

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 26 AUG 1930
Received at London Office

Date of writing Report 15.8.1930 When handed in at Local Office 25.8.1930 Port of Newcastle-on-Tyne
 No. in Survey held at Newcastle Date, First Survey 9 July Last Survey 12 Aug 1930
 Reg. Book. 7555A on the M. V. "KIM." Tons { Gross 6074
 Net 3575
 Built at Walker Shipyard By whom built Sir W. G. Armstrong Whitworth and No. 1062 When built 1930
 Owners Sveene, Starlung Port belonging to
 Electric Light Installation fitted by Sir W. G. Armstrong Whitworth Contract No. 1062 When fitted 1930
 Is the Vessel fitted for carrying Petroleum in bulk Yes.

System of Distribution Double Wire
Pressure of supply for Lighting 110 volts, **Heating** 110 volts, **Power** 110 volts.
Direct or Alternating Current, Lighting Direct Current **Power** Direct Current
 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 yes., is an adjustable regulating resistance fitted in series with each shunt field yes.
 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 Pont side of Engine Room.
 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 Pont side of Engine Room
 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 yes.
 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., 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 D.P. Circuit Breakers with R.O.L. + reverse current attachments. S.P. Equalizer SW for each main Gen? + D.P. Switches + D.P. fuses for Aux? Gen? + each outgoing circuit
Instruments on main switchboard Three ammeters Three 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 Earth leakage Detector
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 ✓

Cables: Single, twin, concentric, or multicore *Single 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 *3.8 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, uplakes 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 *Lead covered in accommodation*
Lead covered & armed in Machinery spaces L.C. room along gangways

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, 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 *None made*.

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 *yes*. 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 *yes*.

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 *Gaslight fittings in pump room in steel gaslight tubing*. how are the cables led *in Bridge space*.

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

Are Lamps, other than searchlight lamps, No. of *yes*, 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*.

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*. If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *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 | 2 | 30 | 115 | 260 | 875 | Diesel Engine | Diesel Oil above 150° F. | |
| AUXILIARY | 1 | 10 | 110 | 91 | 380 | Steam | | |
| EMERGENCY | | | | | | | | |
| ROTARY TRANSFORMER | | | | | | | | |

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

| DESCRIPTION. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | 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 | 1 | .4000 | 61 | .093 | 260 | 288 | 180 | YIR. | Lead. C. & Arm. |
| EQUALISER CONNECTIONS | 1 | .2000 | 37 | .083 | - | - | 50 | " | " " " |
| AUXILIARY GENERATOR | 1 | .0750 | 19 | .072 | 91 | 97 | 40 | " | " " " |
| EMERGENCY GENERATOR | | | | | | | | | |
| ROTARY TRANSFORMER MOTOR | | | | | | | | | |
| ENGINE ROOM DIS. BOX | 1 | .0100 | 7 | .044 | 28.44 | 31 | 30 | " | " " " |
| BOLTER ROOM | | | | | | | | | |
| AUXILIARY SWITCHBOARDS | | | | | | | | | |
| MIDSHIP ACCOMMODATION SECT. BOX | 1 | .0600 | 19 | .064 | 36.46 | 83 | 540 | " | " " " |
| WHEEL HOES DIS. BOX | 1 | .0070 | 4 | .036 | 5.41 | 24 | 600 | " | " " " |
| OFFICERS ACC. " " | 1 | .0030 | 3 | .036 | 10.45 | 12 | 40 | " | Lead Covered. |
| BRIDGES P. " " | 1 | .0080 | 3 | .036 | 7.81 | 12 | 15 | " | " " " |
| AFT ACC. " " | 1 | .0100 | 7 | .044 | 26.41 | 31 | 140 | " | L.C. & Arm. |
| WIRELESS | 1 | .0400 | 19 | .052 | 26 | 64 | 620 | " | " " " |
| SEARCHLIGHT | | | | | | | | | |
| MASTHEAD LIGHT | 1 | .0020 | 3 | .029 | 36.36 | 78.78 | 260 300 | " | L.C. & Arm. Lead. |
| SIDE LIGHTS | 1 | .0020 | 3 | .029 | 36.36 | 78.78 | 70 70 | " | " " " |
| COMPASS LIGHTS | 1 | .0020 | 3 | .029 | 13 | 7.8 | 20 | " | Lead Covered. |
| STERN LIGHTS | 1 | .0020 | 3 | .029 | 36 | 7.8 | 600 | " | L.C. & Arm. Lead. |
| CARGO LIGHTS | 1 | .0020 | 3 | .029 | 1.63 | 7.8 | 80 | " | " " " |
| HEATERS | 1 | .0070 | 7 | .088 | 18.18 | 24 | 100 | " | Lead Covered. |
| HEATERS | 1 | .0020 | 3 | .029 | 6.8 | 7.8 | 80 | " | L.C. & Arm. Lead. |

MOTOR CONDUCTORS.

| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | 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. | | | |
| RAFRIG MACH. PUMP | 1 | 1 | .0225 | 4 | .044 | 42 | 46 | 200 | YIR | Lead. C. & Arm. |
| MAIN BILGE LINE PUMPS | 1 | 1 | .0400 | 19 | .052 | 59 | 64 | 200 | " | " " " |
| GENERAL SERVICE PUMP | 1 | 1 | .0400 | 19 | .052 | 59 | 64 | 200 | " | " " " |
| OIL PUMP PURIFIER | 1 | 1 | .0045 | 7 | .029 | 18 | 18.2 | 20 | " | " " " |
| LUB. OIL PURIFIER | 1 | 1 | .0045 | 7 | .029 | 18 | 18.2 | 20 | " | " " " |
| CIRC. SEA WATER PUMPS | | | | | | | | | | |
| CIRC. FRESH WATER PUMPS | | | | | | | | | | |
| AIR COMPRESSOR | 1 | 1 | .2500 | 37 | .093 | 213 | 214 | 160 | " | " " " |
| AIR BLOWER | 1 | 1 | .0045 | 7 | .029 | 16 | 18.2 | 140 | " | " " " |
| FRESH WATER PUMP | 1 | 1 | .0225 | 4 | .044 | 42 | 46 | 80 | " | " " " |
| ENGINE TURNING GEAR | 1 | 1 | .0030 | 3 | .036 | 5 | 12 | 80 | " | " " " |
| ENGINE REVERSING GEAR | 1 | 1 | .0100 | 7 | .044 | 26.5 | 31 | 60 | " | " " " |
| PORTABLE EMERGENCY WHEEL LUBRICATOR | 1 | 1 | .0100 | 7 | .044 | 26.5 | 31 | 180 | " | " " " |
| OIL FUEL TRANSFER PUMP | 1 | 1 | .0100 | 7 | .044 | 26.5 | 31 | 180 | " | " " " |
| WINDLASS | | | | | | | | | | |
| WINCHES, FORWARD | | | | | | | | | | |
| WINCHES, AFT | | | | | | | | | | |
| STEERING GEAR | | | | | | | | | | |
| (a) MOTOR GENERATOR | | | | | | | | | | |
| (b) MAIN MOTOR | 1 | 1 | .0600 | 19 | .064 | 83 | 83 | 260 | " | " " " |
| WORKSHOP MOTOR | 1 | 1 | .0145 | 7 | .052 | 31 | 37 | 40 | " | " " " |
| VENTILATING FANS | | | | | | | | | | |
| ENG. R. AUX. P. SECT. BOX | 1 | 1 | .0400 | 19 | .052 | 52 | 64 | 30 | " | " " " |
| " " " S. " " | 1 | 1 | .0750 | 19 | .072 | 89 | 97 | 180 | " | " " " |

