

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

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Date of writing Report 21. 6. 32. 19 When handed in at Local Office 2. 7. 1932 Port of GLASGOW.

No. in Survey held at GLASGOW & PORT GLASGOW. Date, First Survey 17. 5. 32 Last Survey 27. 6. 32. 19
(Number of Visits.....)Reg. Book. 406 51. on the ss. 'HARMANTEH.' Tons { Gross 5415
Net 3243

Built at PORT GLASGOW. By whom built LITHGONS LTD. Yard No. 854 When built 1932.

Owners WILLIS S.S. CO. LTD. (J & C. HARRISON LTD) Port belonging to LONDON

Electric Light Installation fitted by THE SUNDERLAND FORGE & ENG. CO. LTD Contract No. 854 When fitted 1932

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Double Wire

Pressure of supply for Lighting 110 volts, Heating — volts, Power 110 volts.

Direct or Alternating Current, Lighting Direct Power Direct.

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 Yes

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 Main Engine Room bottom platform starboard aft end.

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 Main Engine Room, on bulkhead adjacent to generators

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, 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 micanite 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 Switch

4 fuses for generator, single pole switch & double pole fuses for each outgoing circuit

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 Earth Lamp switch

4 fuse on each pole

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

Cables: Single, twin, concentric, or multicore Single & Twin 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 3 Volts.
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, 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. Main: V/R Braided cable run in galv. covered conduit, Machinery Spaces: Lead covered Armoured & Braided Cables secured with Galv. Iron Clips. Deck: Lead covered Cables secured with Brass 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 Yes.

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 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 Yes.

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 Yes.

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 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.

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.

how are the cables led Yes.

where are the controlling switches situated Yes.

Searchlight Lamps, No. of 1, whether fixed or portable Yes, are their fittings as per Rule Yes.

Are Lamps, other than searchlight lamps, No. of 1, 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.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	14	110	127.3	500	Single Cylinder Horizontal Steam Engine		
AUXILIARY	1							
EMERGENCY	1							
ROTARY TRANSFORMER	1							

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	2	14780	27	0.072	127.3	152	49	V/R	Lead covered Armoured & Braided.
EQUALISER CONNECTIONS	1								
AUXILIARY GENERATOR	1								
EMERGENCY GENERATOR	1								
ROTARY TRANSFORMER	1								
ENGINE ROOM	2	101046	7	0.244	28	31	30	V/R	Lead covered Armoured & Braided.
BOILER ROOM	1								
AUXILIARY SWITCHBOARDS	2	100455	7	0.229	4.2	18.2	400	V/R	Braided in Galv. Conduit.
Navigation	2	100455	7	0.229	4.2	18.2	400	V/R	Braided in Galv. Conduit.
Officers & Engineers ACCOMMODATION	2	101462	7	0.252	28.6	37	80	V/R	Braided in Galv. Conduit.
WIRELESS	2	100701	7	0.236	21	24	385	V/R	Braided in Galv. Conduit.
SEARCHLIGHT	1								
MASTHEAD LIGHT	2	100194	3	0.229	36	7.8	650	V/R	Braided in Galv. Conduit.
SIDE LIGHTS	2	100194	3	0.229	36	7.8	110	V/R	Lead covered.
COMPASS LIGHTS	2	100194	3	0.229	36	7.8	30	V/R	Lead covered.
POOP LIGHTS	2	100455	7	0.229	8.5	18.2	336	V/R	Braided in Galv. Conduit.
CARGO LIGHTS	2	100194	3	0.229	36	7.8	80	V/R	Braided in Galv. Conduit.
ARC LAMPS	1								
HEATERS	1								

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	1									
MAIN BILGE LINE PUMPS	1									
GENERAL SERVICE PUMP	1									
EMERGENCY BILGE PUMP	1									
SANITARY PUMP	1									
CIRC. SEA WATER PUMPS	1									
CIRC. FRESH WATER PUMPS	1									
AIR COMPRESSOR	1									
FRESH WATER PUMP	1									
ENGINE TURNING GEAR	1									
ENGINE REVERSING GEAR	1									
LUBRICATING OIL PUMPS	1									
OIL FUEL TRANSFER PUMP	1									
WINDLASS	1									
WINCHES, FORWARD	1									
WINCHES, AFT	1									
STEERING GEAR—										
(a) MOTOR GENERATOR	1									
(b) MAIN MOTOR	1									
WORKSHOP MOTOR	1									
VENTILATING FANS	1	2	102214	7	0.264	44	46	340	V/R	Braided in Galv. Conduit.
Refrig. Machine	1	2	100455	7	0.229	9	16.4	38	V/R	Lead covered & Braided.
Refrig. Exh. Water Pump	1	2	100455	7	0.229	9	16.4	38	V/R	Lead covered & Braided.

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 DUNDEE AND FORBES & ENGINEERING CO. LTD.

Electrical Engineers.

Date 23.6.32

Thos. Thompson

COMPASSES.

Distance between electric generators or motors and standard compass 124 feet

Distance between electric generators or motors and steering compass 114 feet

The nearest cables to the compasses are as follows:—

A cable carrying 4.2. Amperes 10 feet from standard compass 10 feet from steering compass.

A cable carrying 18 Amperes 10 feet from standard compass led into feet from steering compass.

A cable carrying 18 Amperes 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 0 degrees on any course in the case of the standard compass, and 0 degrees on any course in the case of the steering compass.

LITHGOWS LIMITED

John McCulloch Secretary

Builder's Signature.

Date 29 June 32

Is this installation a duplicate of a previous case. Yes. If so, state name of vessel.

HARMATRIS

General Remarks (State quality of workmanship, opinions as to class, &c.)

This installation has been

fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship were found to be good and sound.

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

Elec. Light

21. 7/7/32

Total Capacity of Generators 14 Kilowatts.

The amount of Fee ... £ 14 : 0 : 0 at 60k

Travelling Expenses (if any) £ : 6 : 6.29/6/32

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 5-JUL-1932

Assigned Elec. Lights CD



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