

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

14 JAN 1937

Date of writing Report 20/12/1936 When handed in at Local Office 1036 Port of Oslo
 No. in Survey held at Fredrikstad Date, First Survey 20/11 - Last Survey 23/12/1936
 Reg. Book. on the steel screw steamer "HERMA GORTON" (Number of Visits 8)
 Tons { Gross 1827
 Net 930
 Built at Fredrikstad By whom built Fredrikstad Mek. Verkt. Yard No. 281 When built 1936
 Owners Rederietilsynet Port belonging to Hälsingborg
 Electric Light Installation fitted by Fredrikstad Mek. Verkt. Contract No. When fitted 1936
 Is the Vessel fitted for carrying Petroleum in bulk no

System of Distribution Direct current, constant pressure, two wire system.
 Pressure of supply for Lighting 115 volts, Heating — volts, Power (vent. fans) 115 volts.
 Direct or Alternating Current, Lighting direct ✓ Power —
 If alternating current system, state frequency of periods per second ✓
 Has 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 rating yes ✓, are they compound wound yes ✓
 are they over compounded 5 per cent. yes ✓, if not compound wound state distance between each generator ✓
 Where more than one generator is fitted are they arranged to run in parallel no, change over system an adjustable regulating resistance fitted in series with each shunt field ✓
 Are all terminals accessible, clearly marked, and furnished with sockets yes ✓, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched yes ✓
 Are the lubricating arrangements of the generators as per Rule yes ✓
 Position of Generators Engine room Starboard ✓
 is the ventilation in way of the generators satisfactory yes ✓, are they clear of all inflammable material yes ✓
 if situated near unprotected woodwork 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 ✓
 Earthing, 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 Engine room Starboard, attached to E.R. bulkhead. ✓
 If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard ✓
 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 ✓, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework ✓
 and is the frame effectively earthed ✓ Are the fittings as per Rule regarding: — spacing or shielding of live parts yes ✓
yes ✓ accessibility of all parts yes ✓, absence of fuses on back of board yes ✓, proportion of omnibus bars yes ✓, individual fuses to voltmeter, pilot or earth lamp yes ✓, connections of switches yes ✓
 Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 2-pole switches for each generator and all outgoing circuits ✓
 Instruments on main switchboard 2 ✓ ammeters 2 ✓ voltmeters ✓ synchronising device for paralleling purposes.
 Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Ohm meter with change-over switch for + - , and directly indicating for each generator ✓
 Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules 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 twin are the cables insulated and protected as per Tables IV or V of the Rules Yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4.6 volts

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound Yes

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

Support and Protection of Cables, state how the cables are supported and protected Cables are run in pipe fittings fore & aft, and in places secured by clips spaced as per Table VIII

If cables are run in wood casings, are the casings and caps secured by screws ✓, are the cap screws of brass ✓, are the cables run in separate grooves ✓. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII Yes

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements Yes

Joints in Cables, state if any, and how made, insulated, and protected W.T. metal boxes with porcelain jointing insulators

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes, W.T. tubes

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 All lead cables are earthed, forward, amidships & aft, & E.R., 0.016 sq. inch sec. area.
are their connections made as per Rule

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 ✓

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 ✓

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, cables are run in iron casings, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected No, how are the cables led ✓, where are the controlling switches situated ✓

Searchlight Lamps, No. of ✓, whether fixed or portable ✓, are their fittings as per Rule ✓

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

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 ✓, if not of this type, state distance of the combustible material horizontally or vertically above the motors ✓ and ✓

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 ✓

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 ✓

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office ✓

| DESCRIPTION OF GENERATOR. | No. of | RATED AT | | | | DRIVEN BY | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. | |
|--|------------|------------|------------|-----------|---------------|---------------------------|--|----------------------|
| | | Kilowatts. | Volts. | Ampères. | Rev. per Min. | | Fuel Used. | Flash Point of Fuel. |
| MAIN ... | <u>one</u> | <u>8</u> | <u>115</u> | <u>70</u> | <u>500</u> | <u>Steam engine</u> | <u>-</u> | <u>-</u> |
| AUXILIARY ... | <u>one</u> | <u>4</u> | <u>115</u> | <u>36</u> | <u>1050</u> | <u>Lighter oil engine</u> | | |
| EMERGENCY ... | | | | | | | | |
| ROTARY TRANSFORMER <u>for wireless</u> | | <u>0.5</u> | <u>115</u> | <u>4</u> | <u>1500</u> | | | |

| DESCRIPTION. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
|--|---------------|--|------------------------|--------------|---------------------------------|---------------|--|----------------|-----------------------|
| | No. per Pole. | Total Effective Area per Pole Sq. Ins. | No. | Diameter. | In Circuit. | Rule. | | | |
| MAIN GENERATOR ... | <u>1</u> | <u>0.0548</u> | <u>15</u> | <u>0.068</u> | <u>70</u> | <u>104.78</u> | <u>45</u> | <u>paper</u> | <u>iron armouring</u> |
| EQUALISER CONNECTIONS ... | | | | | | | | | |
| AUXILIARY GENERATOR ... | <u>"</u> | <u>0.025</u> | <u>7</u> | <u>0.072</u> | <u>36</u> | <u>46.7</u> | <u>50</u> | <u>rubber</u> | <u>"</u> |
| EMERGENCY GENERATOR ... | | | | | | | | | |
| ROTARY TRANSFORMER MOTOR GENERATOR ... | | | | | | | | | |
| ENGINE ROOM ... | <u>"</u> | <u>0.00234</u> | <u>1</u> | <u>0.06</u> | <u>1.5</u> | <u>7.8</u> | <u>120</u> | <u>rubber</u> | <u>"</u> |
| BOILER ROOM ... | <u>"</u> | <u>0.00234</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>150</u> | <u>"</u> | <u>"</u> |
| AUXILIARY SWITCHBOARDS ... | | | | | | | | | |
| Box aftermast | <u>"</u> | <u>0.0093</u> | <u>7</u> | <u>0.04</u> | <u>21</u> | <u>31.29</u> | <u>250</u> | <u>"</u> | <u>"</u> |
| " fore mast | <u>"</u> | <u>0.0156</u> | <u>7</u> | <u>0.053</u> | <u>31</u> | <u>57.38</u> | <u>250</u> | <u>"</u> | <u>"</u> |
| Refrigerating plant | <u>"</u> | <u>0.0039</u> | <u>7</u> | <u>0.027</u> | <u>6.5</u> | <u>13.15</u> | <u>130</u> | <u>"</u> | <u>"</u> |
| ACCOMMODATION OFFICERS | <u>"</u> | <u>0.0249</u> | <u>7</u> | <u>0.072</u> | <u>24</u> | <u>46.44</u> | <u>160</u> | <u>"</u> | <u>"</u> |
| CREW | <u>"</u> | <u>0.00623</u> | <u>7</u> | <u>0.033</u> | <u>12</u> | <u>18.22</u> | <u>270</u> | <u>"</u> | <u>"</u> |
| WIRELESS | <u>"</u> | <u>0.00623</u> | <u>7</u> | <u>0.033</u> | <u>2.6</u> | <u>18.22</u> | <u>135</u> | <u>"</u> | <u>"</u> |
| SEARCHLIGHT | <u>"</u> | <u>0.00234</u> | <u>1</u> | <u>0.06</u> | <u>0.3</u> | <u>7.8</u> | <u>360</u> | <u>"</u> | <u>"</u> |
| MASTHEAD LIGHT | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>0.3</u> | <u>"</u> | <u>75</u> | <u>"</u> | <u>"</u> |
| SIDE LIGHTS | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>0.3</u> | <u>"</u> | <u>20</u> | <u>"</u> | <u>"</u> |
| COMPASS LIGHTS | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>0.2</u> | <u>"</u> | <u>410</u> | <u>"</u> | <u>"</u> |
| POOP LIGHTS | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>2.6</u> | <u>"</u> | <u>70</u> | <u>"</u> | <u>rubber</u> |
| CARGO LIGHTS | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> |
| ARC LAMPS | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> |
| HEATERS | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> |

| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
|-------------------------|----------------|---------------|--|------------------------|-------------|---------------------------------|------------|--|----------------|-----------------------|
| | | No. Per Pole. | Total Effective Area per Pole Sq. Ins. | 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 | | | | | | | | | | |
| ENGINE TURNING GEAR | | | | | | | | | | |
| ENGINE REVERSING GEAR | | | | | | | | | | |
| LUBRICATING OIL PUMPS | | | | | | | | | | |
| OIL FUEL TRANSFER PUMP | | | | | | | | | | |
| WINDLASS | | | | | | | | | | |
| WINCHES, FORWARD | | | | | | | | | | |
| WINCHES, AFT | | | | | | | | | | |
| STEERING GEAR— | | | | | | | | | | |
| (a) MOTOR GENERATOR | | | | | | | | | | |
| (b) MAIN MOTOR | | | | | | | | | | |
| WORKSHOP MOTOR | | | | | | | | | | |
| VENTILATING FANS | <u>one</u> | <u>one</u> | <u>0.0023</u> | <u>1</u> | <u>0.06</u> | <u>2.5</u> | <u>7.8</u> | <u>30</u> | <u>rubber</u> | <u>iron armouring</u> |
| | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>30</u> | <u>"</u> | <u>"</u> |
| | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>320</u> | <u>"</u> | <u>"</u> |
| | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>290</u> | <u>"</u> | <u>"</u> |
| | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>30</u> | <u>"</u> | <u>"</u> |
| | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>"</u> | <u>30</u> | <u>"</u> | <u>"</u> |
| 3 accommodation fans | | | <u>3 x "</u> | <u>"</u> | <u>"</u> | <u>3 x 3.3</u> | <u>"</u> | <u>3 x 60</u> | <u>"</u> | <u>"</u> |

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All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

f. Orshuf

Electrical Engineers.

Date *4th January 1937*

COMPASSES.

Distance between electric generators or motors and standard compass *20 feet*

Distance between electric generators or motors and steering compass *18 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *0.3* Ampères *2* feet from standard compass *4* feet from steering compass.

A cable carrying *0.4* Ampères *10* feet from standard compass *10* feet from steering compass.

A cable carrying *ab. 4* Ampères *16* feet from standard compass *15* feet from steering compass.

*Electrical lamps
in binnacle*

Have the compasses been adjusted with and without the electric installation at work at full power *Yes*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted *Yes*

The maximum deviation due to electric currents was found to be *nil* degrees on *✓* course in the case of the standard compass, and *nil* degrees on *✓* course in the case of the steering compass.

pr. *%* FREDRIKSSTAD MEK. VERKSTED

Wreel

Builder's Signature.

Date *9.1.1937*

Is this installation a duplicate of a previous case *✓* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The electric installation on this vessel has been examined during the fitting up of the generators, & during the fitting of cables and switch board. - The materials employed appear to be the best & the workmanship is good. - The installation has been carried out in accordance with the approved plans & the Secretary's letters in connection therewith. The installation was tested as required by the Rules, Section 17 and found to be satisfactory.

It is recommended that this installation be classed in the Society's Register Book.

Noted

Shun

28.1.37

Total Capacity of Generators *12* Kilowatts.

The amount of Fee ... *£ 238.80.* When applied for, *24/12/36*

Travelling Expenses (if any) £

When received,

21.1.1937

Runde
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 29 JAN 1937

Assigned

See Vol. J.E. 4857



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Lloyd's Register
Foundation