

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 27 NOV 1934

28 NOV 1934

Date of writing Report 19 When handed in at Local Office 19 Port of **HULL**

No. in Survey held at **Hull** Date, First Survey **4/11/34** Last Survey **22/11/1934**  
Reg. Book. on the **Steel Sc K. "Pentland Firth"** (Number of Visits.....)

Built at **Severley** By whom built **Brook, Welton & Gemmell Ltd.** Yard No. **577** When built **1934-11.**  
Tons { Gross **484.92**  
Net **189.08.**

Owners **Firth Steam Trawling Co. Ltd** Port belonging to **Hull**

Electric Light Installation fitted by **Humber Shipwright Co. Ltd.** Contract No. When fitted **1934.**

Is the Vessel fitted for carrying Petroleum in bulk **No.**

### System of Distribution

**Two wire.**

Pressure of supply for Lighting **100** volts. Heating **✓** volts, Power **✓** 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.**, is 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 **Starboard 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 **Beside generators in 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 micaite 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**

**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. switches for**

**Generators; outgoing circuits controlled by S.P. throwover switches**

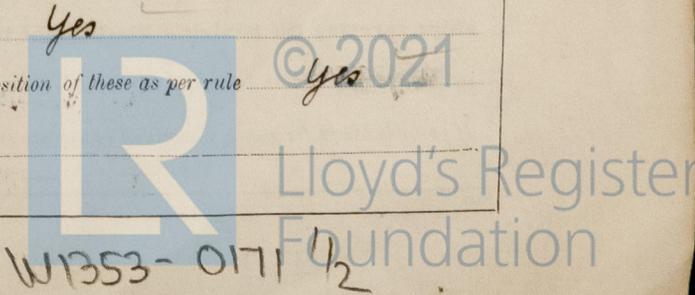
**and protected by fuses on each pole.**

Instruments on main switchboard **2** ammeters **1** 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 lamps.**

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**



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Cables: Single, twin, concentric, or multicore twinn 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 1 Volt.

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 Armoured cables with g. l. clips.

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 None.

Joints in Cables, state if any, and how made, insulated, and protected no joints.

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 Through earth lamps.

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 No (None).

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 None.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected None.

where are the controlling switches situated Yes.

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

Arc 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 and 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. | Rev. per Min. |               | Fuel Used.                                     | Flash Point of Fuel. |
| MAIN                      | 2      | 45 each    | 100    | 45    | 350.          | Steam Engines |  |                      |
| AUXILIARY                 |        |            |        |       |               |               |  |                      |
| EMERGENCY                 |        |            |        |       |               |               |  |                      |
| ROTARY TRANSFORMER        |        |            |        |       |               |               |  |                      |

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

| 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                         | 1             | 0.06                                   | 19                     | 0.064     | 82                             | 83    | 20ft                                       | V.I.R.         | L.C. Armoured                  |
| EQUALISER CONNECTIONS                  | 1             |  |                        |           |                                |       |  |                |                                |
| AUXILIARY GENERATOR                    |               |  |                        |           |                                |       |  |                |                                |
| EMERGENCY GENERATOR                    |               |  |                        |           |                                |       |  |                |                                |
| ROTARY MOTOR TRANSFORMER GENERATOR     |               |  |                        |           |                                |       |  |                |                                |
| ENGINE ROOM                            | 1             | 0.0701                                 | 7                      | 0.036     | 12                             | 24    | 60   | "              | "                              |
| BOILER ROOM                            | 1             | 0.0701                                 | 7                      | 0.036     | 8                              | 24    | 40   | "              | "                              |
| AUXILIARY SWITCHBOARDS                 |               |  |                        |           |                                |       |  |                |                                |
| ACCOMMODATION Aft                      | 1             | 0.0701                                 | 7                      | 0.036     | 8                              | 24    | 40   | "              | "                              |
| " Forward                              | 1             | 0.0701                                 | 7                      | 0.036     | 8                              | 24    | 300  | "              | "                              |
| Wheelhouse & Mid. Sec. Navigation Main | 1             | 0.1046                                 | 7                      | 0.044     | 22                             | 31    | 170  | "              | "                              |
| WIRELESS                               | 1             | 0.1046                                 | 7                      | 0.044     | 0.5                            | 24    | 170  | "              | "                              |
| SEARCHLIGHT                            | 1             | 0.1046                                 | 7                      | 0.044     | 16                             | 31    | 180  | "              | "                              |
| MASTHEAD LIGHT                         | 1             | 0.0152                                 | 1                      | 0.044     | 0.6                            | 6.1   | 300  | "              | "                              |
| SIDE LIGHTS                            | 1             | 0.0152                                 | 1                      | 0.044     | 0.8                            | 6.1   | 50   | "              | Part L.C. armoured + Part L.C. |
| COMPASS LIGHTS                         | 1             | 0.0152                                 | 1                      | 0.044     | 1.2                            | 6.1   | 20   | "              | L.C.                           |
| POOP LIGHTS                            | 1             | 0.0152                                 | 1                      | 0.044     | 0.5                            | 6.1   | 270  | "              | L.C. + armoured.               |
| CARGO LIGHTS                           | 1             | 0.0152                                 | 1                      | 0.044     | 12                             | 6.1   | 170 max.                                   | "              | "                              |
| ARC LAMPS                              |               |  |                        |           |                                |       |  |                |                                |
| HEATERS                                |               |  |                        |           |                                |       |  |                |                                |

MOTOR CONDUCTORS.

| 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        |                |               |  |                        |           |                                |       |  |                |                |

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.

pro THE HUMBER SHIPWRIGHT CO L<sup>td</sup>  
ST ANDREW'S DOCK, HULL.

Fred Green, Secretary

Electrical Engineers.

Date, November 20<sup>th</sup> 1934

COMPASSES.

Distance between electric generators or motors and standard compass 70 ft

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying 0.5 Ampères to feet from standard compass feet from steering compass.

A cable carrying 0.5 Ampères to feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

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 no degrees on any course in the case of the standard

compass, and no degrees on any course in the case of the steering compass.

COOK, WELTON & GEMMELL, LTD.

Secretary & Director.

Builder's Signature.

Date

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 electrical installation of this vessel has been fitted on board under special survey, tried under working conditions and found good. It is eligible in my opinion, to have record of Electric Light.

Noted  
30/11/34

Total Capacity of Generators 9 Kilowatts.

The amount of Fee E.L. £ 4 : 10 :

When applied for, 26 NOV 1934

Travelling Expenses (if any) £ :

When received, 11.12.34

L. Kuffatt.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 30 NOV 1934

Assigned

See Archy J.E.  
Incl. 45298



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