

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 4 SEP 1924

Date of writing Report 15-8-1924 When handed in at Local Office 1-9-1924 Port of GLASGOW.

No. in Survey held at GREENOCK. Date, First Survey 1-8-24 Last Survey 13-8-1924
Reg. Book. (Number of Visits 3)

89257 on the SS. INVELLA. Tons { Gross 5026
Net 4743

Built at GLASGOW. By whom built BARGLEY CURRIE & CO Card No. 600 When built 1924.

Owners SS. INDUNA CO LTD Port belonging to GLASGOW.

Electric Light Installation fitted by MESSRS A. WATSON & CO Contract No. 600 When fitted 1924.

System of Distribution Double Wire Distribution System ✓

Pressure of supply for Lighting 100. ✓ volts, Heating - - - - - volts, Power 100 volts.

Direct or Alternating Current, Lighting Direct Current ✓ Power Direct Current ✓

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 - - - - - , 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 Starboard side 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 metallic half coupling

Main Switch Boards, where placed Starboard side of engine Room, adjacent to Dynamo.

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 on pole insulated, 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. Switch & B

fuses for Dynamo. S. P switch and a fuse 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 with switch - fuse on each pole.

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 4 Bars

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 L.C. cables clipped to deck with heavy g.I. clips. L.C. cables clipped to grounds with brass clips

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 No joints

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 fibre.

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 _____

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 No, 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 _____, 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 _____, 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 _____

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule _____

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.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	1	7.5	100	75	500	Lowland steam engine		
AUXILIARY ...								
EMERGENCY ...								
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.				
	MAIN GENERATOR...	2	.060	19	.064	75	45	V.R.	LC + A.
	AUXILIARY GENERATOR	-							
	EMERGENCY GENERATOR	-							
	ROTARY TRANSFORMER...	-							
	AUXILIARY SWITCHBOARDS	-							
	ENGINE ROOM								
	BOILER ROOM	2	.0030	1	.064	5.8	50	V.R.	LC + A
	Salon has 2 force engines	2	.0100	7	.044	22.4	300	"	"
		2	.0070	7	.036	9.2	100	"	"
	WIRELESS	2	.0070	7	.036	5.0	300	V.R.	LC + A.
	SEARCHLIGHT	2	.0015	1	.044	1.0	300	V.R.	LC + A
	MASTHEAD LIGHT	2	.0015	1	.044	1.0	80	"	LC
	SIDE LIGHTS	2	.0015	1	.044	1.0	45	"	"
	COMPASS LIGHTS	2	.0015	1	.044	1.0	45	"	"
	POOP LIGHTS	2	.0015	1	.044	1.0	60	V.R.	LC
	CARGO LIGHTS	2	.0015	1	.044	1.0	60	V.R.	LC
	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	-							
	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	-							
	WORKSHOP MOTOR	-							
	VENTILATING FANS	-							

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.

FOR MR W. WATSON & CO., LTD.,

D Douglas
 DIRECTOR

Electrical Engineers.

Date 28-8-24

COMPASSES.

Distance between electric generators or motors and standard compass 100 feet.

Distance between electric generators or motors and steering compass 95 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 5 Amperes 6 feet from standard compass 5 feet from steering compass.

A cable carrying 2 Amperes in feet from standard compass 4 feet from steering compass.

A cable carrying 2 Amperes 4 feet from standard compass in 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 BAROLAY, CURLE & CO., LTD.

W. Zwing
 Director

Builder's Signature.

Date 29th Aug 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 on board under special survey. Tested under full working conditions and found satisfactory. The workmanship was found to be good and sound.

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

JWD
 5/9/24

Total Capacity of Generators *14.5* Kilowatts

The amount of Fee ... £ *7 10-0* *25/8/24*

Travelling Expenses (if any) £ *10-6* *See debit book.*

J. Rankin
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW* *2 SEP 1924*

Assigned *Elec. Light*

a.b.
 1/9/24

1m. 3.22.—Transfer.

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



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