

Rpt. 13.

No. 45298

## REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 27 NOV 1934

Date of writing Report

When handed in at Local Office

Port of

HULL

No. in Survey held at  
Reg. Book.

Hull

Date, First Survey

4/11/34

Last Survey

22/11/

1934

on the

Steel S.S. "Pentland Firth"

(Number of Visits)

Tons

Gross 484.92

Net 189.08

Built at

Sewerley

By whom built

Brook, Welton &amp; Gemmell Ltd.

Card No.

577

When built 1934-11.

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

Yes

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 generator 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

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

Generators: outgoing circuits controlled by S.P. throwover switches and protected by fuses on each pole.

Instruments on main switchboard

2

ammeters

1

volts

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

W1353-0171 12

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Foundation



**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.  
L.C. cables with brass clips.

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 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.  
✓, 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 No (None).

**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 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, 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 ✓, are the coils self-contained and readily removable for replacement ✓, are the brushes, brush holders, terminals and lubricating arrangements as per Rule ✓, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material ✓, are they protected from mechanical injury and damage from water, steam or oil ✓, are their axes of rotation fore and aft ✓, 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 ✓.

**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 ✓.

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		
		Kilowatts.	Volts.	Ampères.	Revs. 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	.064	82	83	20ft	V.I.R.	L.C. Armoured
EQUALISER CONNECTIONS ...	1								
AUXILIARY GENERATOR...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER } MOTOR GENERATOR...									
ENGINE ROOM... }	1	0.0701	7	.036	12	24	60	"	"
BOILER ROOM... }									
AUXILIARY SWITCHBOARDS ...									
ACCOMMODATION Aft...	1	0.0701	7	.036	8	24	40	"	"
" Forward	1	0.0701	7	.036	8	24	300	"	"
Wheelhouse & Mid. Sec. Navigation Main	1	0.1046	7	.044	22	31	170	"	"
	1	0.0701	7	.036	0.5	24	170	"	"
WIRELESS ...	1	0.1046	7	.044	16	31	180	"	"
SEARCHLIGHT ...									
MASTHEAD LIGHT ...	1	0.0152	1	.044	0.6	6.1	300	"	"
SIDE LIGHTS ...	1	0.0152	1	.044	0.8	6.1	50	"	Part L.C. armoured & Part L.C.
COMPASS LIGHTS ...	1	0.0152	1	.044	1.2	6.1	20	"	L.C.
POOP LIGHTS ...	1	0.0152	1	.044	0.5	6.1	270	"	L.C. & armoured.
CARGO LIGHTS ...	1	0.0152	1	.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 ...										

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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.

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 1/2 feet from standard compass ✓ feet from steering compass.

A cable carrying 0.5 Ampères 1/2 feet from standard compass ✓ feet from steering compass.

A cable carrying Ampères 0.5 feet from standard compass 250 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 & BENNELL, LTD.

Secretary & Director.

Builder's Signature.

Date

Is this installation a duplicate of a previous case? No

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.

Signature

Total Capacity of Generators 9 Kilowatts.

The amount of Fee £ 4 : 10 :

When applied for, 26 NOV 1934

When received, 11.12.34

Travelling Expenses (if any) £ :

L. Knoffart.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 30 NOV 1934

Assigned

See Archy 36  
Incl. 45298



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