

Rpt. 13.

No. 14277

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

22 NOV 1930

Received at London Office

Date of writing Report 21. 11. 1930 When handed in at Local Office 21. 11. 1930 Port of MIDDLETBROUGH.

No. in Survey held at STOCKTON ON TEES

Date, First Survey 1 Oct

Last Survey 23. 10. 1930

Reg. Book.

(Number of Visits.....)

68903 on the SS. DARTFORD

Tons { Gross 4076
Net 2443

Built at STOCKTON ON TEES

By whom built SMITHS DOCK CO LTD Yard No. 921

When built 1930

Owners (WATTS, WATTS & CO) Britain S.S. Co Ltd Port belonging to LONDON

Electric Light Installation fitted by R. PICKERSGILL & SONS LTD

Contract No. 921 When fitted 1930

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution

Pressure of supply for Lighting 110 volts, Heating - volts, Power 110 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

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 - , 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

Position of Generators

Starboard Side 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

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

Fore End Engine Room Workshop. Starboard Side. 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 Yes

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 micamite 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

Double Pole Main Switch & Fuses Single Pole Switches & Double Pole Fuses in all outgoing circuits

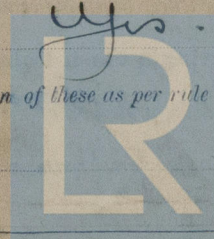
Instruments on main switchboard 1 ammeters 1 voltmeters - synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

2 Lamps in series from each main

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

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



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W163-0023 (112)

Cables: Single, twin, concentric, or multicore Single 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 —

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 —

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 Armoured & Braided Cable

with Helianthus Iron clips + 3/8" Sep. Screws Lead covered & Braided
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 Yes

Joints in Cables, state if any, and how made, insulated, and protected none

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 Bushes

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Armoured Cables bonded at top of Deck Tubes & Keel. Dynamo Keel bonded from Deck plate to Stern Stue.

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 Better Oil Engine at Engine Room Entrance 1 Kw.

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 —

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 —

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

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 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 —, 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 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 —

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office —

PARTICULARS OF GENERATING PLANT.

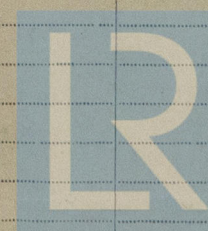
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	1	10	110	93.1	360	Steam Engine		
AUXILIARY ...								
EMERGENCY ...	1	1	110	63.5		Oil Engine		
ROTARY TRANSFORMER								

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.	Rate.			
MAIN GENERATOR ...	1	.01592	19	.012	86.5	99	24ft.	Wire	Lead & Braided
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR...									
EMERGENCY GENERATOR	1	.03960	19	.052	63.5	64	100ft.	"	Armoured & Braided
ROTARY TRANSFORMER									
ENGINE ROOM...	1	.00455	19	.029	10.5	18.2	15ft.	"	50
BOILER ROOM...									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION ...	1	.00101	1	.036	14.0	24	250	"	50
Navigation Circuits	1	.00455	1	.029	5.5	18.2	280	"	50
After hours	1	.00455	1	.029	5.0	18.2	240	"	50
Engines	1	.00455	1	.029	6.5	18.2	80	"	50
WIRELESS ...	1	.00101	1	.036	8.0	24.0	240	"	50
SEARCHLIGHT ...									
MASTHEAD LIGHT ...	1	.00194	3	.029	60watt	67	260	"	Lead & Braided
SIDE LIGHTS ...	1	.00194	3	.029	60	67	60	"	50
COMPASS LIGHTS ...	1	.00194	3	.029	20	67	40	"	50
POOP LIGHTS ...									
CARGO LIGHTS ...	1	.00455	1	.029	10.	18.2	260	"	50
ARC LAMPS ...									
HEATERS ...									

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.	Rate.			
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	1	1	.02214	1	.064	20	46.0	280ft.	Wire	Armoured & Braided
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR...										
(b) MAIN MOTOR ...										
WORKSHOP MOTOR										
VENTILATING FANS										



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W163-0023 (2/2)

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.

RICHARD PICKERSGILL & SONS, LTD.

Electrical Engineers.

Date

October 29th 1930

COMPASSES.

Distance between electric generators or motors and standard compass *Generator in Engine Room. Mains about 150 feet long*

Distance between electric generators or motors and steering compass *from generator to compasses.*

The nearest cables to the compasses are as follows:—

A cable carrying $\frac{1}{2}$ Ampères *4* feet from standard compass *4* feet from steering compass.

A cable carrying *12* Ampères *14* feet from standard compass *14* 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 degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

For SMITH'S DOCK COMPANY, L^{td}

H. W. Lorrish 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.)

This installation was fitted on board under special survey and has been tested under full load and found satisfactory.

The materials and workmanship were good and sound.

London letter dated 18th Oct. 1930 gives approval of the use of V.I.R. Jute covered and armoured cables in machinery spaces.

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

29/11/30

Total Capacity of Generators *17* Kilowatts.

The amount of Fee ... £ *16-0-0* When applied for, *5 Nov 1930*

Travelling Expenses (if any) £ : : When received, *15 Nov 1930*

L. C. Clayton

Surveyor to Lloyd's Register of Shipping.

P. J. Mac

Committee's Minute

Assigned

Elec Lt



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