MARINE ELECTRICAL TECHNOLOGY

REETA

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Chapter 1: About it

Marine Electricals provides integrated technical services in the areas of electrical automation, information and communication technology solutions and is a leading provider.

Marine Electricals provides integrated, multidisciplinary total solutions which lead to more efficient business processes and greater efficiency for customers as well as the customers they serve.

Marine Electricals offers solutions that help to create a sustainable society.

- **The Key Values**

Marine Electricals is very customer-driven. Marine Electricals provides customers with high-quality, total solutions through one

point. Customers can now focus more on their core activities.

Marine Electricals is committed to long-term relationships with customers and suppliers.

Marine Electricals is an Indian independent technical service provider.

Marine Electricals is a great employer that has motivated employees. This is evident in their professionalism and high quality work. Employees are encouraged to grow.

Marine Electricals places a great deal of importance on its responsibility to the environment, people's safety, and health.

- **Policy on Quality, Environment, Occupational Safety and Health**

Marine Electricals (I) Ltd. strives to be an industry leader by offering customized solutions, products and services that meet the

needs of customers. We also aim to continuously improve our quality, reliability, and services through an effective quality management system. This includes all regulatory, occupational, health, safety, and environment requirements.

We respond to ensure that there is a safe, clean, and healthy environment. This can be achieved by applying efficient techniques and safe work practices, and continually improving our Integrated Management System.

MEIL is committed

To provide framework for setting objectives for IMS

To continue to improve the manufacturing process and customer satisfaction.

Protect the environment and prevent pollution injury and ill-health.

Focus Materials management from initial disposal through final disposal (Life cycle prospective) is essential to preserve our environment.

To ensure that its legal and contractual compliance obligations are met in a proactive, continuous, and responsible manner.

To encourage workers to participate in decision-making and consultation.

Shipyards and shipowners are looking for reliable, competent partners who can provide full service and integrate innovative technology solutions.

Marine Electricals has more than 30 years of experience and is a well-respected establishment that specializes in power generation and distribution, automation (plate and bridge), navigation &

communication, electric propulsion solutions, fire protection systems, maritime LAN systems and lighting solutions.

We are based in Mumbai with a global network of agents and offices. Our innovative, state-of the-art products and system solutions meet all the requirements of ships of any size and type throughout their entire lifecycle. These include ocean-going passenger ships, bulk carriers, bulk carriers, tankers and container vessels, luxury yachts and tankers, as well as specialist offshore, environmental, and research vessels.

We have maintained our reputation as a trusted partner in the marine and shipbuilding industries by continually updating and improving our products and systems with the assistance of an experienced team of engineers and technicians. This helps us to

achieve our mission of providing superior equipment and customer satisfaction through prompt, efficient service.

Chapter 2: Communication

- **Introduction**

Marine Electricals provides a variety of communication and navigation products that meet the needs of today's shipping industry. We can provide solutions and products customized by top electronic manufacturers in Communication and Navigation. You can choose from a modular bridge design, made up of well-known brands, or a fully customized bridge system that is tailored to your needs.

We collaborate with shipyards and shipowners at the early stages of a project to supply the right electronics to equip the vessels to meet their specific requirements and maritime regulations. Our business is to supply, install, commission, and maintain electronic

equipment for the retrofit or new construction of various ocean-going vessels and naval vessels.

- **What marine communication systems are used in the maritime industry?**

The last century has seen a significant shift in radio telecommunications at sea. Radio brought about a dramatic change in marine communication at the sea after the days of flags and semaphores (which are still relevant in some cases).

Ships began to use radio to communicate with each other and the shore in the early years. In the first half of the 20th century, radio telegraphy using Morse codes was used for marine communication.

After studying the International Telecommunication Union's studies, IMO created a system that allowed ship-to ship or ship-to

shore communication to be made with some automation. A skilled radio officer was no longer required to keep a watch 24x7.

Using satellites and shore stations, onboard systems allowed for marine communication between ships and the shore. VHF radio was used for ship-to-ship communications. Digital Selective Calling (DSC), however, allows you to send or receive distress messages, safety or emergency calls, and routine priority messages digitally remotely. DSC controllers are now compatible with VHF radios as per SOLAS (Safety of Life at Sea).

Satellite services are not like terrestrial communication systems. Satellite services require the use of geo-stationary satellites to transmit and receive signals in areas where there is no coverage by shore stations. These services are provided by INMARSAT, a

commercial company, and COSPAS-SARSAT, a multi-national government-funded agency.

INMARSAT provides two-way communications but the Corpas Sarsat system is restricted to receiving signals from emergency positions and other places without facilities for two-way marine communications.

The Global Maritime Distress Safety System has divided the globe into four areas to meet international operational needs. These four geographic divisions are called A1, A2, and A3 respectively. Depending on the specific vessel's operation, different radio communication systems must be installed onboard ships.

A1 - It is approximately 20-30 nautical miles from the coast. There is at least one VHF Coast radio station that provides continuous DSC alerting. Equipment: A VHF, DSC, and a

NAVTEX receiver (a navigational and meteorological telex) are used.

A2 - Although it is supposed to cover 400 nautical mile off shore, in reality it can extend up to 100 miles offshore. However, this should not be considered as A1. Equipment: A DSC and radio telephone (MF range), plus equipment needed for A1 areas.

A3 - This area is beyond the A1 and A2 areas. The coverage is located within 70 degrees north and 70 degrees south latitudes and falls within the INMARSAT geostationary range of satellites, which provides continuous alerting. Equipment used: A high-frequency radio and/or INMARSAT. This system is capable of receiving MSI (Maritime Safety Information), as well as the remaining systems for A1 or A2 areas.

A4 - These areas are located outside of the sea areas of A1, A2 or A3. These are the Polar Regions North & South of 70 degrees of latitude. Equipment: This equipment includes HF radio service and those needed for other areas.

All oceans can be covered by HF maritime communication services. The IMO requires two coast stations for each ocean region. Almost all ships have a satellite terminal to enable Ship Security Alerts System, (SSAS), and long-range identification and tracking according to SOLAS.

Search and Rescue operations are performed by Maritime Rescue Coordination centers in case of distress. They also use most of these navigation tools to aid them. These gadgets, along with other important navigation tools as recommended by the IMO and enshrined within GMDSS, have made the sea safer.

Chapter 3: Navigation

- **Marine Navigation - Learning Your Directions**

Latitude & Longitude – A coordinate system that pinpoints exactly where you are located on Earth. It can be used on land as well as at sea. Latitude is measured north and south, while longitude is measured east and west.

True North - Also called geodetic North, this is the location of the geographical North Pole according the Earth's axis. The geographic North Pole is not to be confused by the magnetic North Pole. This pole shifts by several kilometres each year due to the moving sea ice. The South Pole is the same.

Knots are 1.15 mph (1.852 km/h) which is a measure for speed of boats and aircraft. This unit of measurement was first used in

17th-century England, when ships were measured using a simple device of coiled rope and evenly spaced knots.

The rope was attached to a piece of pie-shaped wood, which floated behind the ship. It was then let out for a time. The number of knots between the wood and ship was counted when the line was pulled back in.

Nautical mile - One minute of latitude is equivalent to one nautical mile. It is calculated using the Earth's circumference. One nautical mile is equal to 1.1508 statute (land-measured) miles.

- **Marine Navigation – ToolsMarine Navigation-Magnetic compass**

Magnetic Compass – A tried and true tool that every sailor should keep on hand. It doesn't need electricity to operate. Magnetic north is indicated by the magnetic compass. You can use the

needle to determine your direction. Your boat's direction is measured in degrees relative magnetic north.

Rules - A series of parallel rulers that determines the angle (degrees), between the destination and the starting point. These rulers are attached using swiveling arms so you can walk across a nautical chart while keeping the right angle.

Dividers – Used to measure distance on a chart, dividers can be used to divide two points on the chart to indicate one or more nautical miles.

GPS - Global Positioning System (GPS), devices receive signals from satellites in order to determine your location, plot your course and determine speed. These devices are becoming increasingly popular with boaters due to their simplicity. They can

be very basic or high-end, and include depth alarms, chart plotters, and other extras.

- **Navigating in the Marines**

Marine navigation - buoys

Buoy – An anchored buoy acts as a marker for watercraft. Port hand buoys, which are usually green, mark the left side or obstruction in the water. Port hand buoys, which are green and mark the left side of a passage or obstruction in the water, are marked with red. To avoid dangers and keep traffic moving, keep red buoys on your right and green buoys on your left. Buoys come in many sizes and shapes.

The Cardinal Marks are the north, south, east and west cardinal buoys that indicate which direction is safest to travel. They may be coloured to help identify the direction.

North- Painted in black on the top and yellow on the bottom

South-Painted yellow on the top and black on the bottom

East- Painted in black on the top and bottom, with yellow in the middle

West- Painted yellow at the top and bottom, with black in the middle

You can find complete information on each type of mark.

Lights - The lights used for marine navigation have specific patterns and flashes. Cardinal buoys are equipped with white lights that flash at a speed and pattern that matches the position of an analog clock. East buoys, for example, flash at a rate 3 times per 10 seconds. A yellow light flashes once per 4 seconds for certain types of buoys like anchorage buoys or cautionary buoys.

- **Marine navigation - Paper charts**

Paper Charts – A paper chart is the best form of charting on the water. It can be used to plot the course between points A and B, determine the depth of the water, navigate aids, and information about currents and tides.

Electronic Charts – The Electronic Navigational Chart (ENC), which uses computer software and databases for details when charting on the water, is based on a dynamic map that displays your exact location in real-time. Vector charts are the most complicated, as you can filter out layers.

- **Marine Navigation - Electronic Charts**

Information you might not need at all, such as the location of buoys or directions of current, depth of water, and so on. This navigational tool is available on a waterproof chartplotter, tablet or smartphone, as well as a laptop.

Van Isle Marina believes that everyone should have a safe and enjoyable time on the water, no matter how experienced or new they are. Our Dock Store offers a range of navigation equipment and tools that will help you make the right choice. You can also get a chart, tide book, or cruising guide to aid you in your aquatic adventures.

Chapter 4: Careers

Marine Electricals is a place where people strive to be better. Don't accept the definitions of 'goodness' that others give you. They are focused on the customer's greater good when they propose solutions and not their own interests.

Marine Electricals is the right place for you if you like this type of profile. It's a privilege to be part of what we call progress. Marine Electricals is a place where you can work on amazing projects that are talked about. These projects often have a significant impact on the way that companies and organizations work and society in general. For example, top-quality technical solutions to sustainable energy, safety and fluid traffic flows, or for building "green buildings and ships".

Marine Electricals is a leader in India's technical services. It's challenging. You are always learning. We learn from you. We would love to have you as our guest

- **Current Job Openings**

DGM / GM Marine Sales

An established Marine Electronics company seeks a Chief Engineer with outstanding commercial skills to join its Mumbai office.

- **Description of the Job**

The Account Manager will be responsible for sales in the region. He/she will analyze market potential and the opportunities for In-house and represented products.

The representative of the Company must be highly professional and a trusted advisor to customers in order to build good

relationships. Other responsibilities include:

Budget Owner (Sales/Expense) for Commercial Marine Sales for MELKDU Group of Companies In India and Overseas.

Plan the local budget, develop sales strategies and be accountable for achieving it.

Assume the role of Account Manager or Project Sponsor in your area of responsibility.

Support Sales team for meetings and building relationships in the industry.

Gather customer feedback and market intelligence to inform Management.

To identify future customer needs, analyze the market.

Enhance and maintain existing customer and partner relationships.

For public and commercial tender, research the market.

Support team and guide sales coordinators for proposal preparation, submission, and follow-up.

Competent attitude and skills to negotiate effectively

Stay current with industry rules and regulations, as well as products and services that are both in-house and represented.

Monitoring invoicing, collection, and recovery of customer overdue amounts

Expected travel between 50-60% each month.

Requirements

Looking for a Chief Engineer with at least 2 years of experience ashore, preferably in Business Development / Sales.

Excellent English language skills.

You are self-motivated and have the ability to achieve goals.

Age - About 40 years.

Proficiency in Microsoft Windows, Word Excel, Powerpoint,

Excel, and other Microsoft programs.

Salary commensurate with Industry standards

CVSE - Sales Engineer

Expertise in the sale of Marine equipment (Navigational,

Electricals & Automatization) and related services in India.

CVSE I - Service Engineers

Minimum 2 to 3 years of experience in the service of a wide

variety navigation, communication, and VSAT/TVRO system.

Design Engineer (Electricals)

Reporting to: Manager / Team Leader - Design

Qualification: BE/ Diploma Electricals

Experience: 2-8 years

No. No.

Location: Mumbai (2) & Nagpur (1)

- **Summary of the Job:**

We design, develop, and maintain electrical power/control systems according to specified specifications. Our focus is on safety, reliability, quality, and sustainability.

Learn and understand the specifications and requirements of your customers.

Design control panels. A plus is knowledge of switchboards.

Preparation of a general arrangement drawing, single-line diagram, schematic drawings, and a bill of materials for PCC, MCC or Starters.

Facilitating technical discussions and getting approval from customers for drawing data.

Collaboration with vendors to select components

Coordinate with Quality Control, Production and Purchase departments.

Customers are provided with drawings and documents promptly.

- **Candidates must be able to:**

Schematics for power and control

Selection of switchgear and electrical components

Calculation of busbar size and calculation of cable size

Electrical panels can be mechanically assembled

- **Soft skills**

Strong communication skills in writing and verbal

Great problem solving skills and time management skills