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

( A Govt. of India Undertaking - Ministry of Defence )

BUILDERS OF 100 WARSHIPS



INFINITE PASSION  
MEETS UNWAVERING COMMITMENT



## **SUCCESS STORY ON INDIGENIZATION AT GRSE & OPPORTUNITY FOR DEVELOPMENT OF ITEMS**

*In Pursuit Of Excellence & Quality In Shipbuilding*



## 10T Telescopic Deck Crane



- Indigenized by ToT between Indian Vendor and overseas OEM for development and manufacturing of above Crane.

### • Details

Boats to be handled	Survey Motor Boats
SWL	10T
Working radius	7 - 14 M
Hoisting/Lowering	18 - 25 M/MIN
Drive System	Electro-hydraulic drive with Auto-Tensioning
Structure (Fabricated) Steel	IS 2062

## Portable Pedestrian (Assault) Bridge



- GRSE make "Portable Light Weight Modular Assault Bridge" is made of Carbon Fibre Polymer Composite Material and can be used by pedestrians & light vehicles.
- It has a span of 30 ft (9.15 m), width of 2.10 m and weight of 336 kg. It also has a load capacity of IRC-6, 400 kg/sqm (Foot Bridge) & 1.10 MT of ATV. The bridge is first of its kind in India & is Man - Portable and reusable using Crew of 10-12.



## Double Lane Portable Steel Bridge



GRSE make “Double Lane Portable Steel Bridge”, the pre-fabricated bridge has a span of 42.67m without intermediate pier and a width of 7.5m. It can support two-way traffic comprising heavy vehicles with a total load of about 110MT. With a modular design facilitating easy assembly, these bridges can be erected quickly even in the most demanding terrains and conditions.

## 1 MW Alternator with Accessories for 1MW DA



- This equipment coupled with Diesel engine to generate electrical power of 1MW. This item was indigenized in the year of 2020-21.
- Manufacture: M/s Elmot Alternators Pvt. Ltd.

## DA Acoustic Enclosure



- The main function of Acoustic Enclosure is attenuation of noise. This item reduces the noise so that outside of this enclosure there will be very low intensity of sound.
- Manufacture: M/s BBM Acoustic (India) Private Limited.

## Control Systems for 1MW DA



- The DA control panel used for monitoring all the data of diesel engine, Alternator, fire signal, etc. This panel also generate alarm in case value exceed the set value and also shut down the diesel engine in case value exceed shutdown limits.
- Manufacture: M/s Power Control Engineers.



### Battery Charger with Accessories for 1MW DA



- This equipment is able to generate 24V DC with 100 A power output to provide power to all accessories of DG set.
- Manufacture: Electronic Control Corporation.

### Base Frame for 1MW DA



- On this item diesel engine and alternator will be installed along with shock mount
- Manufacture: M/s Matchwell Engineering Pvt. Ltd.



### **Data Acquisition and Processing System (DAPS)**

- The DAPS comprise of two independent entities namely, Data Acquisition System (DAS) and Data Processing System (DPS). They complement each other in terms of data exchange and portability. The DAS is employed primarily for data acquisition onboard survey ships, Survey Motor Boats (SMBs) and Craft of Opportunity (COOP). The DPS is utilized for post-processing of raw data collected from DAS and other sources.
- Manufacture: M/s Pan India Consultants Pvt. Ltd.

### **Connecting Gear for RLHTS**



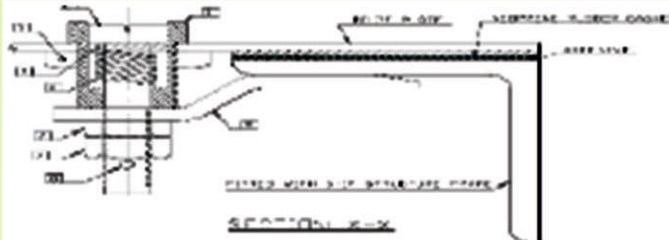
- An interface between the Rail Less Helo traversing system and the helicopter for in/out movement of the hangar. Consists of dismountable sub-assemblies fitted with castor wheels can be assembled and connected to the helicopter by a single person in under 4 minutes

### **Mast Design, Construction and Integration on board Composite superstructure of Vessel**

- GRSE developed this product by self-initiative

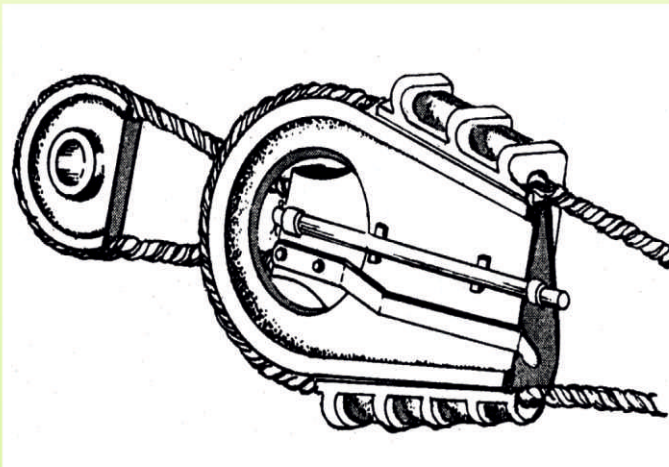


### Quick Acting Mechanism for Securing & Dismantling Bilge Plate



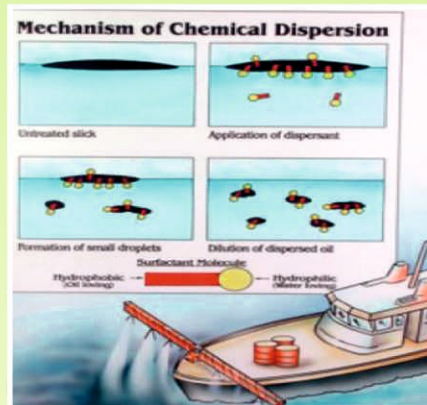
- For securing bilge plates in machinery compartments
- In-house GRSE Design (Applied for Patent) and developed it through Indian vendor

### Cable Gripper



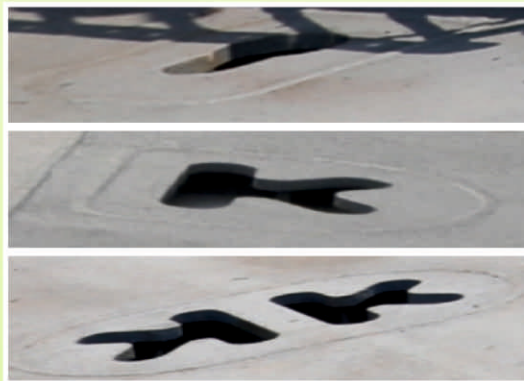
- Grab is deployed for end anchorage of cables used in GRSE Bailey Type Suspension Bridge. Grab is used for anchoring the 12-cables at both ends of GRSE Bailey Type Steel Suspension Bridge

## Oil Spill Dispersant (OSD)



- OSD breaks down the oil into micro-sized droplets, which allows the naturally occurring bacteria to rapidly turn the hydrocarbon into harmless CO<sub>2</sub> and water. This item was indigenized while executing export order of CGS Barracuda for Govt. of Mauritius.
- Manufacturer: M/s Spilcare O Metaclen Pvt. Ltd.

## Lashing Pots



- GRSE In-house Initiative to design Flush Type Single-chain Lashing Pot, Flush Type Double-chain Lashing Pot and Flush Type Tetra-chain Lashing Pot assembly fitted on board LCU Vessel to lash Army Tanks and vehicles on board LCU Tank deck. Same lashing assembly items were imported from German firm for LST (L) Project.
- Manufacturer: M/s Sridhar Machinery







### DA Fuel Consumption Meter



- This item is used for measuring the fuel being consumed by DG set while in operation.
- Manufacture: Toshniwal HYVAC (P) Ltd.

### Coupling Accessories for 1MW DA



- This item is used to connect the Diesel engine with alternator.
- Manufacture: Elmot Alternators Pvt. Ltd.



### Load hangers & compensators for Main engine & DG sets



- This item is Indigenized & equipment has been supplied for 1st ship set of SVL project.
- Manufacturer Name: M/s Muteseal Pvt. Ltd.

## OPPORTUNITY FOR DEVELOPMENT OF ITEMS Current/Future Self-Initiative/Co-Development Projects

### 3T Telescopic Deck Crane



- Electro-hydraulic Deck Crane
- Safe working load (SWL) is 3Ton
- Indigenization under self-initiative at GRSE's Taratala Unit

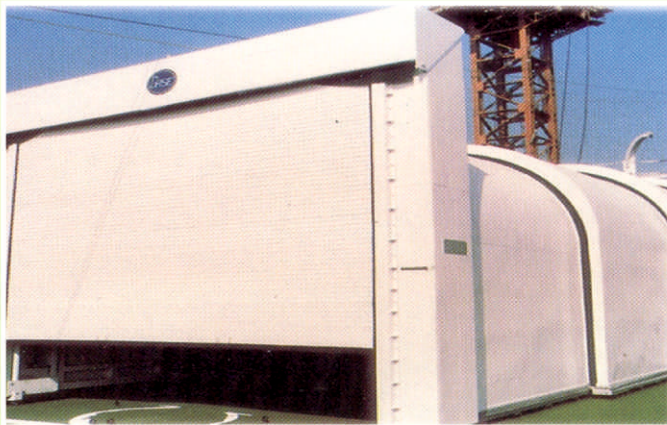


## High Pressure Air Fitting System & Pressure Reducing Stations



Fluid handled	: Compressed air
Operating pressure	: 280 bar
Air velocity	: 20 m/sec (maximum)
Compressor discharge	: 60 cu. m /hr of free air
Piping material	: 70/30 cu- ni conforming to nes 780 part III

## Telescopic Helo Hangar



- Development of Large Size Telescopic Hangar for Survey Vessel (Large) is under progress.
- **Salient Technical Features:**
  - Helicopter to be housed
  - Clear Hangar Opening
  - Mechanism of Traverse
  - Structure (Fabricated)
  - ALH ; AUW = 5.5T
  - 5.15M (W) x 5.91M (H) x 20.5M (L)
  - Rack (SS 316L) & Pinion; Rack Bolted to the Deck
  - Aluminium Alloy 6061 Grade T6



## Magazine Fire Fighting System (MFFS)








- Automatic triggering system for fire protection equipment in magazine compartments consisting sprinkling, inhibitor, chemical smothering systems and foam firefighting systems
- Indigenization of QBSS, ROSS, Bhd cooling System in SVL & ASW-SWC project is under process

## Big Ticket items under Indigenization

- Green Ferry
- IRSS Thermo-Acoustic for ASW-SWC ME & DG Exhaust
- IRSS for Thermo for P-17A 1MW DA & GT Exhaust
- Degaussing System



## List-1

Sl No	Item	Image
1	Ship propulsion - Design, Manufacturing of shafting & propeller, PSI	
2	Electrical propulsion arrangement for small ferries/ boats	
3	Deck Cranes (1 to 5 ton)	
4	Flexible Rod Gearings for Valves	
5	Fire Class Doors (WT / NWT, EMI / EMC Compliance)	





## List-2

1.	<b>Main Engine, Gear Box, Propeller and Raft</b>
2.	<b>Low Frequency Variable Depth Sonar</b>
3.	<b>Gas Turbine Marine Support System (GTMSS)</b>
4.	<b>Water Jet And Shafting</b>
5.	<b>Hull Mounted Multi Beam Echo Sounder (MBES)</b>
6.	<b>Bow And Stern Thruster</b>
7.	<b>Digital Side Scan Sonar System</b>



## **Garden Reach Shipbuilders & Engineers Ltd.**

A Government of India Undertaking - Ministry of Defence

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