









Passion for Excellence



- Largest Exporters of Ships from Indian Sub-continent.
- Unmatchable Track Record of Execution & Delivery.
- World Class products based on In-house Designs.
- Declared Best Performing Shipyard by MOD in April 2017



MAKE IN INDIA

स्वच्छ भारत
एक कदम स्वच्छता की ओर

CRISIL CREDIT RATING
Long - Term "AAA"
Short - Term "A1+"

गोवा शिपयार्ड लिमिटेड
GOA SHIPYARD LIMITED
Ship Builders, Ship Repairers & Engineers



Pictorial View of Goa Shipyard Limited

Goa Shipyard Limited (GSL), established in 1957 is a leading ISO 9001:2015; ISO 14001:2015; ISO 45001:2018 certified shipyard on the west coast of India functioning under the administrative control of Ministry of Defence, Govt. of India. GSL is strategically located on the bank of the river Zuari in Goa, a major international tourist destination, well connected by an international airport and a major shipping port. This shipyard has a modern shipbuilding yard spread over 1,76,000 sq. mtrs. with a 6000 Ton. Ship Lift and Ship Transfer system, dry repair berths for simultaneous construction and repair of ships etc.

Over the years, GSL has garnered reputation as one of the most reputed ship builders in the South Asian region. For over six decades, GSL has designed, built and delivered a wide range of sophisticated vessels for varied applications in the defence and commercial sectors. GSL has developed an indigenous capability to design and build warships with niche strength in design & construction of Patrol Vessels of Steel & Aluminum hull structure. GSL also has proven capability in construction of Glass Reinforced Plastic (GRP) Interceptor boats. As part of general engineering activities, the shipyard also undertakes building of various types of simulators for customers and supply of stern gear for naval vessels.

As one of the few Indian shipyards equipped with an in-house design capability, GSL carries out its own Research & Development through its R&D Unit which is recognized by the Dept. of Scientific & Industrial Research, Ministry of Science & Technology, Govt. of India. In-house design capability is a key to GSL's success in recent past. This shipyard has successfully developed and proven several ship designs for naval applications and has also carried out continual improvements in fuel efficiency, speed and other performance parameters on its designed products.

The product range of GSL includes a wide range of Patrol Vessels, Special Purpose Warships, Survey Vessels, Landing Crafts, Fast Attack Crafts, Sail Training Ships, Offshore Supply Vessels, Hovercrafts, GRP Boats, Tugs, Damage Control Simulators etc.

MoD, Govt. of India, has nominated GSL for construction of 12 nos. GRP Mine Counter Measure Vessels (MCMVs) for Indian Navy and the yard is being equipped for series construction of these sophisticated vessels. GSL has also been entrusted with the construction of two Missile Frigates (Project-1135.6) for the Indian Navy which will have the most advanced and sophisticated equipment fit, weapons & sensors etc.

Constantly building and consolidating its experience gained over half a century and reputation for excellence and consistent track record of timely deliveries, GSL today, confidently looks ahead to successfully meet the challenges of the future.




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Frigates - Project 1135.6



The follow-on P 1135.6 series of frigates are to be constructed at Goa Shipyard under Transfer of Technology with Russia as per Govt to Govt Agreement. Customised to meet Indian Navy's specific requirements, these are potent platforms, with a mission span covering the entire spectrum of Naval warfare; Air, Surface and Sub-surface. The ships would be equipped to operate in littoral and blue waters; both as a single unit and as consorts of a naval task force. Advanced features of stealth include a special hull design, to limit radar cross-section, electromagnetic, infrared and under water noise signatures. The ships would carry highly sophisticated and state-of-art weapon systems and sensors. The Project is the largest shipbuilding project in the history of Goa Shipyard and will propel it into the select league of shipyards which can design and construct complex weapon intensive ships such as Frigates.

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Frigates - Project 1135.6



Principle Particulars :

- **Overall length** : 124.80 M
- **Overall breadth** : 15.20 M
- **Std Displacement** : 3,300 T
- **Draught @ (Std displacement)** : about 4.3 M
- **Max. Draught** : NMT 6.80 M
- **Propulsion** : COGAG, 04 x GTs; 02 x FPP
- **Max Speed @ +40°C Ambient** : 28±0.5 knots
- **Cruising Speed under trial conditions** : 14 knots
- **Cruising Range** : 5000 NM
- **Endurance by provision** : 30 days
- **Ship's crew** : 250 persons

Salient Weapon & Sensors :

- **Surface to Surface Missiles** : BrahMos Missile System (Indigenous)
- **Surface to Air Missiles** : Shtil-1, IGLA
- **Primary Gun** : 76 MM SRGM (Indigenous)
- **Secondary Guns** : 02 x 30 MM Gun Mounts (Indigenous)
- **Torpedo Tubes Launchers** : 02 x ITTL (Indigenous)
- **Rocket Launcher** : 1 x IRL (Indigenous)
- **Hull Mounted Sonar** : HUMSA NG (Indigenous)
- **Active Towed Antenna Sonar** : ACTAS
- **Air & Surface Target Detection Radar** : Fregat-M2EM
- **Detection & Target Designation Radar** : SSR-4 (Indigenous)
- **Airborne and Surface Targets Radar** : Pozitiv-ME 1.2
- **Electronic Countermeasures System** : Shakti EW (Indigenous)
- **Combat Management System** : (Indigenous)

Hangar and stage through facility for Anti-Submarine Warfare Helicopter.

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35 Knots, 50 M. Fast Patrol Vessel (FPV)



This 35 Knots, 50 meters in length, Fast Patrol Vessel, is in-house designed and built by Goa Shipyard Ltd. This vessel is primarily designed for patrolling, anti-smuggling and anti-terrorist operations. It can also support the Navy during wartime as a coastal convoy escort and as a communication link.

The hull of the vessel is of steel and strong enough to withstand continuous heavy sea conditions. Fully air conditioned accommodation is provided for 35 men on-board. This vessel is powered by three nos. 2720 KW diesel engines driving three independent waterjets and is fitted with 30mm Gun at forward position, machine guns on port & starboard and state-of-the-art Navigation and Communication equipment. The vessel is optimized for long periods at sea and is stable in all conditions without ballasting and also has the ability to survive with two compartments damaged.

A total of seven Fast Patrol Vessels have been designed, built and delivered to the Indian Coast Guard by GSL. These vessels have been proven during challenging situations and natural disasters like tsunamis and are presently rendering yeoman service to the Indian Coast Guard. Also two Fast Patrol Vessels have been exported to Mauritius by GSL.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

New Generation Fast Attack Crafts of this design with higher speed upto 37 knots is also available for production.

Salient Features of this Vessel

- **Completely in-house designed.**
- **These class of vessels are proven in service.**
- **Excellent stability & performance proved in harsh sea conditions.**
- **Multiple role capable, cost effective product, comparable to any other similar internationally available product.**
- **Ready availability of proven platform design, which can be adapted to specific customer needs.**

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35 Knots, 50 M. Fast Patrol Vessel (FPV)



General

- **Functions** : Fisheries protection & monitoring of foreign chartered trawlers in EEZ, coastal patrolling, anti-smuggling, Search & Rescue during hostilities and wartime, provide communication link and escort convoys.
- **Hull Material** : Steel, ABS grade B
- **Superstructure** : Aluminium
- **Classification** : Dual Classification ABS & IRS.
  ✠A1 HSC (Special Govt. Service)
  ✠AMS

Main Particulars

- **Length Overall** : 50.44 M (Incl. WaterJet)
- **Breadth (mid.)** : 7.50 M
- **Depth (mid.)** : 4.35 M
- **Draught (Max.)** : 2.10 M
- **Displacement** : 270 Tons

Capacities

- **Accommodation** : 7 Officers & 28 Sailors
- **Fuel Oil** : 28 Tons
- **Fresh Water** : 10 Tons

Performance

- **Speed** : 35 Knots
- **Range** : 1500 NM at 12-14 Knots
- **Endurance** : 7 days

Propulsion System

- **Main Engine** : 3 x MTU
- **Total Power** : 3 x 2720 KW
- **Gear Box** : 3 x Reduction Gear Box
- **Propulsion** : Water jet system KAMEWA Type-71 SII
- **Remote Control System** : MCS - 5, Type 2, RCS - 5WJ of MTU

Electrical Equipment

- **Networks** : 415 V, 3 Phase, 50 Hz / 230 V AC / 24 V DC
- **Generators** : 2 x 120 KW, 415 V, 3 Phase, 50 Hz
  1 x 80 KW, 415 V, 3 Phase, 50 Hz

Deck Machinery

- **Anchor Equipment** : 2 x 203 Kgs.
  HHP Anchor, 17.5 mm dia.
  U2 chain of 247.5 mtrs.
- **Anchor Capstan** : 2 nos. Twin Speed
- **Mooring Capstan** : 1.5 T@ 12 mtrs /minute.
- **Crane** : 1 no. Articulated electro-hydraulic boat handling crane.
- **Rescue Boat** : 4.7 mtrs Rigid Inflatable Boat with 25 HP OBM & 2 x 3.8 mtr Gemini boat with 25 HP OBM

Auxiliary Systems

- Bilge Water Separator meeting IMO regulations of MARPOL
- Vacuum Toilet & Sewage System meeting IMO regulations
- Fresh Water Generating System, RO Type (5 TPD)

Nautical, Surveillance and Communication equipment

- Radar with ARPA
- Magnetic Compass
- Gyro Compass
- Auto Pilot
- DGPS
- Electronic Chart Display & Information System
- Echo sounder
- EM Log
- Communication according to GMDSS A3

Armament

Provision for fitment of:

- 1 x 30 mm Power Operated Gun
- 2 x 12.7mm LMG

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90 M. Offshore Patrol Vessel (90 M. OPV)



This Offshore Patrol Vessel, 90m in length, is an in-house designed product of GSL, capable of patrolling and policing operations, search and rescue operations, embarkation & operation of ALH helicopter for long range all time search, rescue & surveillance, pollution response against oil spillage and external fire-fighting.

Fitted with twin diesel engines, each driving a controllable pitch propeller, through a reduction gear box, the vessel delivers a maximum speed of 26 Knots. The endurance of the vessel is 4500 NM. An Integrated Platform Management System and an Integrated Bridge System are provided on board. The vessel is fitted with a 30 mm Gun and 12.5mm SRCGs with Fire Control System. Option is available for fitment of 76mm SRGM.

The design of this vessel incorporates excellent stability & improvements in terms of functionality, maintainability, better ergonomics & habitability. This product is fuel efficient and cost effective and can be easily adapted to the additional requirements of the customers, if any.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product

Salient Features of this Vessel

- **Completely in-house designed.**
- **Excellent stability and performance proved in harsh sea conditions.**
- **Multiple role capable, cost effective product, comparable to any other similar internationally available product.**
- **Efficient Integration of the Propulsion System with Controllable Pitch Propellers to achieve flexibility of wide variation of speed requirements over operating profile.**
- **Ready availability of proven platform design, which can be adapted to specific customer needs**

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90 M. Offshore Patrol Vessel (90 M. OPV)



General

- **Functions** : Patrolling and policing maritime zones search and rescue operations of ALH for long range all- time SAR and surveillance, pollution control and external fire fighting.
- **Hull Material** : Steel
- **Classification** : Dual Classification ABS & IRS.
  ✠ A1 HSC (Special Govt. Service)
  NIBS ACC AMS Fire Fighting CLASS 1

Main Particulars

- **Length Overall** : 93.89 M
- **Breadth** : 12.60 M
- **Depth MLD** : 6.00 M
- **Draught mean** : 3.60 M
- **Draught (Propeller)**: 4.50 M
- **Displacement** : abt. 1840 Tons

Capacities

- **Accommodation** : 16 Officers & 94 Sailors
- **Fuel Oil** : 200 Tons
- **Fresh Water** : 90 Tons
- **AVCAT** : 10 Tons

Performance

- **Speed** : 26 Knots
- **Range** : 4500 NM at 12-14 knots
- **Endurance** : 30 days

Propulsion System

- **Main Engine** : 2 x 9000 KW
- **Gear Box** : Reduction Gear Box
- **Propulsion** : 2 x Controllable Pitch Propeller
- **Bow Thruster** : 1 x 400 KW

External Fire-Fighting

- 2 x 1200 m^3/hr at 140 MWC

Electrical Equipment

- **Networks** : 415 V, 3 Ph, 50 Hz / 230 V AC / 24 V DC
- **Generators** : 4 x 450 KW, 415 V, 3 Phase, 50 Hz.

Deck Machinery

- **Anchor Equipment** : 2 x 1195 Kgs. H.H.P anchor with chain as per class requirement
- **Crane** : 2 nos. Electro-Hydraulic crane for Pollution Control.
- **Capstan** : 2 nos. Anchor Capstan
  1 no. Mooring Capstan
- **Boats** : 2 nos. 6.5 m RIB
  2 nos. 4.7 m Gemini Boats + 1 no. 3.8 m Gemini
- **Aviation** : Landing deck for up to 10 T AUW Helo.
  Hangar for Advanced Light Helicopter of 5.5 T AUW.
  Helo Traversing Gear
  Helo Landing Grid

Armament

Provision for fitment of:

- 1 x 30 mm, CRN-91 gun with FCS.
- Option is also available with 76 mm gun

Auxiliary Systems

- Oily Bilge Water Separator meeting IMO regulations
- Sewage & Vacuum Toilet System meeting MARPOL requirements.
- F.W. Generating System, RO type (1 x 20 TPD) + WHR type (2 x 10 TPD)
- Active Fin Stabilizer

Integrated Platform Management System

- Machinery Control
- Integrated Bridge
- Power Management
- Damage Control

Nautical, Surveillance and Communication Equipment

The Integrated Bridge System consists of

- X, S Band Radar with ARPA / RRB interface
- Magnetic Compass
- Dual Gyro Compass
- Auto Pilot
- Echosounder
- EM Log
- DGPS / GLONASS
- Electronic Chart Display & Information System
- Communication according to GMDSS-A3

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Naval Offshore Patrol Vessel (NOPV)



The NOPV is based on the in-house design developed by GSL through its R&D. Four of these vessels have been constructed for the Indian Navy by GSL. These vessels have successfully proved the specified performance and sea worthiness during operations in service with the Indian Navy. Similar vessels are constructed at GSL for Sri Lanka Navy.

This 105M. NOPV is capable of fleet support operations, coastal and offshore patrolling, ocean surveillance and monitoring of SLOCs, defence of offshore oil installations, escorting high value ships and embarkation & operation of ALH helicopter. Powered by twin diesel engines with CPP, the vessel delivers a speed of 25 knots. The vessel has an endurance of 6000 NM. An advanced Automation System is provided for Platform management. The vessel is fitted with state-of-the art Navigation & Communication equipment and Electronic Warfare equipment. The weaponry fit includes 76 mm SRGM and 30 mm guns with fire control system and Chaff launchers.

As compared to the designs of similar NOPVs in service with navies / coast guards in other countries, the design of this platform incorporates excellent stability & improvements in terms of functionality, maintainability, better ergonomics & habitability. This product is cost effective and can be easily adapted to the additional requirements of the customers, if any.

Due to its excellent stability and performance, 'INS SUMITRA from this series of NOPVs, was used as the Presidential Yacht by Indian Navy for International Fleet Review - 2016.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

Salient Features of this Vessel

- **Completely in-house designed vessels proven in service since Jan 2013**
- **Cost effective Warship design to handle multiple role requirements.**
- **Excellent stability & performance proved in harsh sea conditions, complies to stringent Naval standards etc.**
- **Specially shaped hull developed to provide Stealth features for combat capability.**
- **Ready availability of proven platform design, which can be adapted to specific customer needs.**
- **Capable of taking higher weapon package, such as BrahMos or other missiles.**
- **High degree of Automation for Platform Management for minimum crew.**

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Naval Offshore Patrol Vessel (NOPV)



General

- **Functions** : Surveillance and accomplishing surface warfare operations in order to prevent infiltration and transgression of maritime sovereignty.
- **Hull Material** : Steel.
- **Classification** : Dual Classification ABS & IRS.
  ✠A1 E HSC NAVALCRAFT
  + AMS of ABS and equivalent of IRS

Main Particulars

- **Length** : 105.34 M
- **Breadth** : 12.90 M
- **Depth MLD** : 8.50 M
- **Draught mean** : 3.60 M
- **Draught (Propeller)** : 4.90 M
- **Displacement** : abt. 2200 Tons

Capacities

- **Accommodation** : 16 Officers & 102 Sailors
- **Fuel Oil** : 270 Tons
- **Fresh Water** : 60 Tons
- **AVCAT** : 30 Tons
- **FORU** : 40 Tons

Performance

- **Speed** : 25 Knots
- **Range** : 6000 NM at 16 knots
- **Endurance** : Normal-20 days, Extended-50 days

Propulsion System

- **Main Engine** : 2 x 8100 KW
- **Gear Box** : Reduction Gear Box
- **Propulsion** : 2 x Controllable Pitch Propeller
- Remote Control System for Propulsion Machinery

Electrical Equipment

- **Networks** : 415 V, 3 Ph, 50 Hz / 230 V AC / 24 V DC
- **Generators** : 2 x 500 KW, 2 x 350 KW, 415 V, 3 Ph, 50 Hz.
- **Emergency Gen** : 1 x 100 KVA
- **Frequency** : 1 x 85 KVA, 440 V, 3 Ph, 60 Hz
- **Convertors** : 1 x 10 KVA,115 V, 1Ph, 400 Hz.

Deck Machinery

- **Anchor Equipment** : 2 x 1440 Kgs H.H.P. anchor with chain as per class requirement
- **Crane** : 2 nos Electro-hydraulic Cranes for handling 6.5 mtrs. RIB & Torpedo recovery
- **Capstan** : 2 nos. Anchor Capstans
  1 no. Mooring Capstan

Aviation

- Landing deck for upto 10 T AUW Helo
- Hangar for Advanced Light Helicopter of 5.5T AUW
- Helo travarsing gear
- Helo landing grid

Armament

Provision for fitment of:

- 1 x 76 mm SRGM with FCS
- 2 x 30 mm CIWS with FCS
- 4 x Chaff Launchers

Auxiliary Systems

- Oily Bilge Water Separator meeting IMO requirements
- Sewage & Vacuum Toilet System meeting IMO / MARPOL requirements
- F.W. Generating system, RO type (2 x 30 TPD)
- Active Fin Stabilizer

Nautical, Surveillance and Communication Equipment

- Radar with ARPA
- Ring Laser Gyro
- DGPS
- Magnetic Compass
- Auto Pilot
- Electronic Chart Display & Information System
- Echosounder
- Electro Magnetic Log
- Communication according to GMDSS

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New Version 105M. Advanced Offshore Patrol Vessel (AOPV)



The New Version 105M. Advanced Offshore Patrol Vessel (AOPV) is the latest from GSL's stable of Offshore Patrol Vessel designs in the service of Indian Navy and Indian Coast Guard. Of the order of total eleven New Version AOPVs received from Indian Coast Guard, Six have already been delivered. The first of the class entered ICG service in Oct. 2015. This Vessel is designed for patrolling and policing maritime zones, search and rescue, pollution control, external fire fighting and embarkation & operation of ALH helicopter for long range all time search and surveillance. Powered by two diesel engines with CPP, the vessel delivers a maximum speed of 25 knots and has a range of 6500 NM. The vessel can be provided with other customer required propulsion options. The Coast Guard version of the vessel is armed with one 30mm Gun and two 12.5mm SRCGs with fire control system. However the space and structure is suitable for fitment of 76mm SRGMs. The Vessel has a rail-less Helo-traversing system for Helicopter handling. This provides a clear deck for Helo-operations without the attendant rail fittings. A state-of-the-art navigation & communication equipment with Integrated Bridge System is provided on board. Modular Mast options are available for higher weapon fit.

The design of this Vessel incorporates excellent stability & improvements in terms of functionality, maintainability, better ergonomics & habitability. The basic platform is fuel efficient and cost effective and can be easily adapted to any special sea evolution requirements of the Customer.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

Salient Features of this Vessel

- Completely In-house designed.
- Excellent stability and performance proved in harsh sea conditions.
- Multiple role capable, cost effective product, comparable to any other similar internationally available product.
- Efficient Integration of the Propulsion System with CPP to achieve flexibility of wide variation of speed requirements over operating profile.
- Improved Fuel Efficiency & higher range.
- Ready availability of proven platform design, which can be adapted to specific customer needs.

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New Version 105M. Advanced Offshore Patrol Vessel (AOPV)



General

- **Functions** : Patrolling & policing, SAR, Pollution control etc. Protect Offshore assets and Island territories.
- **Hull Material** : Steel to ABS Gr A/B/D
- **Superstructure** : Mild Steel to ABS Gr B.
- **Classification** : Dual Classification ABS & IRS. + A1 HSC (Special Government Service) Ⓔ + AMS NIBS + ACC by ABS and equivalent of IRS

Main Particulars

- **Length** : 105 M (approx)
- **Breadth** : 13.60 M (approx)
- **Draught mean** : 3.65 M (approx)
- **Displacement** : 2400 Tons (approx)

Capacities

- **Accommodation** :14 Officers & 98 Sailors
- **Fuel Oil** : 300 Tons
- **Fresh Water** : 100 Tons
- **AVCAT** : 12 Tons

Performance

- **Speed** : Not less than 25 Knots
- **Endurance** : Not less than 6000 miles

Aviation

- Operation & embarkation of 1 no twin engine helo of AUW 6800 kgs.

Propulsion System

- **Main Engine** : 2 x Diesel Engines (2 x 9000 KW)
- **Gear Box** : 2 x Marine Reduction Gearbox
- **Propulsion** : 2 x Controllable Pitch Propeller

External Fire-Fighting

- 2 x 1000 m3/hr External Fi-Fi pumps driven by Main propulsion Gear Box.

Electrical Equipment

- **Networks** : 415 V, 3 ph, 50 Hz, 230 V AC, 24 V DC
- **Generators** : 4 x 450 KW, 415 V, 3 Ph, 50 Hz.
- **Emergency Generator** : 1 x 80 KW, 415 V, 3 Ph, 50 Hz.

Deck Machinery

- **Anchor Equipment** : 2 nos Anchors of 1440 Kg HHP/ equivalent SHHP
  2 nos electric driven Anchor Capstan. Dual speed electric motor
  vertical type Mooring Capstan
- **Crane** : 2 nos Articulated Cranes of 1 Ton at 9 mtrs. & 2 Ton at 4 mtrs. class approved (SOLAS)
- **Davits** : 2 nos Radial Davits, 2 nos 40 Knts. RIBs with Inboard Engines, 2 nos Quick Response RIBS, 5 men with overhead Davit.
- **Rescue Boat** : 1 no Inflatable Gemini boat 8 men, 40 HP

Auxiliary Systems

- Oily bilge water Separator
- Vacuum Toilet System

Armament

- 1 no 30 mm Gun with FCS
- 2 nos 12.7 mm Gun with FCS

Nautical, Surveillance and Communication Equipment

- Integrated Navigation Bridge System
- Gyro ♦ Auto Pilot ♦ EM Log
- Echo sounder ♦ 2 nos DGPS & 1 no GLONASS
- Magnetic Compass ♦ GPS compass
- 25 KW X Band Radar for Navigation with ARPA
- 30 KW S Band Radar for Surveillance with ARPA
- Fibre Optic / Ring Laser Gyro Compass
- Electronic Chart Display
- Anemometer, etc

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75 M. Offshore Patrol Vessel



This mid-sized Offshore Patrol Vessel, 75m in length, is a new in-house designed product of Goa Shipyard Limited, capable of undertaking day and night patrolling and policing operations, search and rescue operations, embarkation & operation of upto 5.5 Ton helicopter for long range all time search & rescue and surveillance.

Fitted with twin diesel engines, each driving a Controllable Pitch Propeller, through a reduction gear box, the vessel delivers a maximum speed of 25 Knots. The endurance of the vessel is 3000 NM. The vessel is equipped with an Integrated Platform Management System and an Integrated Bridge System.

The vessel is suitable for fitting one 76 mm SRGM, two 30 mm guns and other weapons and sensors as per clients choice.

Main Particulars

- **Length Moulded** : 74.80 M
- **Breadth Moulded** : 11.50 M
- **Draft** : 3.60 M
- **Displacement** : about 1440 T
- **Complement** : 12 Officers, 52 Sailors

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Sail Training Ship (STS)



GSL takes pride in building the first ever Sail Training Ship "INS Tarangini" for the Indian Navy for training cadets. This Ship is built for worldwide operations to the design of Colin Mudie, UK, and was commissioned on 11th Nov. 1997. After satisfactory performance of "INS Tarangini", GSL secured a repeat order for second Sail Training Ship "INS Sudarshini" which was successfully built and was commissioned on 27 January 2012.

The ship is steel hulled, round bilged, three masted sailing ship, square rigged on the forward and main mast and fore and aft rigged on the mizzen mast and has eighteen sails with a sail area of approx. 1035 sq.m. This ship is a barque rigged Sailing Vessel for world wide operation as a training ship. It has got a very high endurance and can be deployed at sea continuously for a period of twenty days. The ship will have an accommodation for 61 persons and will be used under sail or under power and under combination of both.

Sail training ships are increasingly being used as basic seamanship and character building platforms by Navies the world over.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

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Sail Training Ship (STS)



General

- **Functions** : This three masted, square rigged, sail ship is used for training of cadets on rigging of sails.
- **Hull Material** : Steel
- **Superstructure** : Aluminium
- **Classification** : Lloyd's Register of shipping +100 A1 SSC MONO YACHT G6

Main Particulars

- **Length Overall** : 54.00 M
- **Length Overall (Hull)** : 42.80 M
- **Breadth (mid.)** : 8.50 M
- **Draught** : 4.20 M
- **Sail area** : 1035 sq. mtrs.
- **Displacement**(full load) : 513 Tons (approx.)

Capacities

- **Accommodation** : 16 Crew & 45 Cadets
- **Fuel Oil** : 33 Tons
- **Fresh Water** : 45 Tons

Performance

- **Speed** : 8 Knots (approx.)
- **Range** : 2000 NM
- **Endurance** : 20 days

Propulsion System

- **Main Engine** : 2 x 320 HP at 1800 RPM
- **Gear Box** : Reverse reduction type
- **Propulsion** : 2 x Fixed pitch propeller

Fire-Fighting (Internal)

- Co_2 system

Electrical Equipment

- **Networks** : 415 V, 3 Phase, 50 Hz / 230 V AC / 24 V DC
- **Generators** : 2 x 120 KW, 415 V, 3 Phase 50 Hz
- **Emergency Gen**: 6 KVA, 230 V, 1 ph, 50 Hz

Deck Machinery

- **Anchor Equipment** : 2 x 570 Kgs. H.H.P Anchor, with chain as per class requirement.
- **Davit** : 2 nos. swan neck single davit for handling RIB
- **Winches** : 4 nos. electric mooring winches.
- **Boats** : 1 Rescue Boat of 4.7 M long. 1 RIB of 4.7 M long.

Auxiliary System

- Oily Bilge Water Separator
- STP cum Vacuum Toilet System
- F.W. Generating System, RO type (10 TPD)

Navigation & External Equipment Communication Equipment

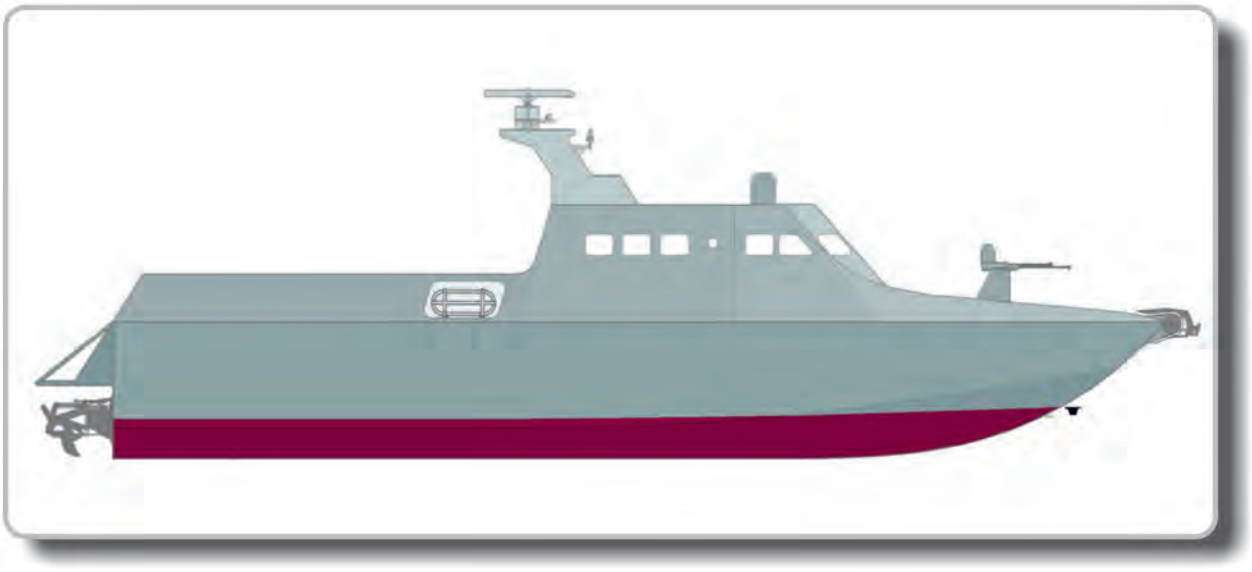
- 10 KW X-Band Radar with ARPA
- Magnetic Compass
- Gyro Compass
- DGPS
- Electronic Chart Display & Information system
- Echosounder
- Speed log
- Communication according to GMDSS-A3

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29 M. Interceptor Craft



GSL has developed 29 M Interceptor Boat of Aluminium Construction. The craft is propelled by two engines with Waterjet propulsion system which gives a speed in excess of 45 knots. This craft is designed for interdictory functions as well as normal patrolling in shallow water operations.

Role: Coastal surveillance, search and rescue operations, fishery protection, high-speed interception of small, manoeuvrable intruder craft, special forces operations and anti-terrorist operations.

Capabilities: Shallow water operations, exceptional maneuvering and survivability, rapid acceleration and deceleration, high speed stability and excellent sea keeping characteristics. Topside deck designed to maximize payload or armament carrying ability and designed to carry state-of-the-art electro-optic detection and surveillance systems and specially designed to absorb the dynamic recoil loads of a 20-30mm cannon.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

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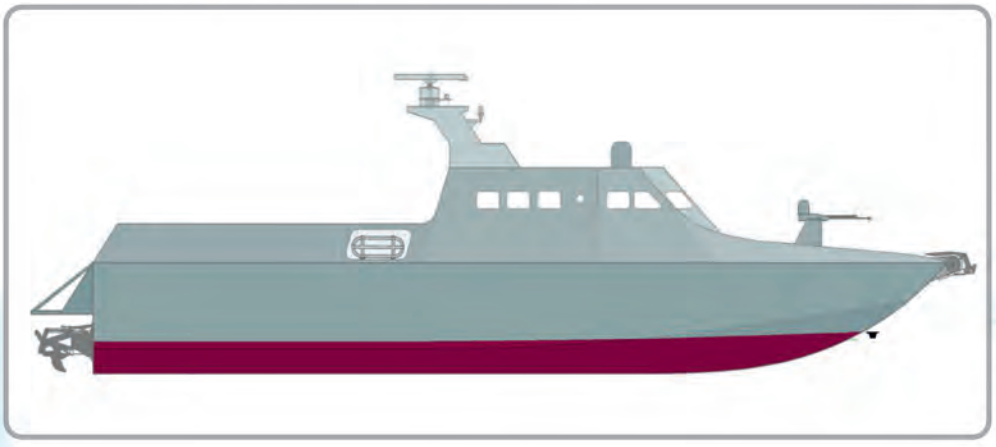
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29 M. Interceptor Craft



General

- **Hull Material** : Aluminium
- **Superstructure** : +100 A1 SSC Patrol Mono+LMC HSC G5 or equivalent

Main Particulars

- **Length Overall** : 29.00 M
- **Breadth** : 7.15 M
- **Depth** : 3.52 M
- **Draught mean** : Not more than 1.4 M
- **Displacement** : 105 Tons

Capacities

- **Accommodation** : 2 Officers & 6 Sailors
- **Fuel Oil** : 18 Tons
- **Fresh Water** : 1 Tons

Performance

- **Speed** : 45 Knots
- **Range** : 500 NM@ cruising speed (20-25 kn)

Propulsion System

- **Main Engine** : 2 x Diesel Engines.
- **Gear Box** : 2 x Gear Box with hydraulic pump for Water jet system
- **Propulsion** : 2 x Water Jet

Electrical Equipment

- **Networks** : 415 V, 3 Phase, 50 Hz / 230 V AC / 24 V DC
- **Generators** : 2 x Diesel Generators developing 50KW power.

Armament

- 1 no. 20mm Naval Stabilised Gun, HMG

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Survey Motor Boat



The boat is capable of carrying out Hydrographic survey operations using modern surveying equipment / system, up to a minimum water depth of one meter below hull mounted single beam echo-sounder transducers. It shall also be able to undertake emergency operations like landing shore survey parties and providing logistic support to shore camps.

The boat has been designed to be operational and manoeuvred safely and effectively at speed with full complement in sea conditions. The vessel is very stable and resistant to capsize. The chines are particularly stiffened to ensure that impacts at the waterline do not compromise integrity of the hull.

The vessel offers good manoeuvrability and throttle response throughout its speed range and particularly when coming alongside or breaking away from an underway vessel at its full load and complement.

The design and construction of the boat is in such a way that it will be able to withstand sudden impacts arising from grounding, if any, without any compromise to integrity of the hull, to the extent possible.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

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Survey Motor Boat



General

- To carryout Hydrographic survey operations using modern surveying equipment/systems, up to a minimum water depth of one meter below hull mounted single beam echo-sounder transducers.

Material of Construction

- **Hull** : Fibre Reinforced Plastic (FRP)
- **Wheel House** : Fibre Reinforced Plastic (FRP)

Classification

- Indian Register of Shipping (IRS)

Main Particulars

- **Length extreme** : 9.35 M (Incl. all appendages)
- **Length Overall (Hull)** : 8.62 M
- **Breadth (mid.)** : 2.86 M
- **Draught (Max.)** : 0.60 M
- **Displacement** : 6.70 Tons (full load condition)

Capacities

- **Accomodation** : 3 crew and upto 6 passengers
- **Fuel Oil** : 500 Litres
- **Fresh Water** : 50 Litres

Performance

- **Speed** : More than 20 knots
- **Range** : 8 Hrs @ 12 knots speed

Propulsion System

- **Main Engine** : 2 x Volvo Penta D3 170 inboard diesel engines
- **Propulsion** : Volvo Penta integrated stern drive

Electrical

- **Networks** : 24 V DC
- **Generator** : 11KVA, 230 V AC. Cummins Onan DG set
- **Air Conditioner** : 1.5 ton Window Type AC

Deck Machinery

- **Equipment** : Bollards, Fairlead, Cleats, Towing hook, etc.

Armament

- Provision for fitment of one LMG at foredeck and locker for stowage of arms.

Nautical, Surveillance and Communication Equipment

- Radar
- Echo Sounder
- Magnetic Compass
- HF Radios
- Walkie-talkies

Life Saving Appliances

- Life jackets, Life buoys etc.

Davit

- Hand winch type, 50 kgs Lifting Capacity, 1.5 m reach.

Note: This boat can be customised as per owner's requirement.

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40 Knots High Speed FRP Interceptor Craft



The boats shall be day/night surveillance and investigation vessels for operating in shallow waters in and around harbour and anchorage. The boats shall be highly seaworthy, unsinkable type (having 10% reserve buoyancy even when filled with water) and shall be able to sustain operation upto sea state 2 in open sea and also in breaking sea waves near the coast while in shallow water. The boats have propulsion, power generation, life saving & ballistic protection and other engineering and electrical systems to carry out safe and reliable operations.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

Salient Features of craft:

- Undertake harbour and nearby coastal patrol independently.
- Investigate suspected vessels in/ near harbour/ anchorage for law enforcement duties.
- Limited search and rescue operations in and around harbour.
- Transportation of limited men and material between shore and vessels at anchorage.

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40 Knots High Speed FRP Interceptor Craft



General

- **Functions** : Day / night surveillance and investigation vessels operating in shallow waters in and around harbour and anchorage for law enforcement duties.

Material of Construction

- **Hull Material** : Fibre Reinforced Plastic (FRP)
- **Wheelhouse** : FRP with bullet proof panels.
- **Classification** : Indian Register of Shipping (IRS)

Main Particulars

- **Length Overall** : 9.85 M
- **Length of Waterline** : 9.25 M
- **Breadth (mid.)** : 3.38 M
- **Draught at amidships** : 0.65 M (Light)
- **Draught at (Max.)** : 0.74 M
- **Displacement** : 5.40 Tons (full load condition)

Capacities

- **Accomodation** : 4 crew and upto 10 passengers
- **Fuel Oil** : 650 Litres
- **Fresh Water** : 100 Litres

Performance

- **Speed** : 40 knots
- **Range** : 75 NM at 25 knots with 25% reserve

Propulsion System

- **Main Engine** : 2 x 275 BHP VERADO MARINER OBMs

Electrical Equipment

- **Network** : 12 V DC

Deck Machinery

- **Equipment** : Bollards, Fairlead, Bow roller, Tow hook etc.

Auxiliary System

- As per Class requirements.

Armament

- Provision for fitment of one LMG at foredeck and locker for stowage of arms.

Nautical, Surveillance and Communication Equipment

- Magnetic Compass
- VHF & Police Radio
- Walkie-talkies
- Siren
- Loudhailer
- Electric whistle
- Marine & night vision binoculars
- Search light

Life Saving Appliances

- Life jackets, Life buoy etc.

Personal Protection Equipment

- Bullet proof life jackets & Bullet proof helmets etc.

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35 Knots High Speed FRP Interceptor Craft



The boats shall be day / night surveillance and investigation vessels operating in shallow waters in and around harbour and anchorage. The boats are highly seaworthy, unsinkable type (having 10% reserve buoyancy even when filled with water) and are able to sustain operation upto sea state 3 in open sea and also in breaking sea waves near the coast while in shallow water. The boats have propulsion, power generation, life saving & ballistic protection and other engineering and electrical systems to carry out safe and reliable operations.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

Salient Features of boat:

- Undertake harbour and nearby coastal patrol independently.
- Investigate suspected vessels in / near harbour / anchorage for law enforcement duties.
- Limited search and rescue operations in and around harbour.
- Transportation of limited men and material between shore and vessels at anchorage.

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35 Knots High Speed FRP Interceptor Craft



General

- **Functions** : Day / night surveillance and investigation vessels operating in shallow waters in and around harbour and anchorage.
- **Hull Material** : Fibre Reinforced Plastic (FRP)
- **Classification** : Indian Register of Shipping (IRS)

Main Particulars

- **Length Overall** : 13.00 M (excluding aft platform)
- **Length on Waterline** : 11.30 M
- **Breadth (mid.)** : 3.70 M (including collar)
- **Draught at amidships** : 0.70 M
- **Draught at (max)** : 0.90 M
- **Displacement** : 12 Tons (full load condition)

Capacities

- **Accomodation** : 4 crew and upto 10 passengers
- **Fuel Oil** : 550 Litres
- **Fresh Water** : 100 Litres

Performance

- **Speed** : 35 knots
- **Range** : 75 NM at 25 knots with 25% reserve

Propulsion System

- **Main Engine** : 2 x 490 BHP @ 2500 rpm Cummins QSC 8.3 500 INT Inboard Diesel Engines.
- **Gear Box** : 2 x Reversible Gear Box ZF 286
- **Propulsion** : 2 x Waterjet Hamilton HJ 292

Electrical Equipment

- **Network** : 24 V DC
- **Generator** : 9.1 KVA, 230 V AC, Mase IS9.1 S
- **Air Conditioner** : 30,000 BTU per Hr. Webasto WBCC30D

Deck Equipment

- Bollards, Fairlead, Bow roller, Tow hook etc.

Armament

- Provision for fitment of one LMG at foredeck and locker for stowage of arms.

Life Saving Appliances

- Life jackets, Life buoy etc.

Personal Protection Equipment

- Bullet proof wheelhouse, Bullet proof jackets & Bullet proof helmets etc.

Nautical, Surveillance and Communication equipment

- Radar
- Echo Sounder
- Communication and Magnetic Compass
- Global Positioning System
- VHF & police radio
- Walkie-talkies
- Marine & night vision binoculars
- Search light

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14 M. Medium Speed Patrol Boat



The Patrol Boat is a hard chine mono hull form that has been proven under offshore conditions and gives an outstandingly seaworthy boat with predictable and excellent handling agility at all speeds.

The state-of-the-art hull form is derived directly from hull designs that are proven in service and known for their good sea keeping capability at high speed. The hull is capable of handling sea stae 3 at full speed whilst affording the crew reasonable comfort.

With a skilled helmsman, the patrol boat can be operated effectively in conditions up to sea state 5.

With standard twin diesel engines, the boat is capable of reaching a speed of 20 knots plus at full load. The Patrol Boat is of closed cabin configuration and air-conditioned main cabin / operation area / accommodation for boat crew.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

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14 M. Medium Speed Patrol Boat



General

- Day / night surveillance and investigation vessel operating in shallow waters in and around harbour and anchorage for law enforcement duties.

Material of Construction

- **Hull Material** : Fibre Reinforced Plastic (FRP)
- **Wheelhouse** : FRP with bullet proof panels.

Classification

- Germanisher Lloyd

Main Particulars

- **Length Overall** : 14.00 M (Including aft. platform)
- **Breadth (Max.)** : 04.00 M (Including collar)
- **Draught (Max.)** : 0.60 M
- **Displacement** : 12.5 Tons (full load condition)

Performance

- **Max Speed** : More than 20 knots
- **Operational** : Sea State - 03
- **Survivability** : Sea State - 05

Propulsion System

- **Main Engine** : 2 x Volvo Penta D4 225 marine engines
- **Propulsion** : Volvo Penta integrated stern drive

Electrical

- **Networks** : 24 V DC
- **Generator** : 10 kW, 230 V AC. Lourenco Marine DG set
- **Air Conditioner** : 2 x 24000 BTU Marvair AC System

Deck Equipment

- Bollards, Fairlead, Cleats, Towing hook, etc.

Armament

- Provision for LMG fitment for 225 degrees operation provided on the forward deck.
- Locker for stowage of arms provided.

Nautical, Surveillance and Communication Equipment

- Radar
- GPS
- Magnetic Compass
- VHF Radio
- Siren
- Walkie-talkies
- Loudhailer
- Electric Whistle
- Search light
- AIS Marine
- Day & Night vision Binoculars

Life Saving Appliances

- Life Raft
- Life Jackets
- Life buoys

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15 M. High Speed Patrol Boat



The boat is a day / night surveillance and investigation vessel operating in shallow coastal waters in and around harbour and anchorage. The boat is highly seaworthy, unsinkable type and is able to sustain operations up to sea state 3 in open sea and also in breaking sea waves near the coast while in shallow water. The boat has propulsion & power generation, life saving & ballistic protection and other engineering and electrical systems to carry out safe and reliable operations.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

Salient features of boat:

- **Undertake harbour and nearby coastal patrol independently.**
- **Investigate suspected vessels in / near harbour / anchorage for law enforcement duties.**
- **Limited search and rescue operations in and around harbour.**
- **Transportation of limited men and material between shore and other vessels at anchorage.**

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15 M. High Speed Patrol Boat



General

- Day / night surveillance and investigation vessel operating in shallow waters in and around harbour and anchorage for law enforcement duties.

Material of Construction

- **Hull** : Fibre Reinforced Plastic (FRP)
- **Wheel House** : Fibre Reinforced Plastic (FRP)

Classification

- Indian Register of Shipping (IRS)

Main Particulars

- **Length Overall** : 15.00 m (including aft platform)
- **Breadth (Max)** : 4.10 m (including collar)
- **Draught Midship** : 0.77 m (light)
- **Draught Max** : 1.00 m
- **Displacement** : Not more than 15 Tons

Capacities

- **Accommodation** : 4 Crew and upto 8 passengers
- **Fuel Oil** : 1800 Litres
- **Fresh Water** : 200 Litres

Performance

- **Speed** : 30 Knots
- **Range** : 8 hours in the area of operation

Propulsion System

- **Main Engine** : 2 x Caterpillar C9 ACERT 503 BHP@ 2500 rpm inboard diesel engines
- **Gear Box** : 2 x ZF 286A Reversible Gear Box
- **Propulsion** : 2 x Conventional Propulsion

Electrical Equipment

- **Networks** : 24 V DC
- **Generators** : 11 kW, 230 V AC, Lourenco Marine DG Sets
- **Air Conditioner** : 2 X 24000 BTU Marvair AC System

Deck Equipment

- Bollards
- Fairlead
- Cleats
- Towing hook
- Bow Roller

Nautical, Surveillance and Communication Equipment

- Radar
- Echo Sounder
- Magnetic Compass
- Portable GPS
- VHF & Police radio
- Walkie-talkies
- Marine & Night vision Binoculars
- Search light
- AIS

Life Saving Appliances

- Life Raft
- Life Jackets
- Life buoys, etc

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15.5 M. Fast Interceptor Boat





The Fast Interceptor Boat (FIB) is capable of performing high speed pursuits and interception in various border protection roles including anti-smuggling, anti-infiltration, fisheries, patrol and immigration and anti-terrorism activities. The vessel can also be used for search and rescue operations.

The boat hull is constructed making use of most advanced FRP construction technology i.e. Infusion technology, thus giving the boats the advantage of longer life, higher strength, light weight and increased speed while saving on operating costs. The FIB is capable of surviving at sea state 6 and capable of withstanding 4G acceleration and is a maneuvering marvel which can withstand rough waters and choppy seas. Even at its top speed, it can be brought to a grinding halt within seconds.

With an operating range of 150 nm with 25% reserve fuel, it can act as a mean machine to patrol the coastal waters, ports and anchorage areas as well as high seas within permissible limits beyond visual range.

The boat can be put into sea for operation in shortest possible time from an un-alerted state. The boats are fully air-conditioned for crew comfort during prolonged patrolling duties.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

Salient features of boat:

- **Patrolling in shallow coastal waters during day & night extended up to deep waters in limited capacity**
- **Search & Rescue**
- **Special forces operations**
- **Interception & boarding of high speed vessels**
- **Operate with force protection vessels & other crafts deployed**

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15.5 M. Fast Interceptor Boat





General

- **Hull Material** : Fibre Reinforced Plastic (FRP)
- **Wheel House** : Fibre Reinforced Plastic (FRP)
- **Classification** : Det Norske Veritas Germanischer Lloyds (DNV-GL)

Main Particulars

- **Length Overall** : 15.56 m
- **Breadth** : 04.00 m
- **Draught** : 0.90 m
- **Displacement** : 14.50 Ton (Approx)
- **Speed Max** : 35 ± 1 Knot at trial displacement
- **Endurance** : Not less than 150 nautical miles at a cruising speed of 20 knots plus 25% reserve fuel

Capacities

- **Accommodation** : 4 Crew and upto 8 passengers
- **Fuel Oil** : 1200 Ltrs
- **Fresh Water** : 150 Ltrs

Performance

- **Speed** : 35± 1 Knots
- **Range** : 150 nm with 25% reserve

Propulsion System

- **Main Engine** : 2 x Cummins QSC8.3 500IDI BHP @2600rpm. Diesel Engine.
- **Gear Box** : 2 x ZF 286 A Reversible Gear Box
- **Propulsion** : 2 x Waterjet Kamewa FF310

Electrical Equipment

- **Networks** : 415 V, 3 Phase, 50 Hz / 230 V AC / 24 V DC
- **Generators** : 13 KVA 230 V AC 50 HZ Fischer Panda PANDA (12000)

Deck Equipment

- Bollards
- Cleats
- Towing hook
- Bow Roller
- Anchor windlass

Nautical, Surveillance and Communication Equipment

- Echo Sounder
- Magnetic Compass
- GPS
- VHF & HF
- HFVHF
- Walkie-Talkies
- Marine & Night vision Binoculars
- Search light
- AIS

Life Saving Appliances

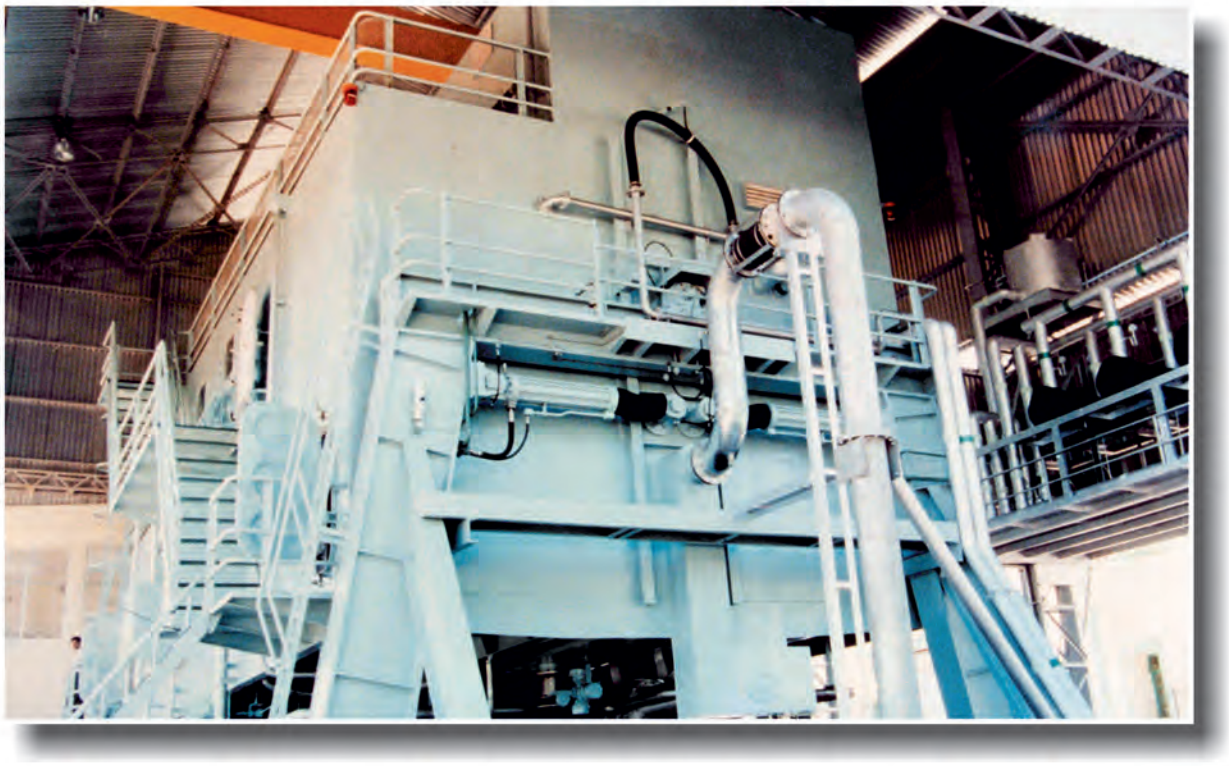
- Life Raft
- Life Jackets
- Life buoys, etc

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Damage Control Simulator (DCS)



The DCS is essentially a training system that simulates a realistic and stressful but controlled environment for crew training in ship damage control and repair in various damage scenarios. In real life operational service, the possibility of ship damage in both war and peace times is likely. To contain the damage and save the vessel, the crew needs to be able to respond to the threat with efficiency, expertise and confidence gained from training in similar situations. The realistic damage and crisis scenarios generated in the DCS Contribute invaluably in driving away fear among the trainees and in improving team building traits, thereby preparing them for unforeseen hardships and emergencies at sea.

GSL has designed and constructed 03 no's of Damage Control Simulator (DCS) for Indian Navy namely, INS 'AKSHAT' at INS Shivaji, Lonavala, INS 'AVINASH' at INS Venduruthy, Kochi and INS 'AVIJIT' at Vishwakarma. A fourth DCS for Indian Navy at Port Blair is under construction. One DCS was also constructed for Govt. of Myanmar at Myanmar.

Life cycle support, Upgrades and Logistic support can be provided by GSL for this product.

GOA SHIPYARD LIMITED

Ship Builders, Ship Repairers & Engineers

www.goashipyard.in

For further information, please contact:
Head of the Department
General Engineering Services
Telefax No.: +91-832-2512536

Damage Control Simulator (DCS)



General

- **Functions** : To train the naval personnel in ship damage control and repair in various damage scenarios. The training helps in removing psychological fear, developing leadership skills communication skills team building and exposure in handling causalities / injuries
- **Structural Material** : Steel
- **Classification** : Indian Register of Shipping (IRS)

Main Particulars

Three deck structure

19 compartments and five exercise areas

- **Length Overall** : 14.6 m
- **Width** : 6.7 m
- **Height** : 7.87 m
- **Weight** : 75 tons

Exercise Environment

- 75 tones of water flooding capacity
- 15 degree roll
- 20 degree list
- 1.6 m flooding level
- Total darkness
- Smoke generation
- Battle sounds
- Manning 6 instructors, 3 junior sailors and 24 trainees

Exercise Environment

- DCS has inbuilt Crash stop safety facility which stops the oscillations
- Brings the simulator to neutral position
- Drains water from the compartment within 90 seconds
- Switches on the lights
- Stops smoke ingress
- Switches on exhaust & fresh air supply blowers

Support System

- 22 kV substation
- Hydraulic System
- 500 kW Diesel Generator
- 600 /100 TPH Pumps
- HP Air Compressors
- 15 Tons Air Conditioning System
- Water Filtration Plant
- Sound Power Telephone System
- Internal Communication System
- Broadcasting System
- Auto Switching over DG and restoring power supply within 10 seconds incase of shore power failure

Civil Engineering Works

- DCS Shed
- Underground Sump of 250 T Capacity
- Overhead Tank of 150 T Capacity
- Pump Room
- DGLT Room
- RCC Foundation for the supports of two portal frames
- Trainee related infrastructure such as briefing areas, change rooms, bathrooms, etc.

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

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