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Rpt. 13.

No. 12108

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

16 OCT 1924

Received at London Office

Date of writing Report 19 When handed in at Local Office 10.10.24 Port of Middlesbrough

No. in Survey held at Stockton-on-Tees Date, First Survey 1924 Last Survey Building 19  
Reg. Book. (Number of Visits.....)

on the Steel Screw Steamer SOUTHBOROUGH Tons { Gross  
Net

Built at Stockton By whom built Richardson Duck & Co. Yard No. 689 When built 1921

Owners Humphreys Ltd Port belonging to Cardiff

Electric Light Installation fitted by Sunderland Forge & Engineering Co Ltd Contract No. When fitted 1924

System of Distribution Two Wire

Pressure of supply for Lighting 110 volts, Heating None volts, Power None volts.

Direct or Alternating Current, Lighting Direct Power None

If alternating current system, state frequency of periods per second 0.36

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 overload yes, are they compound wound yes

are they over compounded 5 per cent. yes, if not compound wound state distance between each generator not so situated

Where more than one generator is fitted are they arranged to run in parallel not so fitted, is an adjustable regulating resistance fitted in series with each shunt field yes.

Are all terminals accessible and clearly marked yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited yes

Are the lubricating arrangements of the generators as per Rule yes.

Position of Generators Engine Room, Bottom Platform

is the ventilation in way of the generators satisfactory yes, are they clear of inflammable material yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators not so situated and

are the generators protected from mechanical injury and damage from water, steam or oil yes

are their axis 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 Close to Generator

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 not so situated

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 not so situated and

are they constructed wholly of durable, incombustible 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 connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework yes, and is the frame effectively earthed yes

Are the following fittings as per Rule, viz.:— 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 Double Pole Switch & Fuses for Generator, Single Pole Switches and Double Pole Fuses for outgoing circuits.

Instruments on main switchboard ammeters 1 voltmeters none fitted 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

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes.



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1083-00350

**Insulation of Cables**, state type of cables, single or twin single & twin are the cables insulated and protected as per Tables III or IV of the Rules yes

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 3 Volts

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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 none fitted

**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 V.I.R Braided in Pipe.

If cables are run in wood casings, are the casings and caps secured by screws none fitted, are the cap screws of brass none fitted are the cables run in separate grooves not so fitted. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI yes

**Refrigerated Chambers**, if lights are fitted, are the cables and fittings in accordance with the special requirements none fitted

**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 Positions**, 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 \_\_\_\_\_, 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 fitted

**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, are separate screens provided for the use of oil and electric side lights yes, are separate oil lanterns provided for the mast head lights and side lights 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 fitted, 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 fitted, how are the cables led \_\_\_\_\_, where are the controlling switches situated \_\_\_\_\_

**Searchlight Lamps**, No. of None fitted, whether fixed or portable \_\_\_\_\_, are their fittings as per Rule \_\_\_\_\_

**Arc Lamps**, other than searchlight lamps, No. of none fitted, are their live parts insulated from the frame or case \_\_\_\_\_, are their fittings as per Rule \_\_\_\_\_

**Motors**, are their working parts readily accessible None fitted, 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 axis 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 as per Rule None fitted

**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 \_\_\_\_\_

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office None fitted

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	88	110	80	375	Open Type Inverted Steam Engine			
AUXILIARY ...	None								
EMERGENCY ...	None								
ROTARY TRANSFORMER	None								

  

LIGHTING AND HEATING CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	0.0000	19	0.064	80	30	V.I.R.	Lead Covered in Pipe
	AUXILIARY GENERATOR	None							
	EMERGENCY GENERATOR	None							
	ROTARY TRANSFORMER...	None							
	AUXILIARY SWITCHBOARDS	None							
	ENGINE ROOM	2	0.0011	7	0.036	12	30	V.I.R.	Lead Covered Armoured & Braided.
	BOILER ROOM								
	Navigation	2	0.0011	7	0.036	9	390.	V.I.R.	in Pipe (Braided)
	Saloon & Forward	2	0.1046	7	0.44	18	360.	V.I.R.	in Pipe (Braided)
	Engineers & aft	2	0.1046	7	0.44	16	110.	V.I.R.	in Pipe (Braided)
	WIRELESS	2	0.1046	7	0.44	15	340.	V.I.R.	in Pipe (Braided)
	SEARCHLIGHT	None							
	MASTHEAD LIGHT	2	0.0194	3	0.29	1.0	320	V.I.R.	Braided in Pipe
	SIDE LIGHTS	2	0.0194	3	0.29	2.0	50	V.I.R.	Lead Covered
	COMPASS LIGHTS	2	0.0194	3	0.29	5	20	V.I.R.	Lead Covered
	POOP LIGHTS	None							
	CARGO LIGHTS	2	0.0194	3	0.29	3.0	20.	V.I.R.	Braided in Pipe
	ARC LAMPS	None							
	HEATERS	None							

  

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	None							
	MAIN BILGE LINE PUMPS	None							
	GENERAL SERVICE PUMP	None							
	EMERGENCY BILGE PUMP	None							
	SANITARY PUMP	None							
	CIRC. SEA WATER PUMPS	None							
	CIRC. FRESH WATER PUMPS	None							
	AIR COMPRESSOR	None							
	FRESH WATER PUMP	None							
	ENGINE TURNING GEAR	None							
	ENGINE REVERSING GEAR	None							
	LUBRICATING OIL PUMPS	None							
	OIL FUEL TRANSFER PUMP	None							
	WINDLASS	None							
	WINCHES, FORWARD	None							
	WINCHES, AFT	None							
	STEERING GEAR	None							
	WORKSHOP MOTOR	None							
	VENTILATING FANS	None							

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.

P. PRO. THE SUNDERLAND FORGE & ENGINEERING CO. LD.

Electrical Engineers. Date 6/10/24.

**COMPASSES.**

Distance between electric generators or motors and standard compass 116 feet

Distance between electric generators or motors and steering compass 106 feet

The nearest cables to the compasses are as follows:—

A cable carrying 9 Ampères 20 feet from standard compass 10 feet from steering compass.

A cable carrying 20 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 1.0 Ampères led into feet from standard compass 10 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 nil degrees on any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

FOR RICHARDSON, DUCK & CO. LTD.

W.D. Atkin

Builder's Signature. Date 9<sup>th</sup> Oct. 1924.

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. This installation has been fitted in accordance with the Rules: is of good materials and workmanship and on completion was examined under full working conditions and found satisfactory.)

It is submitted that this vessel is eligible for THE RECORD. Elec. light.

J.W.D.  
17/10/24

Total Capacity of Generators 8.8 Kilowatts

The amount of Fee ... £ 8-16-0

Travelling Expenses (if any) £

When applied for, 10/10/24  
 When received, 13/10/24

W.M. Morrison

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 3.23—Transfer.  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)