

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 21-12-1922 When handed in at Local Office 21-12-1922 Port of Bristol Received at London Office 22 DEC. 1922

No. in Survey held at Bristol Date, First Survey Oct 21, 1921 Last Survey July 12th 1922
Reg. Book. 58485 on the T.S.M.V. Dumra (Number of Visits.....13.....)

Built at Bristol By whom built Charles Hill & Sons Yard No. 146 When built 1922
Tons { Gross 2304
Net 1317

Owners British India Steam Navigation Co. Ltd. Port belonging to Glasgow

Electric Light Installation fitted by Charles Hill & Sons Bristol Contract No. When fitted 1922

System of Distribution Double Wire System
Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts.
Direct or Alternating Current, Lighting Direct Current 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 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 No ✓, 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 Port & Starboard 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 ✓, 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 Starboard wing of 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, 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 ✓

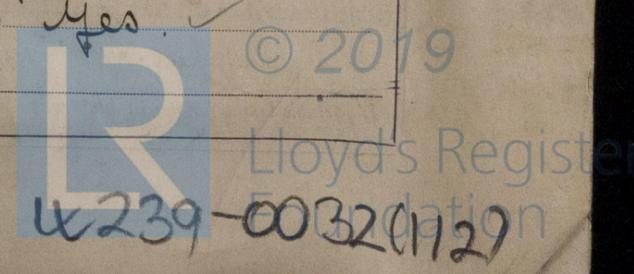
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches
D.P. main switches, S.P. L.B. switches for out going circuit

Instruments on main switchboard Two ammeters One 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 lamps for each generator ✓

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 ✓



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

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 0.007 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

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 Supported with Galv. Iron

clips - protected with lead cover + Galv iron wires + braced over all

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 VI 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 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 Earth lamp connections

on main switchboard fixed with 3/8" brass M/T screw

, 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 Bridge deck

Current controller with D.P. + B. switches

generator direct coupled to an Astor oil driven set

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

Protected with b.d. metal covers

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected W.T. + G.P.

, how are the cables led W.T. + G.P. Glands

where are the controlling switches situated Engine Room platform

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

Arc 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 axis 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 none and Yes

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	80 KW ea.	220	363	375	Diesel Engine		
AUXILIARY								
EMERGENCY	1	2.5	220	11.4	1100	Astor Oil Engine		
ROTARY TRANSFORMER								

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.				
2	MAIN GENERATOR...	2 ea.	6000	91	.093	363	186 x 84	Pure V.I.R.	R.C. Arm + Brackets Overall
1	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	2	.0225	7	.064	11.4	20	"	"
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	WIRELESS	2	.0225	7	.064	2.2	240	"	"
	SEARCHLIGHT								
	MASTHEAD LIGHT...	2	.0020	3	.029	.5	600	"	"
	SIDE LIGHTS...	2	.0020	3	.029	.5	100	"	"
	COMPASS LIGHTS...	2	.0020	3	.029	.1	50	"	"
	POOP LIGHTS								
	CARGO LIGHTS								
	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	1	.0750	19	.072	47	225	Pure V.I.R.	R.C. Arm + Brackets Overall
	MAIN BILGE LINE PUMPS	1	.0225	7	.064	12.4	60	"	"
	GENERAL SERVICE PUMP	1	.0225	7	.064	35.5	185	"	"
	EMERGENCY BILGE PUMP	1	.0045	4	.029	6.7	56	"	"
	SANITARY PUMP	1	.0225	7	.064	35.5	212	"	"
	CIRC. SEA WATER PUMPS	2	.0225	7	.064	26	160	"	"
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR	1	.5000	61	.103	340	204	"	"
	FRESH WATER PUMP	1	.0245	7	.029	12.4	68	"	"
	ENGINE TURNING GEAR	2	.0225	7	.064	20	140	"	"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	.0225	7	.064	16.6	160	"	"
	OIL FUEL TRANSFER PUMP	1	.0225	7	.064	39	84	"	"
	WINDLASS	1	1500	37	.072	166	400	"	"
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR	1	.0225	7	.064	48	420	"	"
	WORKSHOP MOTOR	1	.0225	7	.064	20	220	"	"
	VENTILATING FANS	1	.0045	4	.029	7.7	220	"	"
	Borehole	1	.0750	19	.072	80	420	"	"
	Hot Water	1	.0045	4	.029	11.4	200	"	"
	Oil Separator	1	.0045	4	.029	4.3	228	"	"

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.

CHARLES HILL & SONS LTD.

Electrical Engineers.

Date 18.12.22

COMPASSES.

Distance between electric generators or motors and standard compass Engine room & Bridge
 Distance between electric generators or motors and steering compass 5

The nearest cables to the compasses are as follows:—

A cable carrying . . . 1 Ampères into feet from standard compass into feet from steering compass.
 A cable carrying . . . 1 Ampères " " feet from standard compass " " feet from steering compass.
 A cable carrying . . . 1 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.
 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.

Charles Hill & Sons Ltd.
 per Alan Peck

Builder's Signature. Date 18.12.22

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 under survey, the materials & workmanship are good & according to the rules, all parts tested under full working conditions with satisfactory results and are eligible in my opinion for record in the Register Book)

It is submitted that this vessel is eligible for THE RECORD. Elec. Light
AMB
27/12/22

Total Capacity of Generators 80 162.5 Kilowatts

The amount of Fee £ 30 : 10 : See 15.1922.

Travelling Expenses (if any): £ : : See debit book.

John W. Dwyne
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 22.—Transfer.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)