Yard 11879 (Vagir) trials? How prepared is MDL for the upcoming project P75I and how different would the required preparations for project P75I would be as compared to project P75?**

Ans- Presently, Yard 11879 (Vagir) is undergoing rigorous Sea trials and the progress is very satisfactory.

Whilst P75(I) submarines employ AIPs and LIB battery, in term of construction there is no much of difference between P75 (I) & P75 Project except for few advancement & design changes. However, in recent years, the infrastructure at the shipyard has been modernized and up-graded to meet the technological advancements in Naval construction. Under Mazdock Modernization program, MDL has augmented its Infrastructure facility specifically to cater for Submarine construction viz. Submarine Section Assembly workshop (SSA), Cradle Assembly workshop (CAS), 300 T Goliath crane, Shore Integration Facility (SIF), Angre wet basin. Submarine Launch Facility is also being created at Alcock Yard to facilitate launching of Submarines directly independent of availability of deep dry dock to upgrade MDL infrastructure for future projects such as Project P75(I).

**3. With the construction of Kalvari Class nearing completion, what steps are being taken to preserve the skill sets and knowledge gained during the programme, more so in the light of the immense problems faced when the Shishumar programme was suspended and knowledge, capabilities and skills were apparently partially lost by MDL in submarine construction.**

Ans- The human skill sets are unique and specialized, developed through training programs designed for the respective job areas and experience gained over the years on the job. Efforts have also been made to have effective utilization and retention of the vital hard-acquired Submarine construction skills of the operatives and gainfully

employ them to the extent feasible on similar jobs of shipbuilding division of MDL to preserve the skill sets and knowledge gained during the programme of construction of Kalvari Class Submarine.

**4. What are the plans for MDL to look at modular construction concepts of warships? What technologies need to be developed for this process?**

Ans: As part of the Mazdock Modernization, the state of the art module shop with retractable roof together with the Goliath Crane has enabled MDL to adopt the integrated concept of Modular Construction. The technology is being used for the construction of Nilgiri Class Frigates.

Besides, MDL has continuously thrived to implement next generation technologies in order to improve the shipbuilding process-

a) AI assisted "Automatic Defect Recognition" in X-ray welding: X-Ray weld defect detection is a vital task when it comes to shipbuilding industry, which requires trained experts to perform routine inspection. Use of AI assisted Automatic Defect Recognition has reduces the time required by faster detection of defects in weld joints.

b) The use of Industry 4.0 technologies like Virtual & Augmented Reality and Artificial Intelligence are very imperative for MDL. We can now provide access to 3D design models to production and inspection teams working on the actual vessel. Not just that, it enables them to see each and every inch of design details in 1:1 scale by superimposing the model data on the physical ship. We are proud to announce that the complete technology has been developed indigenously as part of the honourable PM's Aatmanirbhar Bharat and Digital India initiatives.

c) Aveva Net: For enhancement of production activities on board it is envisaged that the 3D CAD Model of ship shall be made available to on board ship, Production, Planning SQC and other departments. Aveva Net system which is empowered with

intelligent search can be accessed from MDL Intranet Portal. This will make the 3D CAD Model available along with other related information like drawings, sketches, Installation, Manuals, Inspection reports etc. attached to the model. This System bridges the gap between various departments and allows the proper synchronization between the Departments thereby reducing the time required for execution.

d) Virtual Reality and Augmented reality: Line out inspection of the ships are carried out as a part of preliminary inspection which is a time taking process as there are almost about 500 Compartments in the Ship. MDL in its VR Lab facilitates this Line out inspection by providing emersive 3D environment of the actual compartment in a lucid way to our esteemed clients thereby reducing ample amount of time required.

e) In future, MDL is also looking forward to implement AI based systems for "Predictive Failure Analysis" for receiving early warnings in case of any anticipated failure in critical systems having higher failure rates due to continuous movements.

**5. With so much focus on defence exports, what are MDL plans to export or make ships for neighbouring countries?**

Ans- MDL has been selected as the preferred production partner to undertake major ship construction activities for M/s SSK Zvezda Shipbuilding Complex, Russia. Zvezda Shipbuilding complex (SBC) is ambitious on development of a shipbuilding cluster in the Far East of Russia and the project will open up a large scale export business opportunity for India and specifically to MDL in future as the envisaged quantum of work is really huge spanning for years. MDL intends to take this business opportunity forward.

MDL has submitted proposals for Exports to various countries viz. Brazil, Peru, Argentina, Philippines, Hungary, Sierra Leone, Chile, Cameroon, etc. for construction & delivery of OPVs, FPVs, FICs, Floating Docks, Flat Bottom Shallow Boats, FAC and Corvettes.

MDL is also participating in various Defence Exhibitions like DEFEXPO, AERO INDIA etc for marketing the products built by MDL for exploring the opportunities to increase the exports. In addition, MDL is working on diversification of products which would enhance exports.

A dedicated section has been formed in the Submarine Division for business development and providing competitive bids to customers. MDL is also making all-out efforts to tie-up with various private companies to grab opportunities/orders from international market.

MDL is trying to penetrate other markets as well for export and some of their offerings are as follows:-

- a) Refit & Repair of Submarines
- b) Autonomous Underwater Vehicle.
- c) Electric & Solar powered vehicles
- d) Air Boat (Fan Boat)
- e) Heavy Engineering works

**Q 6. What is the MDL's total current capacity utilisation?**

Ans: With its augmented Infrastructure, the construction capacity of MDL has increased from 06 to 11 Submarines with parallel construction lines and from 8 to 10

Warships. Currently MDL is building 2 conventional submarines (4 nos already delivered) against the capacity of 11 and 7 warships against the capacity of 10.