



गार्डन रीच शिपबिल्डर्स एण्ड इंजीनियर्स लिमिटेड
Garden Reach Shipbuilders & Engineers Ltd.

BUILDERS OF 100+ WARSHIPS
100+
BIPARTITE PASSION
MEETS UNWAVERING COMMITMENT

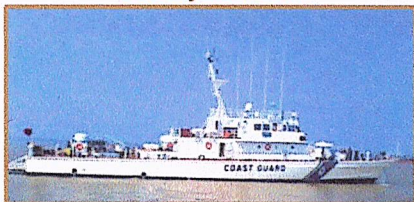
First to Credit

First Ever Indigenous Warship of Independent India for Indian Navy, INS Ajay in 1961



INS Ajay

First Ever Patrol Vessel for Indian Coast Guard CGS Rajhans in 1980



Patrol Vessel-CGS Rajhans

First Ever Indigenous Survey Vessel



Survey Vessel

First Shipyard in the country to build a Research Vessel



Marine Acoustic Research Ship - INS Sagardhwani

Only Indigenous Fleet Tanker built in India



Fleet Tanker - INS Aditya

First Indian Shipyard to have built Hovercrafts



Hovercraft-H-181

First Ever Warship built in India for Export



Offshore Patrol Vessel for Mauritius

First Ever Integrator of Carbon Composite Super Structure on Steel Hull of Ship



Third Anti Submarine Warfare Corvette - INS Kiltan

First Indian Shipyard to deliver 100 warships



100th Warship, Landing Craft Utility - IN LCU L-56

First Shipyard to Receive Green Channel Certification by DGQA

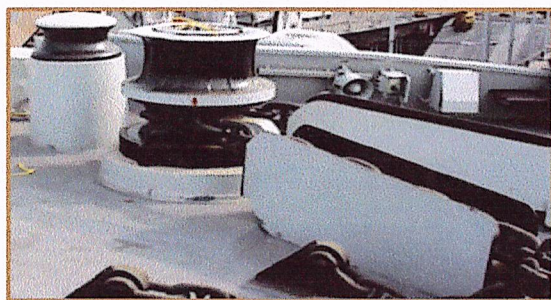


Certification for supply of Portable Steel Bridges (Bailey Type) to Indian Army

In Pursuit of Excellence & Quality in Shipbuilding

Deck Machinery Items

The Deck Machinery of GRSE is a vertical which provides tailor-made equipment for ships being built at different shipyards in the country. The product range includes Anchor and Mooring Capstans, Boat Davits, Helicopter Handling Systems, Miscellaneous Winches and Telescopic Helicopter Hangars of different sizes. Over the past year, the Deck Machinery Division has been reinventing its product portfolio to inject contemporary design and technology into its products. Towards this, successful partnerships have been forged with partner companies to design and develop the GRSE Helicopter Handling System (GHHS) as well as the Ground Support Equipment (GSE) for various Helicopter in use in the Indian Navy and Coast Guard. The existing portfolio has also seen improvement in design, aesthetics and technology. The national motto of "Atmanirbhar Bharat" is the core philosophy of all products being developed at TU.



Deck Machinery Items

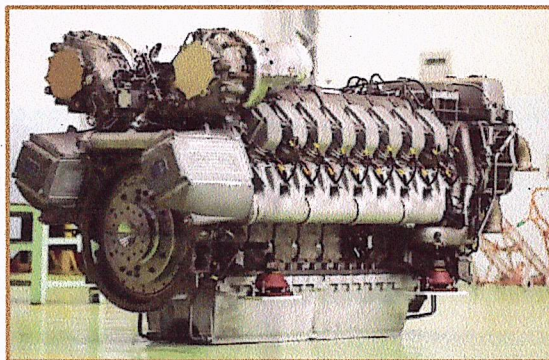
Engine

Our Diesel Engine Plant or DEP is situated on 62 acres at Ranchi, Jharkhand. This is where we assemble, test and overhaul marine engines.

GRSE's DEP is fully equipped with a test bench facility and has highly trained service personnel. The Plant was modernised recently and it tied-up with MTU, Germany for the indigenous manufacture of engine parts.

The 1 MW Diesel Alternator (DA) for naval applications is also manufactured at DEP. It comprises a prime mover coupled with a flexible coupling to an alternator, housed by an acoustic and thermal enclosure. The complete assembly with associated accessories is seated on the steel base frame with resilient mounts. The steel base frame is provided with a set of mounts at the interface to the ship structure to provide resistance to shock and vibration. The DA features a closed ventilation system. It is equipped with all necessary systems required for operation of engine and alternator along with the operational safety systems for the equipment and working personnel for all Naval applications.

Completion of a Physical Tilt Test at 30 degrees for the 1 MW DA was a major milestone for DEP, Ranchi.



Diesel Engine

30 MM Naval Surface Gun

In GRSE's pursuit for self-reliance in defence manufacturing and to minimize imports, GRSE has embarked on an ambitious project for Indigenisation of a technologically complex weapon system like the 30mm Naval Surface Gun. For this, GRSE has created yet another new business vertical for manufacture and supply of 10 Naval Surface Guns with Electro Optical Fire Control System (EOFCS) for the Indian Navy. GRSE has entered into a joint venture with an Industry Partner for this project and an assembly set up has been established at Taratala Unit.

GRSE has considerable expertise & capability for on-board installation of various Guns and engineering support for such products. The 30mm NSG will be fitted onboard small ships as its primary weapon and on large ships as a secondary weapon for engaging fast moving surface targets/threats. It is envisaged that with the technological features of this gun, all future warship projects will be equipped with the NSG-30.



30 MM Naval Surface Gun



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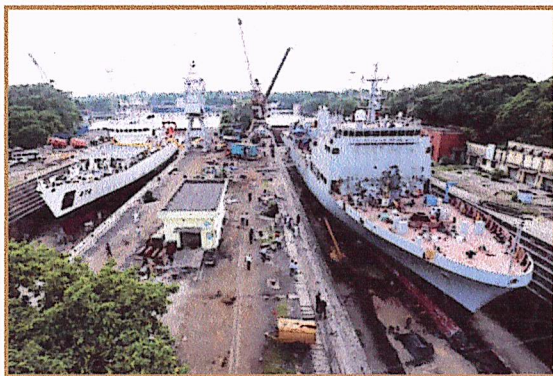
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Business Diversification

Ship Repair Division

In addition to shipbuilding, GRSE as a diversified organisation, is also having a dedicated ship repair vertical since 2018 to focus on the demand for repairs in the Indian Maritime sector.

GRSE, with its in-house design capability and vast pool of expertise and modern assets, has built and repaired ships for countries including Sri Lanka, Mauritius and Seychelles.

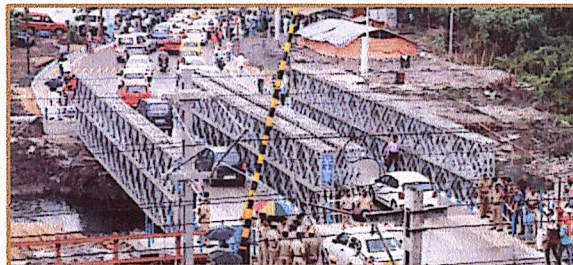


*Refit of Marine Acoustic Research Ship, INS Sagardhwani
at GRSE KPDD Unit*

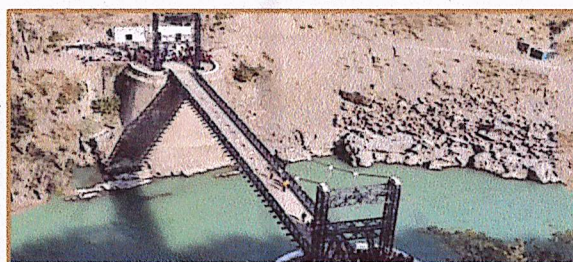
Engineering

GRSE is also involved in engine overhaul, assembly & testing and other engineering activities. The engineering division manufactures deck machinery items, pre-fabricated portable steel bridges and marine pumps. While shipbuilding has been GRSE's core competency, the Shipyard has supplied more than 5700 Portable Steel Bridges to the Indian Army, Border Roads Organisation, State PWDs & Central Government. These bridges, primarily used for disaster management, have also been exported to friendly countries including Bangladesh, Bhutan, Nepal, Myanmar & Sri Lanka. GRSE has achieved notable milestones in Bridge development, including the introduction of the Double Lane Portable Steel Bridge & Portable Assault Bridge, both firsts in India.

In 2022, GRSE became the first shipyard to receive Green Channel Certification by DGQA for supplying Bailey Portable Steel Bridges to the Indian Army. The Shipyard signed an MoU with BRO in 2022 for the fabrication, supply, erection & launching of first-of-its-kind 27 Double-Lane Class 70 Modular Steel Bridges. In 2023, GRSE achieved another milestone by securing a groundbreaking deal with BRO for an additional 30 such bridges.



GRSE Built Portable Steel Bridge at Majerhat, Kolkata



GRSE Built 240 Ft Bailey Suspension Bridge at Ramban, J & K



GRSE Built 140 Ft Double Lane Modular Steel Bridge at Flaghill, Sikkim

Taking giant strides towards Aatmanirbharta, in 2023, GRSE and Kongsberg Maritime (KM), Finland signed a Memorandum of Understanding (MoU) for co-production of indigenous Water Jets (WJs) of up to 3.5 MW in India. GRSE has earlier signed a landmark MoU with M/s Rolls Royce for co-production of high speed Marine Diesel Engines. The shipyard has also signed a contract for manufacture and supply of 30MM Naval Surface Guns to the Indian Navy.

GRSE also has a Technical Training Centre in Taratala Unit, Kolkata.



GRSE Technical Training Centre, Taratala Unit, Kolkata

In Pursuit of Excellence & Quality in Shipbuilding

Triumph of Indigenization

GRSE has made commendable progress by successfully incorporating a high percentage of indigenous equipment fit into the ships being built for the Indian Navy and Indian Coast Guard, having achieved over 90 % indigenous content onboard Anti-Submarine Warfare Corvettes, Landing Craft Utility Ships & SV(L).

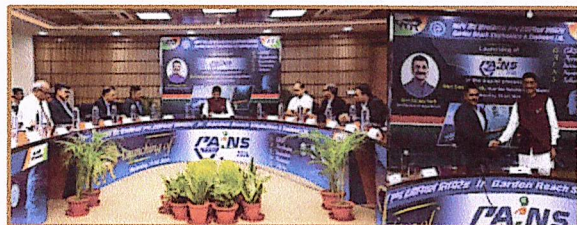


Launch of AI Enabled NDT by Hon'ble RM Shri Rajnath Singh

Achieving a significant milestone towards IPR regime & promoting self-reliance, GRSE becomes the first DPSU shipyard in the country to secure 100 IPRs granted/ registered by the Government of India, to foster Intellectual Property creation, & demonstrate commitment to Aatmanirbharta



100 IPRs Granted/Registered by the GoI under MRGS



Launching of GAINS 2024, the GRSE Accelerated Innovation Nurturing Scheme on 10 Jul 24

New Technology

Autonomous systems is the most important technology area which has the potential to bring about disruptive changes in the maritime sector in the near future. GRSE has been able to successfully combine intricate knowledge imbibed over years of designing and building complex platforms and the transformative potential of start-ups, to work on following critical technologies.:

- Unmanned Surface Vessel (USV).** Swadheen, is a 5 m long USV designed specifically to meet the unique needs of the Indian Navy, while also acting as a robust testing ground for future larger and more sophisticated USVs. Swadheen

which is being developed in collaboration with a start-up is now being outfitted with a complete bathymetry survey suite to facilitate autonomous surveys.



Unmanned Surface Vessel (USV) Swadheen



Joint Development of 'Jaldoot' USV by GRSE & NSTL, DRDO

- Autonomous Underwater Vehicle (AUV).** GRSE in collaboration with an industry partner has developed a Man Portable AUV. The AUV has been designed as a completely autonomous vehicle and is designed to take on a variety of payloads depending on the required role including mine detection, ASW training, underwater inspection, search & rescue missions and scientific exploration.



Autonomous Underwater Vehicle (AUV)



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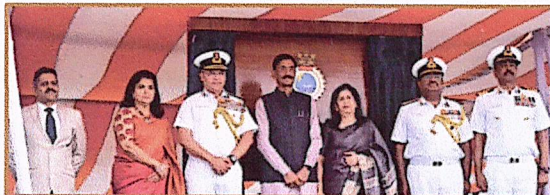
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Ongoing Domestic Projects

The shipyard is currently constructing 17 warships for the Indian Navy, a Next Generation Electric Ferry for the Govt. of West Bengal & 03 Patrol Boats, an Ocean Going Tug & TSH Dredger for Govt. of Bangladesh, 05 Multi-purpose Vessels for German Co., an Ocean Research Vessel for NCPOR, MoES and an Acoustic Research Vessel for NPOL.



Launching of 3rd P17A Advanced Frigate Vindhyagiri on 17 Aug 23



Commissioning of 2nd Survey Vessel (Large) 'INS Nirdeshak' on 18 Dec 24



Keel Laying of 1st & 2nd Next Generation Offshore Patrol Vessel (Yard 3037 & 3038) by Hon'ble Governor of WB on 05 Nov 24



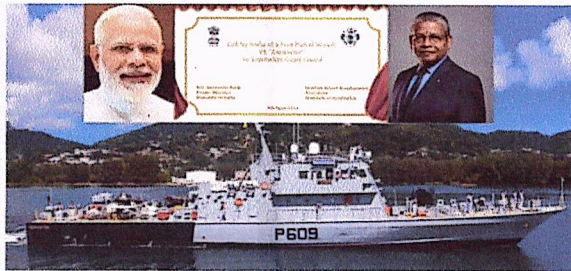
Historic Achievement-Simultaneous Launch of Two ASWSWC Warships (Agray & Akshay) for Indian Navy on 13 Mar 24



Flagging off Ceremony of NG Electric Ferry for Govt. of West Bengal on 09 Jan 25

Global Footprint

With the record of having exported two warships already to Mauritius & Seychelles, as well as an Ocean-Going Passenger & Cargo Ferry Vessel to the Cooperative Republic of Guyana, the Shipyard is currently fulfilling an additional export order from the Government of Bangladesh for construction of six Patrol Boats.



Fast Patrol Vessel SCG PS Zoroaster handed over by Hon'ble Prime Minister of India to His Excellency Wavel Ramkalawan, President of Republic of Seychelles on 08 Apr 21



An Ocean-going Passenger-cum-Cargo Ferry MV 'Ma Lisha' to the Cooperative Republic of Guyana delivered and commissioned on 23 Apr 23 at Georgetown, Guyana in the august presence of the President, Cooperative Republic of Guyana, HE Dr Mohammad Irfan Ali, Prime Minister, Cooperative Republic of Guyana, Brigadier (Retd.) Mark Anthony Phillips and Indian External Affairs Minister, Dr. S Jaishankar.



Delivered 06 Patrol Boats to Govt. of Bangladesh

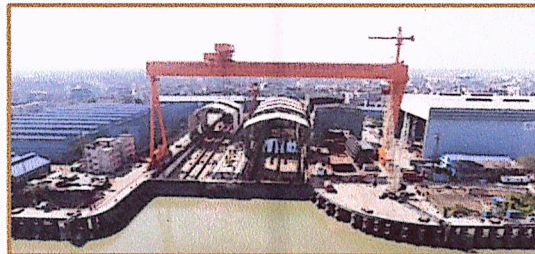
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Recent Achievements

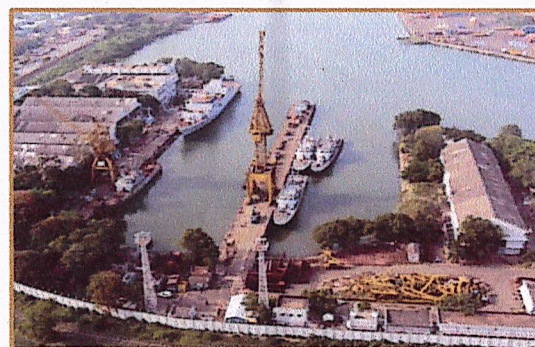
- Only Indian Shipyard to deliver over 100 Warships since 1960
- Bagged orders for delivering an Acoustic Research Ship for NPOL, DRDO, an advanced Ocean Research Vessel for NCPOR, MoES, an Ocean-Going Tug and TSH Dredger for the Government of Bangladesh, and six multi-purpose vessels for a German company
- Only PSU Shipyard to receive Raksha Mantri's Award 2022 for Excellence in Defence & Aerospace Sector for 'Design of Most Silent Ship for IN, for ASW SWC Operations'
- Received the Defence Minister's Award of Excellence for in-house Design Effort for OPV built for Government of Mauritius
- Design and R&D Unit of GRSE has been recognized by DSIR, Ministry of Science and Technology, GoI
- A Profit Making and Dividend Paying company for the past 30 years
- First Defence Shipyard to get listed with Stock Exchanges
- Approximately 90% Indigenous Content on ASW Corvettes, LCU's & SV(L)s
- A Next Generation Electric Ferry for Government of West Bengal is ready for delivery
- Bagged order from Government of West Bengal to build 13 Hybrid Ferries
- Only Shipyard to receive Green Channel Certification by DGQA for supply of Bailey Type Portable Steel Bridges to Indian Army
- Developed Double Lane Portable Steel Bridge and Portable Assault Bridge for the 1st time in India
- Delivered Export Warship, FPV, SCG PS Zoroaster to Seychelles Coast Guard
- Delivered MV 'Ma Lisha', an Ocean-Going Passenger-cum-Cargo Ferry to Cooperative Republic of Guyana ahead of schedule
- Diversified successfully into the manufacture of 30 mm Naval Surface Guns
- First DPSU shipyard in the country to secure 100 Intellectual Property Rights (IPRs) from the Government of India
- Best Performing Defence Shipyard of India for Four Years in a Row
- Bagged Prestigious Awards in Artificial Intelligence for Digital Excellence, R&D, CSR, Sustainability, Corporate Governance, HR Practices, Communication Outreach, Digital Transformation, Best Organisational Efforts, Outstanding Initiatives in Promoting Medical and Health etc.
- Launched two editions of GRSE Accelerated Innovation Nurturing Scheme (GAINS) for Indian Startups to develop innovative technologically-advanced solutions for the shipbuilding industry

Voyage of Excellence in Warship Construction

Shipbuilding has been the core business vertical and the shipyard has **modernized its infrastructure** spread across the three ship production locations in Kolkata. With **integrated ship construction using modular construction technology**, the shipyard is equipped to construct 24 ships concurrently powered with a **strong team of multi-disciplinary Design Engineers** creating **innovative designs for current & future ready warships**. The state-of-the-art Virtual Reality Lab and the latest design software, aid the design team in their efforts towards innovation in ship design using better ergonomics.



Integrated Ship Building



FOJ Unit



Rajabagan Dockyard



Taratata Unit



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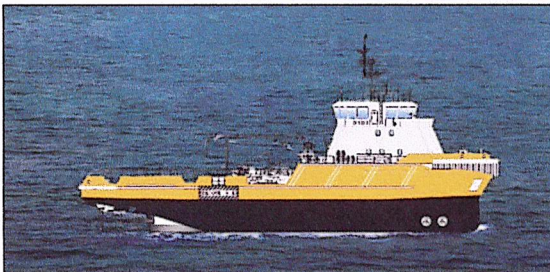
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OFFSHORE PATROL VESSEL



INSHORE PATROL VESSEL



OCEAN GOING TUG



FAST PATROL VESSEL



LANDING CRAFT UTILITY



FAST ATTACK CRAFT



TSH DREDGER



HYBRID FERRY

In Pursuit of Excellence & Quality in Shipbuilding

Shipbuilding Profile

The primary role of GRSE has always been building warships and other vessels for the Indian Navy and Indian Coast Guard. With its modern shipbuilding infrastructure, state-of-the-art Virtual Reality Lab and a 100+ strong design team drawing on over 60 years of shipbuilding expertise, GRSE can certainly lay claim to being the 'Master Builder' for Amphibious & Survey ships, Corvettes and Fast Attack Crafts in India. From building 05 ton boats to 24600 ton Fleet Tanker, GRSE has done it all and has proved its mettle as a pioneer warship builder of the nation.

GRSE is playing a key role in defence preparedness of India to produce the most modern warships through indigenization for the country aimed at self-reliance. Post modernization and revitalization, the shipyard has the capacity to build 24 ships (08 large & 16 small) concurrently.



SURVEY VESSEL (LARGE)



ANTI SUBMARINE WARFARE CORVETTE



PROJECT 17A FRIGATE



ACOUSTIC RESEARCH VESSEL



MULTI PURPOSE VESSEL



OCEAN RESEARCH VESSEL



NEXT GENERATION OFFSHORE PATROL VESSEL



**ANTI SUBMARINE WARFARE
SHALLOW WATER CRAFT**

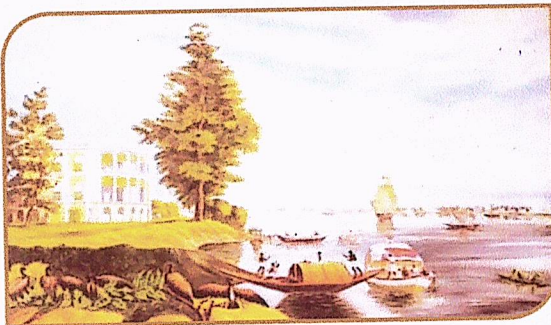


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The Journey Began in 1884

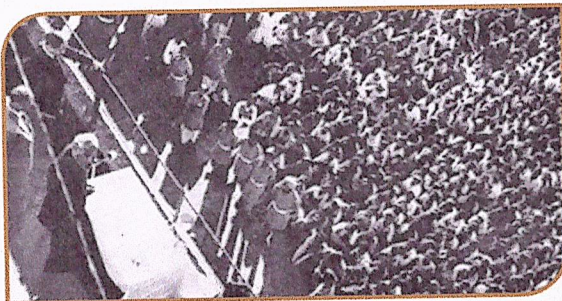
River Steam Navigation Company (RSNC), was originally set up as an inland water transport company for trade between Calcutta & the settlements situated on the Hooghly, Ganges & Brahmaputra Rivers with its registered office in London. In order to repair the vessels belonging to RSNC, a "Workshop" was established in 1884, on the banks of the River Hooghly. This "Workshop" formed the origin of this historical company, Garden Reach Shipbuilders & Engineers Ltd., which has today grown into a premier shipyard of India, under the administrative control of the Ministry of Defence, Govt. of India, building state of the art warships for the Indian Navy & Indian Coast Guard.



Garden Reach Workshop

New Dawn, New Course, New Role as PSU

19 Apr 1960 formed a new dawn for the Company when it was reborn as a Govt. owned Central Public Sector Enterprise and set sail on a new course adding many firsts to its credit.



Journey starts as a DPSU

Role in World War II

During the Second World War (1939-45), Garden Reach Workshop made its mark in carrying out construction, conversion & repair of over 4000 Naval & Merchant Vessels.



Garden Reach just before Outbreak of World War II

Footprints in the Sands of Time

The shipyard was conferred the status of a Miniratna Category I Company in 2006 and has recently upgraded to Schedule A company in 2024. GRSE has built **over 790 platforms including 100 plus warships** for Indian Navy, Indian Coast Guard and Government of Mauritius & Seychelles Coast Guard – **highest warships built & delivered by any Indian shipyard till date.**



GRSE Bhavan

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