



Garden Reach Shipbuilders & Engineers Ltd.

1961

First Indigenous Warship of India, INS Ajay

2014

First Warship Exported by India, CGS Barracuda

2019

First Indian Shipyard to Deliver 100 Warships

2022

First Shipyard to Receive Green Channel Certification by DGQA

BUILDERS OF 100+ WARSHIPS



**INFINITE PASSION
MEETS UNWAVERING COMMITMENT**



In Pursuit of Excellence & Quality in Shipbuilding



Commissioning of 1st Warship Exported by India, MOPV, CGS Barracuda for Mauritius in 2015



Handing Over of Fast Patrol Vessel SCG PS Zoroaster to Seychelles Coast Guard in 2021



2nd P17A Advanced Frigate "INS Dunagiri" Launched in 2022



Launch of AI Enabled NDT, Intelligent Weld Inspector (IWI) in 2022



Launching of 01 MW Diesel Alternator, Double Lane Modular Steel Bridge with a carriage width of 7.5 m and the new SERC-certified 5.3 m carriage width Single Lane Modular Steel Bridge at the DefExpo 2022



Commissioning of 3rd Anti-Submarine Warfare Corvette, INS Kiltan, in 2017



1st Survey Vessel (Large) "INS Sandhayak" Launched in 2021



1st P17A Advanced Frigate "INS Himgiri" Launched in 2020



Genesis of GRSE

The genesis of Garden Reach Shipbuilders & Engineers Ltd (GRSE) dates back to 1884 when it started its journey as a small workshop to repair vessels of River Steam Navigation Company. In 1934, the Company was registered under the Indian Companies Act, 1913 and started its new journey as Garden Reach Workshops (GRW) Limited. The Shipyard played an active role during the 2nd World War wherein over 4000 vessels were repaired here. The Company was taken over by the Government of India in 1960. GRSE has the distinction of becoming the first shipyard of independent India to build a warship for Indian Navy, the Seaward Defence Boat (SDB) INS Ajay way back in 1961. GRSE also built the first ever Indian Export Warship "CGS Barracuda". The shipyard was conferred the status of a Miniratna Category I Company in 2006. GRSE has built 785+ platforms including 100+ warships for Indian Navy, Indian Coast Guard, and Government of Mauritius & Seychelles Coast Guard - highest warships built & delivered by any Indian shipyard till date.

The primary role of this ISO 9001, 14001, 18001, 50001 & PCMM Level 2 certified shipyard 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. Apart from Ship Building & Ship Repairs, GRSE has also diversified into engineering business with a product profile of pre-fabricated steel bridges, various deck machinery items and assembly, as well as testing & overhauling of marine diesel engines.

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 20 ships (08 large & 12 small) concurrently.

Recent Achievements

- Only Indian Shipyard to deliver 100 Warships since 1960 (108 Warships delivered till 31 Mar 23)
- Only PSU Shipyard to receive Raksha Mantri's Award 2022 for Excellence in Defence & Aerospace Sector : Design of Most Silent Ship for IN, for ASW Operations
- 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 29 years
- 1st Defence Shipyard to get listed with Stock Exchanges
- Approximately 90% Indigenous Content on ASW Corvettes & LCUs
- Bagged an Order to build Next Generation Electric Ferry for Government of West Bengal
- Only Shipyard to receive Green Channel Certification by DGQA for supply of Bailey 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, SCG PS Zoroaster, FPV to Seychelles Coast Guard
- Delivered Export Vessel, MV 'Ma Lisha', an Ocean Going Passenger & Cargo Ferry to Cooperative Republic of Guyana
- Best Performing Defence Shipyard of India for Four Years in a Row
- Bagged Prestigious Awards for R&D, CSR, Corporate Governance, HR Practices, Communication Outreach, Digital Transformation, Best Organisational Efforts, R&D, Outstanding Initiatives in promoting Medical & Health etc.

Cmde PR Hari, IN (Retd.) Chairman & Managing Director, GRSE, Kolkata



Cmde PR Hari, IN (Retd) has assumed the charge of Chairman & Managing Director of GRSE with effect from 10 Jun 22. He is a Mechanical Engineer with Bachelor's Degree from Naval College of Engineering, Lonavala and has done his Master's Degree in Defence & Strategic Studies as part of 59th DSSC Course at Wellington. The Commodore has undergone Army Defence Orientation Course at AWC Mhow and the prestigious Naval Higher Command Course at the College of Naval Warfare in the year 2011.

He has had an illustrious Naval career spanning over 32 years during which he has held various prestigious appointments in key positions in Strategy and Operations, Technical Administration and Tactical decision making. His professional graph includes nine afloat appointments including seven frontline warships of the Navy. He has also held staff appointments at Eastern Naval Command and as Command Engineer Officer for Southern Naval Command. A notable contribution of the Chairman & Managing Director was as the Commissioning Engineer Officer of India's first indigenously built Stealth Frigate, INS Shivalik. He also has a unique record of serving in afloat appointments for a continuous span of eleven years and six months.

Cmde PR Hari, IN (Retd) was selected in GRSE as Chief General Manager (PP&C) in 2016 and has been in charge of production planning of almost all new construction ships at that point of time. He assumed charge as Director (Personnel) of the Company w.e.f 21 Oct 2019 and headed the Human Resources and Technical functions of GRSE.

In pursuance of the company's Vision, the Chairman & Managing Director strives to make GRSE globally recognised as the best Indian Shipyard. He envisions to further strengthen the Government's "Make in India" initiative, create a unique identity for the Company amongst its peers by becoming self-reliant in design capability and by deploying state of the art manufacturing processes. Towards the same, the initial thrust has been on improving productivity, enhancing internal efficiencies, devising new policies, vendor base development, human resource development and most importantly a sense of discipline amongst employees of the shipyard.



Progress Highlights

- 1884 - Started as a small factory on the eastern bank of River Hooghly
- 1960 - Taken over by the Government of India
- 1961 - Delivered the First Indigenous Warship of India - INS AJAY
- 1980 - Delivered the First Patrol Ship to Indian Coast Guard, CGS RAJHANS
- 1981 - Delivered the First of Class Survey Vessel, INS SANDHAYAK
- 1987 - Delivered the First of Class Landing Ship Tank (Large), INS MAGAR
- 1990 - Delivered the First of Class Missile Corvette, INS KIRPAN
- 2000 - Delivered the Only Indigenous Fleet Tanker, INS ADITYA
- 2000 - Delivered the First of Class P16A Frigate, INS BRAHMAPURTA
- 2000 - Delivered the First of Class Fast Attack Craft, INS TRINKAT
- 2001 - Delivered the First of Class Hovercraft H-181 to Indian Coast Guard
- 2006 - GRSE acquired Raja Bagan Dockyard (RBD) from M/s. CIWTC Ltd.
- 2006 - Obtained Mini Ratna, Category-1 Status
- 2006 - RM's Award of Excellence for Design effort to wards optimum Hull Form and basic structure for Waterjet Fast Attack Craft
- 2006 - RM's Award of Excellence for Import Substitution "Development of a Common Helicopter Traversing System" for handling both ALH and Seaking Helicopter
- 2007-08 - RM's Award of Excellence for Common Helicopter Traversing System
- 2007-08 - RM's Award of Excellence for Design & Creation of Double Lane Bridge
- 2007-08 - RM's Award of Excellence for Import Substitution "Indigenisation of Centrifugal Pumps of Russian origin" for Warships and Submarines of Indian Navy
- 2014-15 - Delivered INS Kamorta-the First Anti-Submarine Warfare Corvette to Indian Navy
- 2014-15 - Delivered CGS Barracuda, Multi-Role OPV to Mauritius - First Ever Warship built in India for Export
- 2015-16 - Delivered INS Kadmatt, Second Anti-Submarine Warfare Corvette to Indian Navy
- 2016-17 - Delivered INS Tarmugli, INS Tihayu and INS Tillanchang, First, Second and Third Follow-on Water Jet Fast Attack Craft respectively to Indian Navy
- 2016-17 - Delivered IN LCU L51 First of Class Landing Craft Utility (LCU) to Indian Navy
- 2017-18 - Delivered INS Tarasa, Fourth Follow-on Waterjet Fast Attack Craft to Indian Navy
- 2017-18 - Delivered IN LCU L52, Second of Class Landing Craft Utility (LCU) to Indian Navy
- 2017-18 - Defence Minister's Award of Excellence 2015-16 for In-House Design Effort of CGS Barracuda, OPV for Mauritius
- 2017-18 - Delivered IN LCU L53, Third of Class Landing Craft Utility (LCU) to Indian Navy
- 2018-19 - Delivered IN LCU L54, Fourth of Class Landing Craft Utility (LCU) to Indian Navy
- 2018-19 - Virtual Reality Lab Inaugurated by Dr. Ajay Kumar, Secretary (Defence Production)
- 2018-19 - Becomes 1st Defence Shipyard to get listed in National Stock Exchange (NSE) & Bombay Stock Exchange (BSE)
- 2018-19 - Becomes 1st Defence PSU to go live on TReDS Platform
- 2018-19 - Delivered IN LCU L55, Fifth of Class Landing Craft Utility (LCU) to Indian Navy
- 2018-19 - Bagged Contract for 04 Survey Vessels for Indian Navy on Competitive Basis
- 2018-19 - Keel Laid for 1st Advanced Stealth Frigate Under Project 17A
- 2018-19 - Delivered 99th Warship, ICGS Priyadarshini, First of class Fast Patrol Vessel to Indian Coast Guard
- 2018-19 - Delivered 100th Warship, IN LCU L56, Sixth of Class Landing Craft Utility (LCU) to Indian Navy
- 2019 - Certified for ISO 9001, 14001, 45001, 50001
- 2019-20 - Delivered 101st Warship, ICGS Annie Besant, Second of Class Fast Patrol Vessel to Indian Coast Guard
- 2019-20 - Delivered 102nd Warship, ICGS Amrit Kaur, Third of Class Fast Patrol Vessel to Indian Coast Guard
- 2019-20 - Delivered 103rd Warship, IN LCU L-57, Seventh of Class Landing Craft Utility (LCU) to Indian Navy
- 2019-20 - Delivered 104th Warship, INS Kavaratti, Fourth of Class Anti Submarine Warfare Corvette (ASWC) to Indian Navy
- 2020-21 - Delivered 105th Warship, ICGS Kanaklata Barua, Fifth of Class Fast Patrol Vessel (FPV) to Indian Coast Guard
- 2020-21 - Delivered 106th Warship, IN LCU L-58, Eighth of Class Landing Craft Utility (LCU) to Indian Navy
- 2020-21 - Delivered 107th Warship, SCG PS Zoroaster, Fast Patrol Vessel (FPV) to Seychelles Coast Guard
- 2021 - PCMM Level-2 Certified Company
- 2021 - Commissioning of Fully Assembled 250T Goliath Crane Transported by Sea and the complex Process of Unloading of the same has been undertaken for the first time in India
- 2022 - Only Shipyard to receive Green Channel Certification by DGQA for Supply of Bailey Portable Steel Bridges to Indian Army
- 2022-23 - Delivered 108th Warship, ICGS Kamla Devi, Fast Patrol Vessel (FPV) to Indian Coast Guard
- 2023-24 - Delivered Export Vessel, MV 'Ma Lisha', an Ocean Going Passenger & Cargo Ferry to Cooperative Republic of Guyana

Infrastructure - Ship Production

Main Works



Facilities for Modular Shipbuilding

Dry Dock	10,000 Tonnes, 180 M x 29 M x 10 M with Portable Shelters
Inclined Berth	4,500 Tonnes, 180 M x 23 M with Portable Shelters
Module Hall	With Telescopic 99 M x 30 M Sliding Roof
Paint Cell	For Blasting & Painting of Hull Block in controlled conditions



Dry Docks, Inclined Berths and Wet Basin

180m x 29m Dry Dock, 180 x 23m Inclined Berth and 99 x 30m Module Hall with sliding telescopic roof segments with adjacent

Paint Cell and Portable Shelters for assembly of Pre-Out-fitted Blocks weighing over 200 Tons for Modular Shipbuilding.

In addition to the above, GRSE's facilities also include another 160m x 25m x 8m Dry Dock with 2 x 40T Goliath Cranes, Inclined Berth, measuring 180m x 25m with 2 x 40/10T Cranes equipped with supporting fabrication shops to facilitate faster job turnaround. 117.80 x 25.00 x 8.00m fully covered non-tidal Wet Basin with 2 x 10T EOT, Cranes is ideally suited for all weatherfitting-out of medium and small ships.

Additional Facilities-Boat Shed for Manufacturing of Fast Interceptor Boat

Two Air-conditioned and Humidity Controlled Shops having 6 Bays ranging from 18 to 40M in length capable of Building FIB Crafts up to 20M length.

Infrastructure - Ship Production

Fitting Out Jetty



Dedicated to Fitting-out of ships. Facilities include modernized pipe shop with computer numeric control pipe bending machine & flanging machine along with structural shop, stores and other outfit support shops.

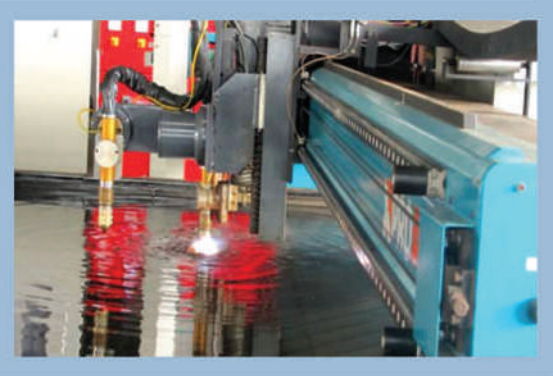
JETTY	DIMENSION	CRANE
1 No.	229 X 50 X 7M	1 X 15 T
2 No.	184.5 X 43 X 7M	1 X 25 T

Rajabagan Dockyard



Facilities for Modular Shipbuilding
2 Dry Docks, 2 Jetties & 550 M Open River Front

Dedicated Yard for constructing and outfitting medium and small warships simultaneously.



Shipbuilding Capacity

Yard is Capable of Constructing
20 Ships Concurrently

Category	Pre Launch	Post Launch
Large ships	4	4
Small ships	5	7



GRSE's Central Design Office



Virtual Reality Lab

From Concept Design to Production, the Central Design Office plays an integral and vital role in the shipbuilding process at GRSE. Company's technical experience has been forged into an elaborate work sequence which keeps evolving to ensure that the clients' requirements are handled in the best possible way.

GRSE is ISO 9001-2015 certified for design and construction of ships. GRSE received Raksha Mantri's Award 2022 for Excellence in Defence & Aerospace Sector for Designing the Most Silent Ship for IN, for ASW Operations during DefExpo 2022. On 30 May 2017, the Shipyard received Defence Minister's Award for Innovation in In-House Design Effort.

Experience and Skilled teams exist in disciplines of:

- Naval Architecture
- Structural Engineering
- Mechanical Engineering
- Electrical and Electronics Engineering

Functionally the design office staff is organized into five major Groups:

- Forward Design
- Hull
- Hull Outfit
- Engineering
- Electrical & Weapons



Quality



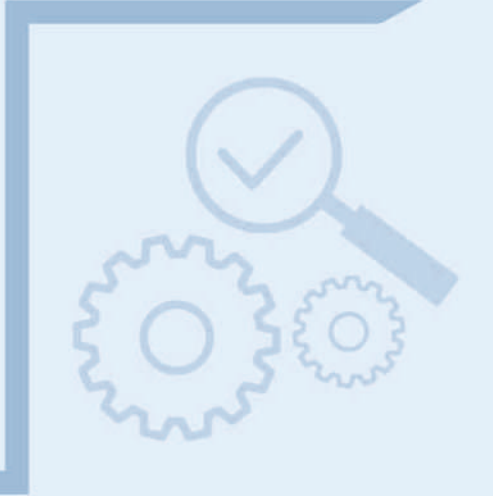
Quality Assurance

Garden Reach Shipbuilders & Engineers Ltd. is an ISO 9001:2015 Certified Company.

The Quality Assurance Department was formed in 1970 as a Quality Control Cell. The scope was later enlarged and the Department was renamed as Quality Assurance in 1975.

The Department carries out inspection of all shipbuilding items and works. For inspection of procurement items, the Department engages third Party Inspection Agencies. In case of Works, inspections are carried out by GRSE QA and the same is offered to customer(WOT/CGRPT).

The Department collates and approves Quality Assurance Plans for all shipbuilding activities, viz. procurement of shipbuilding items and ship construction work onboard shop and berth.



Technical Training Centre



Technical Training Centre

GRSE's Baranagar Unit is one of the leading ISO 9002 certified Technical Training Centre's of Eastern India. It is engaged in imparting training to the Apprentices and Trainee Marine Engineers(TME).

The Technical Training Centre at Baranagar conducts following trainings:

- Trade Apprentice Training
- Electrician, Fitter, Mechanist, Pipe Fitter, Welder Training
- Graduate/Diploma Engineer Apprenticeship Training (Naval Architect, Civil Engineer, Computer Science, Electrical & Mechanical Engineer)
- Trainee Marine Engineer Training (One-year Pre-Sea Training course with approval of D.G. Shipping, Mumbai)



Product Profile

Brahmaputra Class Frigate



The Brahmaputra Class Frigate is a frontline warship equipped with Surface-to-Air Missile, Surface-to-Surface Missile, Super Rapid Gun Mounting, Anti-Aircraft Guns, Torpedo Launcher and Chaff Launcher as well as early Warning, Navigation and Fire Control Radars and Underwater Sensors. It is also equipped with Integrated Communication System and Electronic Warfare System. It can accommodate 02 Sea King Helicopters in its Hangar.

Principal Particulars

Length Overall	(M)	126.4
Breadth	(M)	14.4
Draught	(M)	4.5
Displacement	(T)	3650
Speed	(KT)	30
Endurance	(NM)	4500 at 12kts
Propulsion Machinery		
Main Engine	Steam Turbine 2 X 15500 HP	
Power Generation		
Generators	2 X 750 KW 3 X 500 KW	
Accommodation		
Officers	29	
Sailors	283	



Product Profile

P17A Advanced Frigate



PROJECT 17A - MOST ADVANCED FRIGATE

The prestigious contract for construction of three Advanced Frigates under Project 17A was signed by GRSE on 20 Feb 2015 and is the largest ever order won by the company. P17A Frigates are state-of-the-art Guided Missile Frigates, built with latest Integrated Construction Methodology with enhanced pre-outfitting, to improve quality and reduce build periods. M/s Fincantieri, Italy, is the Knowhow Provider for Technology Upgrade and Capability Enhancement of the Frigates.

GRSE's maiden foray into the outfitting and installation of Brahmos SSM, MFSTAR antenna and LRSAM SAM during execution of Project 17 A, bestows new capabilities on the shipyard and catapults it to the higher league of shipyards capable of building potent stealth frigates for the nation. With P 17A, the shipyard has migrated to the digital realm and is successfully implementing AVEVA for the 3D modelling across multiple locations using a secured data network. Moreover, the vessel's workflow has adopted the Siemens 'TEAMCENTRE' for Product Data Model and Product Life Cycle Management (PDM/PLM).

Main Particulars of the Vessel

Length (LBP)	138 M
Length (LOA)	149 M
Beam Max (On weather deck)	17.7 M
Breadth (BWL at Design Waterline)	15.9 M
Depth (at Centre)	9.9 M
Deep Draft	5.1 M
Design Deep Displacement	6670 T (approx.)
Speed Max	Max 28 Knots
Complement	Total : 225
Endurance	5500 NM at economical speed and 1000 NM at max speed
Propulsion Machinery	2 x CODOG propulsion plants



Scan the QR Code
for P17A Advanced Frigates



Product Profile

Missile Corvette



Missile Corvette is a frontline warship armed with SRGM Gun, Surface-to-Surface and Surface-to-Air Missiles and Anti-aircraft Guns. It is also equipped with Electronic Warfare System and CIWS. It has a Helo Landing Deck.



Specification

Length Overall	(M)	91.10
Breadth	(M)	10.50
Displacement	(T)	1370
Max Speed	(KNOT)	25.00
Draught	(M)	3.00
Endurance	(NM)	4000 at 16 Knots
Main Engines	(BHP)	2 x 7100
Diesel Generators	(KW)	4 x 350
Armament		
Electronic Warfare System		SRGM Gun
SSM (Surface to Surface Missile)		SAM (Surface to Air Missile)
CIWS		
Accommodation		Officers : 9
		Sailors : 70
		Total : 79

Product Profile

Anti Submarine Warfare Corvette



Anti Submarine Warfare Corvette — (Kamorta Class Ship) is designed as the super-sophisticated frontline warship with Stealth features. The ship has Anti- Submarine Warfare Capability with a low signature of radiated underwater noise. The ship is equipped with Super Rapid Gun Mounting, Anti-Aircraft Guns, Torpedo Launcher, Rocket Launcher and Chaff Launcher as well as Early Warning, Navigation, Fire Control Radars and Under Water Sensor. It is also equipped with Integrated Communication System and Electronic Warfare System.



Principal Particulars

Length Overall	109.100M
Breadth	14.17M
Displacement	3200(T)app
Max Speed (Knots)	25.00
Endurance (NM)	3450 app at 18 knts

Propulsion Machinery

Main Engines	4 X3888KW at 1050rpm
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Power Generation

Diesel Generator	2X1000 & 2X500 KW
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Accommodation

Officers	17
Sailors	106



Scan the QR Code
for ASW Corvettes



Product Profile

Survey Vessel



Indegenously designed and built by GRSE, the Oceanographic Research-Cum-Hydrographic Survey Vessel is capable of all types of hydrographical research and oceanographic survey work. The ship has executed overseas assignments in the Middle East. It can carry 01 Helicopter in its Hangar.

Survey Vessel (Large)

The Contract for the four-ship Survey Vessel (Large) project was signed on 30 Oct 2018. These ships are capable of full scale coastal & deep-water hydrographic survey of Ports & Harbors, as well as of approaches & determination of navigational channels & routes. In addition, the ships are also capable of undertaking survey of maritime limits and collection of oceanographic & geographical data for Defence applications. These ships are propelled by two Marine Diesel Engines combined with Fixed Pitch Propellers and fitted with Bow & Stern Thrusters for maneuvering at low speeds during surveys. The ships are designed by the Design team of GRSE and are built & outfitted in compliance with applicable provisions and regulations of the Classifications Society (IRS). The ships are also constructed utilising the concept of 'Integrated Construction'. Accordingly, a large amount of pre-outfitting is carried out at the block stage itself. The First of Class Ship, Yd. 3025, shall bear the name 'Sandhayak' upon being commissioned to the Indian Navy. Incidentally, 'INS Sandhayak', the first Indigenous Oceanographic Research and Survey Vessel built by GRSE, was decommissioned in June 2021, after her glorious service to the nation for 40 years.

Principal Particulars

Length	110 M
Beam	16 M
Draught	3.75 M
Displacement	3408 Tones(approx.)
Speed	18 Knots
Compliment	18 officers+160 Men
Endurance	6500 NM at Economical Speed
Helicopter	01 X ALH



Scan the QR Code for Survey Vessel (Large)

Product Profile

ASW Shallow Water Crafts



ASW Shallow Water Crafts are capable of Anti Submarine Warfare in coastal waters & capable of Low Intensity Maritime Operations (LIMO) & Mine Laying Operations.

The envisaged capabilities also include :

- SAU and Coordinated ASW operations with aircraft
- Interdiction/ destruction of sub surface targets in coastal waters
- Carrying out Search and Rescue by day and night in coastal areas
- Capability to prosecute intruding craft as part of LIMO

Specification

Length Overall	(M)	77.6
Breadth	(M)	10.5
Draught	(M)	2.7
Displacement (Full Load)	(T)	900 (Approx.)
Max Speed	(Knots)	25
Endurance	(NM)	1800 (Approx.) at 14 Knots
Main Engine	(KW)	3 x 4300
Propulsion		Three Marine Diesel engines connected with three Waterjets through reversible reduction gearbox
Diesel Generator	(KW)	4 x 400
Accommodation		Officers : 07 Senior Sailors : 50

Weapon & Sensors

Twin triple tubelight weight Torpedo Tube
Rocket Launcher
Twin Anti-Torpedo Defense System (ATDS) with Fire Control System (FCS)
30 mm Close-In Weapon Systems (CIWS) with EO-FCS
Twin 12.7mm Gun with Stabilized Optronic Control System
Very Short Range Air Defense Missile (VSHORAD) Launcher
Low Frequency Variable Depth Sonar (LEVDS)
Hull Mounted Sonar
Expandable Bathy Thermograph (XBT)

Communication

Internal Communication

- Main Broadcast and SRE system
- Auto Telephone
- Sound Power Telephone
- Intercoms

External Communication

- Advanced Composite Communication Suite
- Satellite Communication
- Fixed Radio Sets
- Cryptographic Equipment
- GMDSS Suite

Electronic Warfare System with Direction Finder

Navigation

Integrated Bridge System (IBS)

Two Ring Laser Gyro

One transmitting type magnetic compass

02 Nos DGPS

Auto Pilot

Automatic Identification System (AIS)

One electro-magnetic log

02 Nos Band Radars

Automatic Weather Observation System (AWOS)

Echo Sounder



Scan the QR Code
for ASWSWC

Product Profile

Fleet Replenishment Tanker



Primarily designed as a Fleet Support Ship, the Fleet Replenishment Tanker replenishes warships at sea with all kinds of fuel (including aviation fuel), ammunition, fresh water, provisions, hospital facilities, etc. It is capable of transferring 2T load and fueling 4 ships simultaneously. It can carry Helicopter in its Hanger.



Principal Particulars

Length Overall	(M)	172.0
Breadth	(M)	23.0
Design Draught	(M)	9.10
Displacement	(T)	24,600
Dead Weight	(T)	17,000
Speed	(KT)	20
Endurance	(NM)	10000 at 16kts

Propulsion Machinery

Main Engine	2 x 11970 HP
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Power Generation

Diesel Generators	3 x 500 KW
Shaft Generator	2 x 1500KW
EMG DA	1 x 350 KW

Accommodation

Officers	16
Sailors	168

Product Profile

Landing Ship Tank



The Landing Ship Tank(Large) is a vehicle and troop carrier, capable of handling vehicles in beach gradient of 1 in 40 or steeper; It can accommodate 1 Sea King Helicopter and 4 Landing Craft Assaults. It is equipped with Anti-Aircraft Guns, Chaff and Electronic Warfare System. It is provided with Automatic Power Management and Battle Damage Control Systems.



Principal Particulars

Length Overall	(M)	124.80
Breadth	(M)	17.50
Depth (Main Deck)	(M)	8.60
Design Draft	(M)	3.50
Max.Displacement	(T)	5650
Dead Weight	(T)	2580
Speed	(KT)	15.80
Endurance	(NM)	3000 at 14kts

Propulsion Machinery

Main Engine	2x3888 KW
Power Generation	
Generators	2 x 500 KW
	2 X 350 KW
	1 x 100 KW

Accommodation

Officers	16
Sailors	120
Troops	150



Product Profile

Landing Craft Utility



Landing Craft Utility (LCU) Vessels are deployed to transport troops and equipment from ship to shore and vice versa. Following are the salient features of the LCU platforms :

- Equipped with Bow Ramp for handling combat equipment and vehicles
- Arrangement for transporting and stowing equipment/vehicles on main deck
- Ballast tanks to achieve desired trim and for smooth beaching/ un-beaching operation
- Arrangement to pull in/ pull out stranded vehicles on beach using Tank Hauling Capstan installed on main deck
- Integrated Platform Management System (IPMS)



Principle Particulars

Length Overall	(M)	62.8 (approx.)
Breadth moulded	(M)	11
Depth upto Dk. No. 1	(M)	4
Draught (design)	(M)	1.70
Displacement	(T)	830 (approx.)
Speed	(Knot)	15
Endurance	(NM)	1500 @12 Knots
Main Engine	(KW)	2 x 1850
Diesel Generators	(KW)	2x250, 1x350
Payload		01 No Main Battle Tank/ 04 Nos. Armoured Personnel Carrier (Light Tanks)/ 04 Nos. 4 Ton Trucks
Weapons		02 Nos. CRN-91 Guns 04 Nos. Medium Machine Guns (MMGs) 02 Nos. Heavy Machine Guns (HMGs)
Accommodation (Total : 216)		Officers : 10 Sailors : 46 Troops : 160



Scan the QR Code for Landing Craft Utilities

Product Profile

Offshore Patrol Vessel



SCG Barracuda - India's First Export Warship to Mauritius

The ships are capable of carrying out multi-purpose roles. These include - Anti Piracy Operations, Search & Rescue Operation, Anti-Smuggling & Anti-Drug Surveillance, Anti-Poaching Operation of EEZ including Fisheries Protection, Logistic Support Operation including Transportation of Dry Cargo, Fuel Oil & Fresh Water and Refrigerated Fresh Food, Transportation of Small Detachment of Troops/ Personnel, Helicopter Operations, Pollution Response Operation and External Fire Fighting.



Principal Particulars

Length Overall	(M)	74.10 (approx.)
Length B.P.	(M)	69
Breadth, moulded	(M)	11.40
Depth upto Dk. No.1	(M)	7.90
Depth upto Dk. No.2	(M)	5.50
Draught (Full load)	(m)	3.50 (approx.)
Displacement	(T)	1350 (approx.)
Frame Spacing	(mm)	600 throughout
Speed	(Knot)	22
Propulsion Machinery		
Main Engine		2 x 4300 KW
Power Generation		
Diesel Generator		4 x 250 KW, 1 x 80 KW
Accommodation		
Officers		14
Sailors		48
Passengers		31
Endurance		5000 Nautical Miles (NM)



Scan the QR Code for
Offshore Patrol Vessel

Product Profile

Fast Patrol Vessel



SCG PS Zoroaster - Export Warship delivered to Seychelles Coast Guard



Fast Patrol Vessels for Indian Coast Guard are designed to offer high speed and enhanced maritime security. The primary role of the vessel is to perform Fisheries Protection, monitor foreign-chartered trawlers, EEZ and Coastal Patrol, Anti-Smuggling and Search and Rescue Operations. However, it can also serve to provide communication link and Escort Coastal Convoys during hostilities and wartime. The ships are fitted with Rolls Royce water jets.

Principal Particulars

Length Overall (LOA)	(M)	48.9
Breadth	(M)	7.5
Displacement	(T)	308
Max. Speed	(Knots)	34
Endurance	(NM)	1500 at 12-16 knots
Propulsion Machinery		
Main Engine	3 x 2720 KW MTU Engines	
Power Generation		
Diesel Generator	3 x 120 KW, CUMMINS DG	
Accommodation		
Officers	15	
Sailors	20	



Scan the QR Code
for Fast Patrol Vessel

Product Profile

Inshore Patrol Vessel



Cost effective platform suited for Marine Surveillance and Rescue Operations as well as Combat Capability by adding suitable fire-power.



Principal Particulars

Length Overall	(M)	48.0
Breadth	(M)	7.5
Depth	(M)	4.0
Draught	(M)	2.0
Speed	(Knots)	34
Fuel Tank Capacity	(T)	42.4
Freshwater Tank	(T)	10
Lub Oil Tank	(T)	1.0
Displacement	(T)	304.5 (Full load)

Propulsion Machinery

Main Engine	3 x 2720 KW at 2100 rpm
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Power Generation

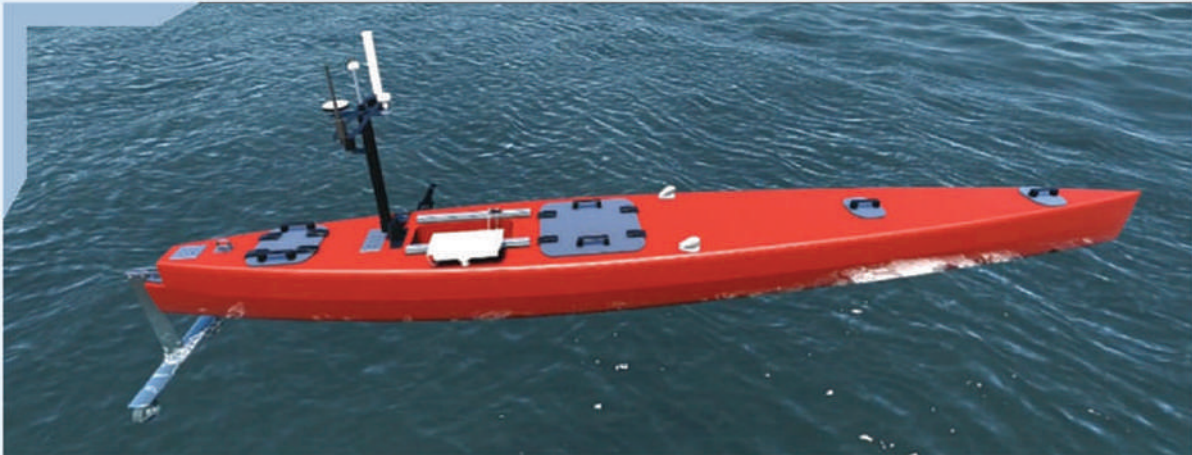
Diesel Generator	2 x 120 KW & 1 x 80 KW
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Accommodation

Officers	7
Sr. Sailors	8
Jr. Sailors	25
Endurance	400 Nautical Miles (MM)

Product Profile

Unmanned Surface Vessel (USV) Swadheen



As part of 'VISION 2030', GRSE is witnessing a paradigm shift in its R&D effort to develop Unmanned Surface Vessels with the application of Artificial Intelligence and Machine Learning. As a first step, GRSE developed a 5m Autonomous Surface Vessel named as Swadheen a ground up based design for bathymetric surveying, mine-hunting and explosive ordnance disposal.

Potential Roles

- Bathymetric Survey
- Mine hunting
- Reconnaissance
- Surveillance/Search/Visual Imagery & Data Capture

Principal Particulars

- Length : 5 M
- Design speed : 4 – 6 knots
- Displacement : ~150 Kg
- Sea state : up to 2



Principal Particulars

- Battery powered: Lithium-ion
- Redundant thruster configuration
- Moonpool for submersible payload
- Onboard computer, IP radio
- Attitude and Heading Reference System (AHRS)
- Automatic Identification System (AIS)
- Built-in power management & diagnostic system
- Provision for 360 deg. view camera, LIDAR sensor
- Modular internal payload mounting



Scan the QR Code for Unmanned Surface Vessel (USV) Swadheen

Product Profile

New Generation Electric Ferry



Taking a bold step towards green initiative, GRSE developed zero emission electric ferry, the first of its kind with potential to replace the conventional diesel engine driven ferries. It was a revolutionary measure towards reducing the Carbon Emission in the water transport sector.

Principal Particulars

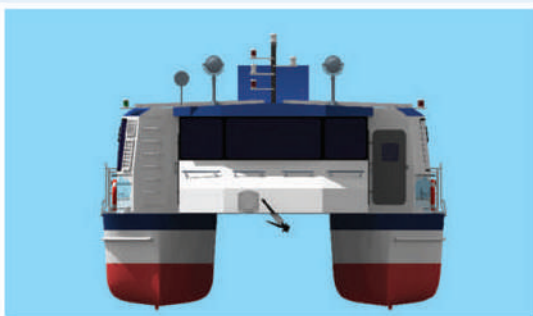
Hull type	: Catamaran
Length (abt.)	: 24 M
Breadth	: 8.1 M
Passengers	: 150
Speed	8 Knots
Draft (abt.)	1.0 M
Material	Hull - Aluminium Superstructure - FRP

Key Features

Zero emission / discharge
Low wake and draft (catamaran hull)
Powered by Battery and Solar Panels
High passenger comfort
Zero noise and vibration
Ergonomically designed passenger area
Low operational & maintenance costs

USP

Powered by Battery and Solar Panels
Zero emission/discharge, Low Wake Wash
High passenger comfort with zero noise & vibration
Ergonomically designed AC and Non AC Passenger Seating



Applications

- This Electric Ferry will potentially replace the conventional diesel engine driven ferries, thus ensuring zero emissions
- The vessel will also have zero noise and vibrations hence ensuring high passenger comfort
- This electric ferry is a revolutionary measure in reduction of Carbon Emission in the water transport sector

Role

- Twin Screw Catamaran Passenger Ferry

Functionality

- 150 Pax Ferry powered by Battery and Solar Panels

Unique Technology

- Fully Electric Design powered only by batteries
- Use of Solar Panels for optimization of power requirements
- Model Tested Hullform from IIT Kharagpur ensuring Low Wake Wash and Draught
- Ergonomically designed AC and Non-AC Passenger Seating Areas



Scan the QR Code for
New Generation
Electric Ferry



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Product Profile

Water Jet Fast Attack Craft



Water Jet Fast Attack Crafts promise to transform naval shoreline operations by packing a powerhouse punch of agility and speed. These WJFACs are ideally suited for interception of fast moving surface craft and will duly perform Anti-Smuggling, Fishery Protection and Search & Rescue Operations. The ships are fitted with Hamilton Water Jets.



Principal Particulars

Length Overall	(M)	48.9
Breadth	(M)	7.5
Displacement	(T)	321 (approx.)
Max Speed	(Knots)	35
Endurance	(NM)	2000 (Approx) at 12-14
Propulsion Machinery		
Main Engine		3 x 2720 KW
Power Generation		
Diesel Generator		3 x 80 KW
Accommodation		
Officers		6
Sailors		23



Scan the QR Code for
Water Jet Fast Attack Craft

Product Profile

Ocean Going Passenger & Cargo Ferry Vessel



- Ocean Going Ferry designed and built to operate on Coastal and Riverine Areas of Guyana
- Ferry is capable of operating with seating capacity of 276 passengers, 14 Sedan type Cars and 2 fully loaded 20T Truck with Bow Ramp
- Provision for carrying following types of Cargo:
 - ◆ Total cargo carrying capacity of 250T
 - ◆ Packaged cargo
 - ◆ General cargo in 10 ft. containers (6 nos below deck inside FWD cargo hold + 4 nos above hatch cover)
 - ◆ Dedicated cold & cool room for refrigerated cargo (20 Ton)
 - ◆ Hazardous cargo on open deck

Specifications

Length	69.55 M
Breadth	13.50 M
Depth	4.65 M
Draft	3 M
Displacement	1700 T
Max speed	15 KNOTS
Capacity	294 (12 crew + 6 officers + 276 passengers including 10 officials)
Endurance	500 NM



Scan the QR Code for
Ocean Going Passenger
& Cargo Ferry Vessel



Product Profile

Fast Interceptor Boats



- Fast Interceptor Boat is deployed in the states of Andhra Pradesh, Tamil Nadu, Odisha and West Bengal and in the Union Territories of Puducherry & Andaman & Nicobar
- It is deployed for Day/Night Surveillance. It is used for operating in shallow waters for Coastal Policing, Anti- Smuggling, Fishery Protection and Search & Rescue Operations

Principal Particulars

Classification	: IRS Approved
Length overall	: 9.85 M
Length on waterline	: 9.25 M
Beam (maximum)	: 3.38 M
Draught	: 0.65 M
Displacement	: Full load condition - 5 tonnes
Fuel Capacity	: 650 Ltrs.
Fresh water capacity	: 100 Ltrs.
Crew	: 4 crew and up to 10 passengers
Range	: 75 N miles @ 25 Knots (including 25% reserve)
Cruising speed	: 35 Knots at 100% MCR of OBMs
Max speed	: 35 Knots
Propulsion	: 2 X Outboard Motors (275 HP each)

Propulsion

- Main Engines: Two commercially available outboard petrol engines with counter rotation gear boxes driving stainless steel propellers.
- Gear Box: Each engine drives a close coupled reverse/reduction gear box. The gear boxes provide the ability to back flush the water jets to clear debris, weeds etc.

Principal Particulars

Classification	: IRS Approved
Length overall	: 13.0 M
Length on waterline	: 11.30 M
Beam (maximum)	: 3.70 M
Draught	: 0.70 M
Displacement	: Full load condition - 12 tonnes
Fuel Capacity	: 1250 Ltrs. / 1350 Ltrs.
Fresh water capacity	: 500 Ltrs.
Crew	: 4 crew and up to 12-16 passengers
Range	: 200 N miles @ 25 Knots (including 25% reserve)
Cruising speed	: 25 Knots at full load with crew and passengers
Max speed	: 35 Knots (493 BHP each) driving water jets through
Propulsion	: ECM controlled, 2X inboard diesel engines reversal gear box
Stern Gear	: Two Hamilton HJ 292 Water Jet

Propulsion

- Main Engines: Two turbo charged and after-cooled Cummins Marine Diesel Engines with electric start/stop and remote control.
- Gear Box: Each engine drives a close coupled reverse/reduction gear box. The gear boxes provide the ability to back flush the water jets to clear debris, weeds etc.

Product Profile

Hovercraft



Hovercraft is an amphibious craft, capable of travelling over land, water, mud and other surfaces. Following are the salient features of Hovercraft:

- Provision for Armament Fitment
- Multipurpose Maritime Operation capabilities like Patrolling, Search & Rescue operations etc.

It can be modified to suit other requirements. GRSE has delivered Air Cushioned Vehicles (ACVs) in the past to the Indian Coast Guard in collaboration with M/s Griffon Hovercrafts Ltd. (UK). GRSE offers two indigenous variants of Hovercraft.

Principle Particulars

		10M Variant	20M Variant
Length Overall	(M)	10.6	20.61
Beam Overall	(M)	4.2	8.83
Obstacle Clearance Height	(M)	0.5	1.25
Speed Max	(Knot)	35	45
Payload of Craft	(KG)	2200	4000
Propulsion		Single propeller	Twin propeller
Endurance	(NM)	375	420
Complement		18	21



Scan the QR Code
for Hovercraft

New Projects



P17A Advanced Frigate



Survey Vessel (Large)



Anti Submarine Warfare Shallow Water Craft



Next Generation Electric Ferry

Ship Repair & Refit Vertical



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. GRSE now has a dedicated ship repair vertical since 2018 to focus on the demand for repairs in the Indian maritime sector.

The Ship Repair department has considerable expertise in the repair/refit of Naval warships, Coast Guard ships and commercial vessels, the team steering this very important vertical for GRSE has over 25 years of experience both ashore and afloat and has a strong subvendor base as well as OEM network to always meet customer expectations.

GRSE can offer to both Defence and Commercial ships following services:-

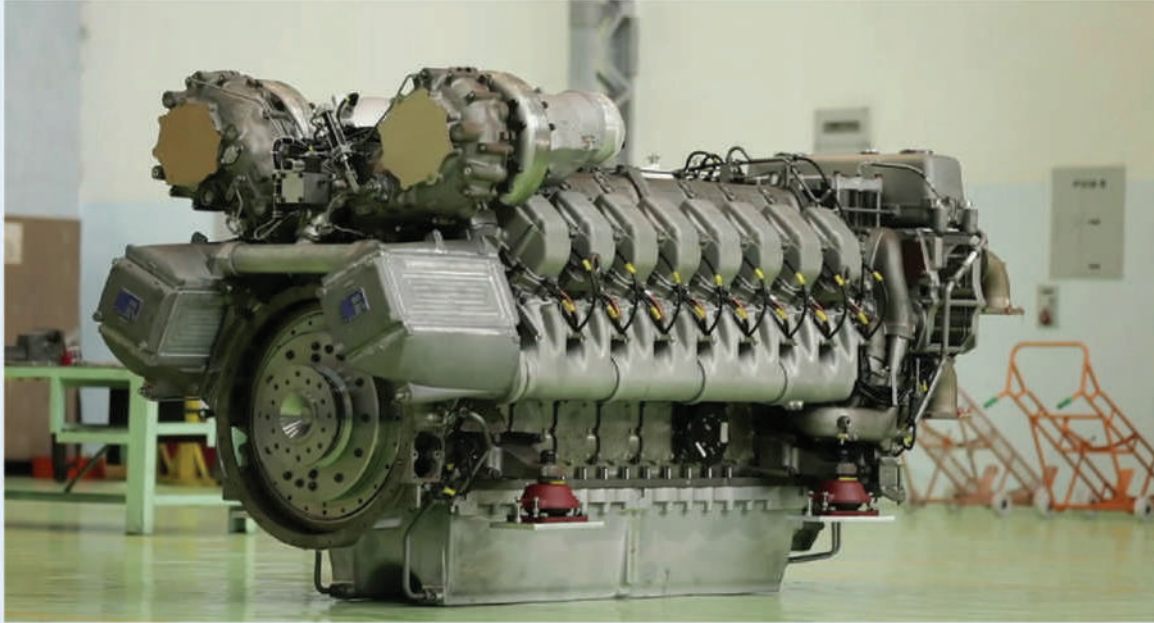
- (a) Scheduled dry docking & refit management in any of the facilities
- (b) In-service-support to ensure maintenance and availability of vessel or fleet in the IOR region
- (c) Any work involving mechanical, electrical, steel fabrication works, piping, hydraulic systems, etc for maintenance/repair
- (d) Technical study and failure analysis



Product Profile

Diesel Engine Plant

Diesel Engine Assembly, Testing & Repair



GRSE MTU Diesel Engines

GRSE's state-of-the-art plant in Ranchi undertakes assembly, overhauling and testing of MTU diesel engines in collaboration with MTU, Germany.

GRSE's Diesel Engine Plant in Ranchi is fully equipped with test bed facility as well as trained service personnel. The Shipyard has modernised the Plant recently and tied up with M/s MTU Germany to indigenise manufacturing of 40% of Engine Parts under Make In India Initiative over next 4 to 5 years.



Product Profile

Portable Steel Bridges

GRSE is the pioneer in manufacturing Pre-Fabricated Steel Bridges in India. Over the last 40 years, GRSE is involved in manufacturing these bridges. With modular design facilitating easy assembly, these bridges can be erected very fast even in the most challenging terrain and conditions. On-site installation infrastructure required being minimal makes them ideal for remote areas. Used mainly by Defence Forces, Border Roads Organisation and civil agencies to restore communication in rural, hilly or flood prone regions.

These versatile bridges often play vital role in strategic surface transport networks. GRSE has supplied many bridges towards Disaster Management (i.e. Tsunami, Landslides etc.) in Andaman, Sri Lanka, Leh (J&K) etc. It is the only Shipyard to receive Green Channel Certification by DGQA for Supply of Bailey Portable Steel Bridges to Indian Army.



- Takes Care of 2 Way Hassle Free Traffic Designed with Heavy Axle Loading as Per Irc-6
- Pre-engineered & Pre-fabricated 10 Ft X 7 Ft Main Girder / Panel
- Modular Design for Easy & Quick Installation and an Ideal Solution to Bridging Problems
- Combination of Strength & Versatility
- Robust Construction for Permanent Application of 40-45 Years with High Durability and Reliability
- Portable which makes it Ideal for Permanent Applications and Emergency Situations
- Ideal for Fast Track and Fine Bound Projects
- Manufactured with 100% Indigenous Material
- Ideally Suited for providing Quick Access to Remote, Inaccessible Areas and Facilitating Viable Socio Economic Development
- Design Verified and Validated (i.e. Live Load Testing of Sample Bridge) by CSIR-SERC Chennai

MODEL -GGB 8000

Sl No	Type of Bridge	Road Width (M)	Max Span (FT.)	IRC-6* Load Class	Weight of Equivalent Wheeled Vehicle
1	Double Lane Modular Bridge (Steel Deck)	7.50	140	70R/CL-A	100 MT / 55.4 MT (Double)

*Indian Road Congress 6



Scan the QR Code
for Double Lane
Portable Steel Bridges



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GRSE Built Portable Suspension Steel Bridge

- Carriageway - 3.277M
- Suspension Bridge especially suitable for hilly terrains where intermediate pier is not possible
- Maximum clear span : 400 FT (122M)
- Low Erection Time, Ease of Assembly and Reusability make it ideal for hilly zones

Sl No	Type of Bridge	Road Width (M)	Max Span (FT.)	BMLC** Load Class
1	Suspension Bridge (Wooden/Steel Deck)	3.277	400	Class 18
			360 FT & below	Class 24

**British Military Load Classification



GRSE's Newly Designed Single Lane Portable Steel Bridge

- Carriageway - 4.25M
- Fully tested, Pre-engineered & Pre-fabricated
- Modular Design for Easy & Quick Installation, Provides ideal solution to bridging problems
- High Strength & Versatility
- Easy to Handle
- Re-usable, Portable and Upgradable
- Available Ex-stock for immediate delivery
- Maximum clear span : 230 FT (70 M)

Sl No	Type of Bridge	Road Width (M)	Max Span (FT.)	IRC-6* Load Class	Weight of Equivalent Wheeled Vehicle
1	Single Lane Bridge (Steel Deck)	3.32/4.25	200/200	30R	38 MT
			190/180	40R	55 MT
			140/140	70R	100 MT
2	Improved Single Lane Bridge (Steel Deck)	4.25	230	30R	38 MT
			230	40R	55 MT
			200	70R	100 MT

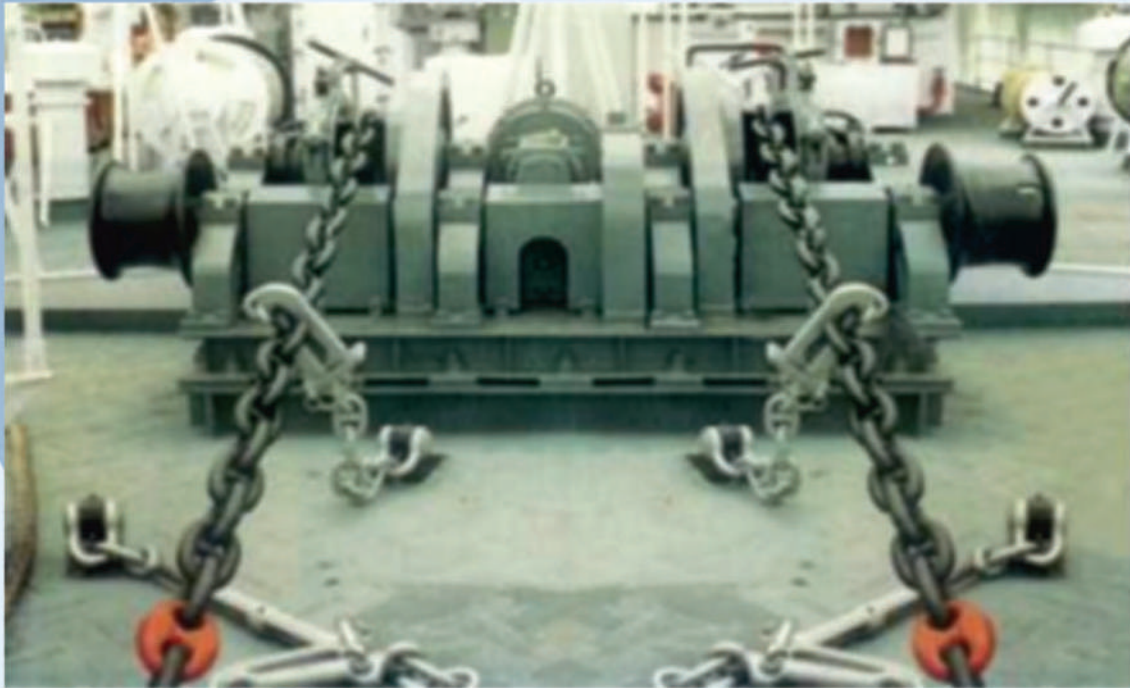
*Indian Road Congress : 6



Scan the QR Code
for Single Lane
Portable Steel Bridges

Product Profile

Deck Machinery



From its inception since 1970, Deck Machinery has come a long way from initiating indigenization of miscellaneous material handling equipments to providing state-of-the-art technical solution for customer specific requirements of the Indian Navy and the Indian Coast Guard.

The product line of equipments is diverse, including a host of non-classified as well as classified items. Since Defence ships are weight sensitive, hence care is taken to maintain high power to weight ratio resulting in 'slim and sleek' design.

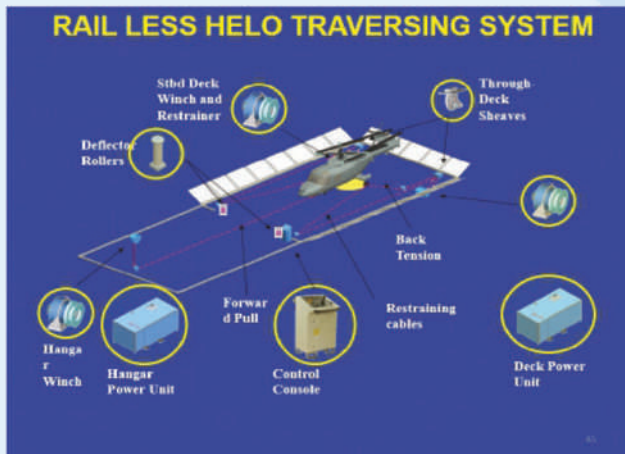
Depending upon the application, the equipment together with principal drive systems-Electrical, Hydraulic and Pneumatic systems are configured and catered to absorb adverse marine situations, with interlocking safety features including emergency mode of operations.



In keeping with stringent quality measures, the equipments are validated using in-house test facility as well as HAT and SAT to the complete satisfaction of the owners as well as third party inspecting agencies, like ABS, IRS, LRS, BV. The Unit is ISO 9001-2008 certified.

The product range briefly includes:

- Helicopter Handling Systems-Rail based and Rail less
- Anchor handling Windlass/Capstan: Upto 87 mm U3 Chain Size
- Boat Davit: Radial with outreach of 6.5 m and SWL of 3 Tonnes and Track way Type, maximum outreach of 5 M and SWL of 14 Tonnes
- Electro-Hydraulic Deck Cranes: SWL of 1.75 Tonnes with an Outreach of 7.2 M
- Mooring Capstans: Upto a maximum of 20 Tonnes
- Special Purpose Equipments-Dock Capstans, Deck Handling Equipment, Electro-Hydraulic Lift, Aft Anchor cum GP winch, Oceanographic winch, Hydrographic winch etc.



GRSE is undertaking phased indigenisation of Rail-less Helo Traversing System under technical collaboration with M/s Mac Taggart Scott. Presently GRSE has achieved 72% indigenous content and is a proven supplier to Indian Navy & Indian Coast Guard.

Accolades



GRSE RECEIVED DEFENCE MINISTER'S AWARD 2022 FOR EXCELLENCE IN DEFENCE & AEROSPACE SECTOR



BEST PERFORMING DEFENCE SHIPYARD OF INDIA
FOUR YEARS IN A ROW



DEFENCE MINSITER'S AWARD FOR EXCELLENCE FOR IN-HOUSE DESIGN EFFORT FOR OFFSHORE PATROL VESSEL, MAURITIUS (CGS BARRACUDA)



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Accolades



LAUNCH OF AI ENABLED NDT, INTELLIGENT WELD INSPECTOR (IWI)



GRSE RECEIVED THE PRESTIGIOUS DUN & BRADSTREET
INDIA'S TOP PSU AWARD 22 IN THE CATEGORY OF
DIGITAL TRANSFORMATION



GRSE RECEIVED THE TIMES ASCENT EILM "THE EASTERN INDIA
BEST EMPLOYER BRAND AWARD IN THE SHIPBUILDING SECTOR"

Footprints



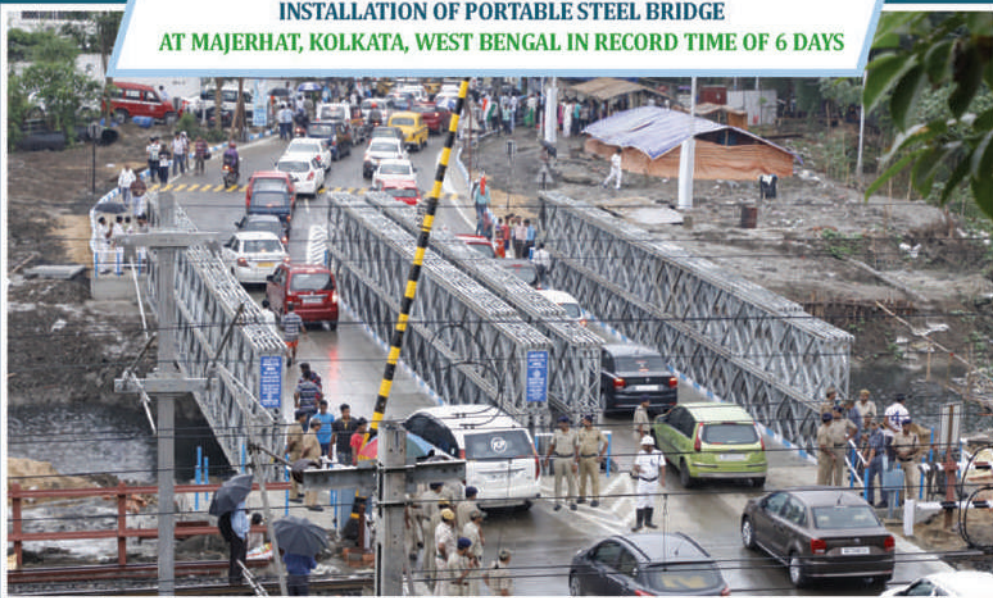
GRSE SIGNED CONCESSION AGREEMENT WITH SMPK TO REVAMP DRY DOCKS AT KHIDDERPORE



GRSE HAS BEEN CONFERRED WITH GREEN CHANNEL CERTIFICATION BY MINISTRY OF DEFENCE, GOI FOR SUPPLY OF PORTABLE STEEL BRIDGES (BAILEY TYPE) TO INDIAN ARMY



**INSTALLATION OF GRSE BUILT 140 FT. DOUBLE LANE MODULAR
STEEL BRIDGE AT FLAGHILL, SIKKIM**

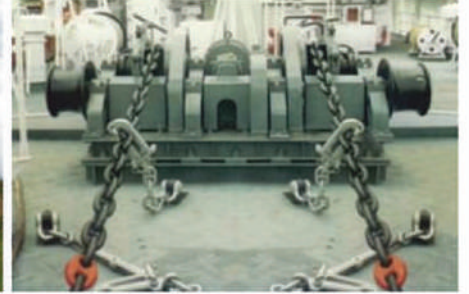


**INSTALLATION OF PORTABLE STEEL BRIDGE
AT MAJERHAT, KOLKATA, WEST BENGAL IN RECORD TIME OF 6 DAYS**





Launching of 1st P-17A Advanced Frigate, INS Himgiri



Garden Reach Shipbuilders & Engineers Ltd.

A Government of India Undertaking - Ministry of Defence

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