

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 12th May 1935 When handed in at Local Office 19 Port of Hamburg
 Date, First Survey 22-12-34 Last Survey 10th April 1935
 Reg. Book. Hamburg (Number of Vests 15)
 on the "Genota" Tons { Gross 7987
 Net 4754
 Built at Hamburg By whom built Deutsche Werft A.G. Yard No. 156 When built 1935
 Owners Petroleum Maats. "de Corona" Port belonging to The Hague
 Electric Light Installation fitted by Allgem. Elektrizitäts-Gesellschaft Contract No. 1935
 the Vessel fitted for carrying Petroleum in bulk yes

System of Distribution Two wire, two conductor system.
 Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 volts.
 Direct or Alternating Current, Lighting ✓ Power ✓
 Alternating current system, state frequency of periods per second ✓
 Is the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off yes ✓
 Generators, do they comply with the requirements regarding temperature rise yes ✓, are they compound wound yes ✓
 Are they over compounded 5 per cent. yes ✓, if not compound wound state distance between each generator ✓
 Are there more than one generator is fitted are they arranged to run in parallel no ✓, is an adjustable regulating resistance fitted in
 series with each shunt field yes ✓ Have certificates of test results for machines under 100 kw. been submitted and
 approved yes attached ✓ Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing ✓
 Are all terminals accessible, clearly marked, and furnished with sockets yes ✓, are they so spaced or shielded that they cannot be accidentally earthed,
 or short circuited, or touched yes ✓ Are the lubricating arrangements of the generators as per Rule ✓
 Position of Generators In main engine room; starb. side. ✓, is the ventilation
 arrangement of the generators satisfactory yes ✓ are they clear of all inflammable material yes ✓ if situated near unprotected
 work or other combustible material, state distance of same horizontally from or vertically above the generators ✓ and ✓
 Are the generators protected from mechanical injury and damage from water, steam or oil yes ✓, are their axes of rotation fore and aft yes ✓
 Nothing, are the bedplates and frames of the generating plant efficiently earthed yes ✓ are the prime movers and their respective generators
 in metallic contact yes ✓ Main Switch Boards, where placed In main engine room, starb. side. ✓
 If the generators and main switchboard are not placed in the same compartment, is each generator provided with
 a cable on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard placed in the same
compartment. ✓
 Main switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes yes ✓, are they protected from mechanical
 injury and damage from water, steam or oil yes ✓, if situated near unprotected woodwork or other combustible material, state distance of same
 horizontally from or vertically above the switchboards ✓ and ✓, are they constructed wholly of durable, non-ignitable non-absorbent
 materials yes ✓, is all insulation of high dielectric strength and of permanently high insulation resistance yes ✓
 of an approved type yes ✓, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micamite or other
 hygroscopic insulating material, and the slab similarly insulated from its framework ✓, is the non-hygroscopic insulating material of an approved
 type ✓, and is the frame effectively earthed yes ✓. Are the fittings as per Rule regarding:— spacing or shielding of live parts
yes ✓, accessibility of all parts yes ✓, absence of fuses on back of board yes ✓, temperature rise of
 bus bars yes ✓, individual fuses to voltmeter, pilot or earth lamp yes ✓, are moving parts of switches alive in the
 open position no ✓ are all screws and nuts securing connections effectively locked yes ✓ are any fuses fitted on the live side of
 the switchboards no ✓ Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches
each generator a double pole linked switch and a fuse on each pole:— for each outgoing
circuit a double pole change over switch and a fuse on each pole. ✓
 Are turbine driven generators fitted with emergency trip switch as per rule ✓ Are cupboards or compartments containing switchboards composed of
 fire resisting material or lined with approved material yes ✓ Instruments on main switchboard 2 ✓ ammeters 2 ✓
 Are there any synchronising devices for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection
yes ✓ Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system
Earth testing lamps on each pole ✓ Switches, Circuit Breakers and Fusible Cut-outs,
 do they comply with the requirements of the Rules yes ✓ are the fusible cutouts of an approved type yes ✓ have the reversed

current protection devices been tested under working conditions yes **Joint Boxes, Section and Distribution Boards**, is the construction, protection, insulation, material, and position of these as per rule yes

Cables: Single, twin, concentric, or multicore multicore are the cables insulated and protected as per Tables IV, V, X or XI of the Rules yes

If the cables are insulated otherwise than as per Rule, are they of an approved type yes **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load about 3 volts **Cable Sockets**, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets yes **Paper Insulated and Varnished Cambric Insulated Cables**

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound no paper insulation **Cable Runs**, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage yes Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered

Support and Protection of Cables, state how the cables are supported and protected cables on deck and underneath bridge in hose room in galvanized steel tubes. Cables in Engine and Boiler room in galv. steel tube, latter insulated with asbestos. If cables are run in wood casings, are the casings and caps secured by screws yes, are the cap screws of brass yes, are the cables run in separate grooves yes If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII yes

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements yes

Joints in Cables, state if any, and how made, insulated, and protected in watertight strong joint boxes

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands yes **Bushes in Beams and Non-watertight Partitions**, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed yes state the material of which the bushes are made lead

Earthing Connections, state what earthing connections are fitted and their respective sectional areas distribution boards in bridge deck, 50 sq mm. are their connections made as per Rule yes

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule yes **Emergency Supply**, state position and method of control of the emergency supply and how the generator is driven none

Navigation Lamps, are these separately wired yes, controlled by separate switch and separate fuses yes, are the fuses double pole yes, are the switches and fuses grouped in a position accessible only to the officers on watch yes has each navigation lamp an automatic indicator as per Rule yes **Secondary Batteries**, are they constructed and fitted as per Rule yes

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight yes are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected yes

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected yes, lower bridge deck, gas tight lamps, strongly protected, how are the cables led led in gas tight tubing.

where are the controlling switches situated Foreship in upper bridge deck, otherwise from Eng. Room.

are all fittings suitably ventilated yes, are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials yes

Heating and Cooking Appliances, are they constructed and fitted as per Rule none, are air heaters constructed and fitted as per Rule yes

Searchlight Lamps, No. of Suez Canal Lamp, whether fixed or portable portable, are their fittings as per Rule yes

Arc Lamps, other than searchlight lamps, No. of 2, are their live parts insulated from the frame or case yes, are their fittings as per Rule yes

Motors, are their working parts readily accessible yes, are the coils self-contained and readily removable for replacement yes, are the brushes, brush holders, terminals and lubricating arrangements as per Rule yes, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material yes, are they protected from mechanical injury and damage from water, steam or oil yes are their axes of rotation fore and aft yes, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type yes if not of this type, state distance of the combustible material horizontally or vertically above the motors yes and yes

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing yes **Control Gear and Resistances**, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule yes **Lightning Conductors**, where lightning conductors are required, are these fitted as per Rule yes **Ships carrying Oil having a Flash Point less than 150° F.** Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings yes are all fuses of the filled cartridge type yes are they of an approved type yes

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office yes

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule yes

PARTICULARS OF GENERATING PLANT.

| DESCRIPTION OF GENERATOR. | No. of | RATED AT | | | | DRIVEN BY | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. | |
|---------------------------|--------|------------|--------|-------|----------------|------------------|--|----------------------|
| | | Kilowatts. | Volts. | Amps. | Revs. per Min. | | Fuel Used. | Flash Point of Fuel. |
| MAIN | 1 | 16 | 115 | 139 | 390 | Steam Engine | | |
| AUXILIARY | 1 | 16 | 115 | 139 | 390 | Heavy oil Engine | Diesel Oil | above 150° F. |
| EMERGENCY | | | | | | | | |
| ROTARY TRANSFORMER | | | | | | | | |

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

| DESCRIPTION. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | Approximate Length. (Lead and Return.) | Insulated with | HOW PROTECTED. |
|----------------------------------|---------------|-------------------------------------|------------------------|-----------|------------------------|-------|--|----------------|---------------------------|
| | No. per Pole. | Total Nominal Area per Pole Sq. mm. | No. | Diameter. | In Circuit. | Rule. | | | |
| MAIN GENERATOR Steam | 1 | 95 | 19 | 2.52 | 139 | 152 | 28 | Rubber | Lead covered and armoured |
| EQUALISER CONNECTIONS | | | | | | | | | |
| AUXILIARY GENERATOR Diesel | 1 | 95 | 19 | 2.52 | 139 | 152 | 18 | " | " |
| Rotary Transformer | 1 | 95 | 19 | 2.52 | 139 | 152 | 56 | " | " |
| ENGINE ROOM Sub. division boards | | | | | | | | | |
| BOILER ROOM O.P.R.S. | 1 | 2.5 | 7 | 0.75 | 36 | 14 | 8+2=3 9+3=15 | " | " |
| AUXILIARY SWITCHBOARDS | | | | | | | | | |
| I. Poopdeck | 1 | 6 | 7 | 1.1 | 15 | 27 | 56 | " | " |
| II. Bridge deck | 1 | 25 | 7 | 2.15 | 30 | 64 | 170 | " | " |
| III+IV Eng+Boiler R. | 1 | 6 | 7 | 1.1 | 7.5 | 27 | M=16; N=50 | " | " |
| Accom. Aft. A+C | 1 | 2.5 | 7 | 0.75 | 3.6 | 14 | A=30; B=40 | " | " |
| " " B+D | 1 | 2.5 | 7 | 0.75 | 3.6 | 14 | B=30; D=40 | " | " |
| ACCOMMODATION aft. E | 1 | 6.0 | 7 | 1.1 | 7.5 | 27 | 56 | " | " |
| " Bridge R. E | 1 | 2.5 | 7 | 0.75 | 3.6 | 14 | H=20; I=20; J=4 | " | " |
| " Forecastle W. | 1 | 6.0 | 7 | 1.1 | 7.5 | 27 | 120 | " | " |
| " " K | 1 | 16 | 7 | 1.7 | 3.6 | 50 | L=180; M=4 | " | " |
| WIRELESS | 1 | 16 | 7 | 1.7 | 43 | 50 | 72 | " | " |
| SEARCHLIGHT Suez | 1 | 35 | 19 | 1.5 | 80 | 80 | 180 | " | " |
| MASTHEAD LIGHT | 1 | 1.5 | 7 | 0.5 | 0.2 | 8 | Form=100 RFR=110 | " | " |
| SIDE LIGHTS | 1 | 1.5 | 7 | 0.5 | 0.2 | 8 | 25 | " | " |
| COMPASS LIGHTS | 1 | 1.5 | 7 | 0.5 | 0.2 | 8 | 12 | " | " |
| POOP LIGHTS | 1 | 1.5 | 7 | 0.5 | 0.2 | 8 | 220 | " | " |
| DECK LIGHTS | 1 | 1.5 | 7 | 0.5 | 2.0 | 8 | 70 | " | " |
| DECK LAMP Aft. | 1 | 1.5 | 7 | 0.5 | 2.0 | 8 | 75 | " | " |
| HEATERS | | | | | | | | | |

MOTOR CONDUCTORS.

| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | Approximate Length. (Lead and Return.) | Insulated with | HOW PROTECTED. |
|-------------------------|----------------|---------------|-------------------------------------|------------------------|-----------|------------------------|-------|--|----------------|----------------------------|
| | | No. Per Pole. | Total Nominal Area per Pole Sq. mm. | No. | Diameter. | In Circuit. | Rule. | | | |
| BALLAST PUMP | | | | | | | | | | |
| MAIN BILGE LINE PUMPS | | | | | | | | | | |
| GENERAL SERVICE PUMP | | | | | | | | | | |
| EMERGENCY BILGE PUMP | | | | | | | | | | |
| SANITARY PUMP | | | | | | | | | | |
| CIRC. SEA WATER PUMPS | | | | | | | | | | |
| CIRC. FRESH WATER PUMPS | | | | | | | | | | |
| AIR COMPRESSOR | | | | | | | | | | |
| FRESH WATER PUMP | 1 | 1 | 35.0 | 19 | 1.5 | 80 | 85 | 36 | Rubber | Lead covered and armoured. |
| ENGINE TURNING GEAR | | | | | | | | | | |
| ENGINE REVERSING GEAR | | | | | | | | | | |
| LUBRICATING OIL PUMPS | | | | | | | | | | |
| OIL FUEL TRANSFER PUMP | 1 | 1 | 4.0 | 7 | 0.85 | 17.6 | 20 | 220 | " | " |
| WINDLASS | | | | | | | | | | |
| WINCHES, FORWARD | | | | | | | | | | |
| WINCHES, AFT | | | | | | | | | | |
| STEERING GEAR | | | | | | | | | | |
| (a) MOTOR GENERATOR | | | | | | | | | | |
| (b) MAIN MOTOR | | | | | | | | | | |
| WORKSHOP MOTOR | | | | | | | | | | |
| VENTILATING FANS | 16 | 1 | 1.5 | 7 | 0.5 | 1.0 | 8 | 15 | " | " |
| Lathe | 1 | 1 | 4.0 | 7 | 0.5 | 12.7 | 22 | 14 | " | " |
| Drilling Machine | 1 | 1 | 4.0 | 7 | 0.5 | 17.5 | 22 | 14 | " | " |
| Grinding | 1 | 1 | 6.0 | 7 | 1.1 | 22.0 | 22 | 20 | " | " |
| Oil Separator | 1 | 1 | 4.0 | 7 | 0.5 | 25.6 | 27 | 25 | " | " |

