

Rpt. 13.

No. 75875

**REPORT ON ELECTRIC FITTINGS.**

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report *Aug 28<sup>th</sup> 1922* When handed in at Local Office *31<sup>st</sup> Aug 1922* Port of *NEWCASTLE-ON-TYNE* Received at London Office *FR. SEP. 1 1922*No. in Survey held at *Newcastle* Date, First Survey *8/12/21* Last Survey *25/8/22* 19  
Reg. Book. (Number of Visits *19*)55269 on the *British General* Tons { Gross *7360*  
Net *4360*Built at *Newcastle* By whom built *Palmer & S. J. Colley* Yard No. *926* When built *1922*Owners *British Tankers Co Ltd* Port belonging to *London*Electric Light Installation fitted by *Palmer & S. J. Colley* Contract No. *926* When fitted *1922*System of Distribution *Double wire distribution system* ✓Pressure of supply for Lighting *110* ✓ volts, Heating *—* volts, Power *220* ✓ volts.Direct or Alternating Current, Lighting *direct* ✓ Power *alternating* ✓If alternating current system, state frequency of periods per second *50* ✓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 *—*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 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 on dynamo flat port + 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 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 *engine room on dynamo flat after end* ✓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, 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 *circuit breakers fitted with slow coils + 3-way switch on A.C. generators, double pole change-over switch and fuses on D.C. generators for lighting* ✓Instruments on main switchboard *4 A.C., 1 D.C., ammeters 2 A.C., 1 D.C., voltmeters* *yes* ✓ 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* ✓ through double pole fuses to earthSwitches, 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 *iron clad boxes with switches + fuses for lighting, 2nd fuses fitted, iron clad boxes with 3-way switches + fuses for power* ✓



Insulation of Cables, state type of cables, single or twin *single +* are the cables insulated and protected as per Tables III or IV of the Rules. *yes* ✓  
*P.I. score*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *5 volts lighting circuits* ✓

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 *sealed in trifurcating boxes* ✓

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 *on perforated plating in engine room.*

*lighting cables run in channel bed troughing filled with compound.*

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 VI *yes* ✓

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

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 —

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 *steam driven dynamo coupled through double pole change over switch fuses to main lighting switchboard.* ✓

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 *yes fitted with*

*glass shades heavy metal guards.* ✓

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *yes, protected by*

*stout glass bowl, only accessible from outside the pump room & operated by R.P. switch* how are the cables led

*in galvanised iron pipe wholly outside.* ✓

where are the controlling switches situated *fitted in accommodation passage* ✓

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 axis of rotation fore and aft *yes except*

*steering gear motor* 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 *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	120 KVA.	220	—	1000	Rafian Turbo 7500 R.P.M.	✓	
MAIN ...	1	10	110	91	750	Induction motor	✓	
EMERGENCY ...	1	10	110	91	340	Single cylinder steam engine	✓	
ROTARY TRANSFORMER	1	1 1/2	135-180	11-11 1/2	8-3	1500/1800	2.0 motor 110 volts	✓

## 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...	3	.3024	37	.103	316	✓	80	paper ✓ lead covered armoured & covered.
	MAIN GENERATOR	2	.1478	37	.072	91	✓	21	rubbed
	EMERGENCY GENERATOR	2	.1478	37	.072	91	✓	21	rubbed.
	ROTARY TRANSFORMER...	2	.1478	37	.072	91	✓	21	rubbed.
	AUXILIARY SWITCHBOARDS...	—	—	—	—	—	—	—	—
	ENGINE ROOM	2	.0106	7	.044	16.14	✓	108	rubbed
	BOILER ROOM	2	.0106	7	.044	6.4	✓	276	rubbed
	After accommodation	2	.02214	7	.064	23.45	✓	162	rubbed
	Acc. midship compartment	2	.1478	37	.072	68.84	✓	654	rubbed
	WIRELESS	2	.02214	7	.064	13.6	✓	690	rubbed
	SEARCHLIGHT	—	—	—	—	—	—	—	—
	MASTHEAD LIGHT, aft.	2	.00194	3	.029	1.12	✓	360	rubbed
	MASTHEAD LIGHT, forward	2	.00194	3	.029	1.12	✓	240	rubbed
	SIDE LIGHTS	2	.00194	3	.029	1.12	✓	30	rubbed
	COMPASS LIGHTS	2	.00194	3	.029	.28	✓	20	rubbed
	STEER LIGHTS	2	.00194	3	.029	1.12	✓	678	rubbed
	CARGO LIGHTS	2	.003	70	.0076	6.0	✓	81	rubbed (flexible) K.I.R. braided & armoured.
	ARC LAMPS	—	—	—	—	—	—	—	—
	HEATERS	—	—	—	—	—	—	—	—

## 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	—	—	—	—	—	—	—	—
	MAIN BILGE LINE PUMPS	—	—	—	—	—	—	—	—
	GENERAL SERVICE PUMP	—	—	—	—	—	—	—	—
	EMERGENCY BILGE PUMP	—	—	—	—	—	—	—	—
	SANITARY PUMP	—	—	—	—	—	—	—	—
	CIRC. SEA WATER PUMPS	2	.1009	19	.083	123	✓	90	paper ✓ lead covered armoured & covered
	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	1	.02214	7	.064	50	✓	75	paper ✓
	WORKSHOP MOTOR	—	—	—	—	—	—	—	—
	VENTILATING FANS	—	—	—	—	—	—	—	—
	Cambridge System	2	.00701	7	.036	6.6	✓	66	rubbed
	Oil purifier motor	1	.01046	7	.044	10.0	✓	120	rubbed
	Refrigerator motor	1	.00701	7	.036	26.0	✓	9	paper ✓
	Feed pump	1	.02214	7	.064	50.0	✓	96	paper ✓
	Forced draught fan	2	.1009	19	.083	69.0	✓	90	paper ✓
	Motor generator	1	.02214	7	.064	40	✓	34	paper ✓



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.

Palmer's Shipbuilding & Iron Co Ltd Electrical Engineers. Date 30-8-22  
Hennellinson

#### COMPASSES.

Distance between electric generators or motors and standard compass 224 feet.  
Distance between electric generators or motors and steering compass 19 feet.  
The nearest cables to the compasses are as follows:—  
A cable carrying .28 Amperes on the ~~feet from~~ standard compass 7 feet from steering compass.  
A cable carrying .28 Amperes 7 feet from standard compass on the ~~feet from~~ steering compass.  
A cable carrying        Amperes        feet from standard compass        feet from steering compass.  
Have the compasses been adjusted with and without the electric installation at work at full power         
Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted         
The maximum deviation due to electric currents was found to be        degrees on        course in the case of the standard compass, and        degrees on        course in the case of the steering compass.

Hos. L. Simpson Builder's Signature. Date 30/8/22  
MANAGER

Is this installation a duplicate of a previous case yes. If so, state name of vessel British Corporal.

General Remarks (State quality of workmanship, opinions as to class, &c. The above installation is in)  
accordance with the Society's Rules. The vessel is eligible in my opinion  
for notation etc light, & whistles.

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

1/9/22

2.120 KW.  
Total Capacity of Generators 1-10 Kilowatts

The amount of Fee ... £ 36 : 11 : 29/8/22

Travelling Expenses (if any) £ :        : See Debit Book.

W.T. Badger.  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute       

Assigned       

1m. 322.—Transfer.  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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