

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London *MUN. JUN. 2 1924*

Date of writing Report *19* When handed in at Local Office *30-5* 1924 Port of *Belfast*

No. in Survey held at *Belfast* Date, First Survey *March 19th* Last Survey *May 22nd* 1924
 Req. Book. *New Steel Y. M. S. Glenshiel* (Number of Visits *7*)

Built at *Belfast* By whom built *Harland + Wolff Ltd* Yard No. *594* Tons { Gross *9414*
 Net *5803* When built *1924*

Owners *Glen Line Ltd* Port belonging to *Belfast*

Electric Light Installation fitted by *Harland + Wolff Ltd* Contract No. *594* When fitted *1924*

System of Distribution *Double wire*

Pressure of supply for Lighting *220* volts, **Heating** *220* volts, **Power** *220* 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 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 *Port side of Motor 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 *on Platform above thrust recess in Motor 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 *The switchgear of each generator consists of a 1000 amp D.P. switch (equalizer blade closing before opening after Main blades) and a 1000 amp D.P. circuit breaker, Maximum & Reverse current with time lag. The outgoing circuits have each a D.P. switch & one fuse per pole.*

Instruments on main switchboard *2* ammeters *2* voltmeters arranged ~~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*

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*

Motor Room



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 *8 volts*

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 *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 *Cables clipped to perforated steel plating protected by lead covering or lead covering sewed, steel unarmoured & braided overall.*
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 *No*. If armoured and lead covered cables are secured by metal clips, are the clips secured 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 *All electric light fittings, sockets etc. fixed other than to steelwork of the ship are provided with earthing connection equivalent to working conductor*, 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 *25 volt battery in Electrical Workshop, Upper Deck amidships. Lights controlled by switch in Engineers entrance Bridge Deck.*

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 *None*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *No*, how are the cables led *None*

where are the controlling switches situated *Yes*

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

Are Lamps, other than searchlight lamps, No. of *None*, are their lamp parts insulated from the frame or case *None*, are their fittings as per Rule *None*

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 *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*

DESCRIPTION OF GENERATOR	No. of	PARTICULARS OF GENERATING PLANT.				WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		RATED AT					
		Kilowatts	Volts	Ampères	Revs. per Min.	Fuel Used.	Flash Point of Fuel.
MAIN	2	200	220	910	200	each driven by 2 stroke Diesel Engines	
AUXILIARY	-	-	-	-	-	-	-
EMERGENCY	-	-	-	-	-	-	-
ROTARY TRANSFORMER	-	-	-	-	-	-	-

Ref. No.	DESCRIPTION	No. of Conductors	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND		Total Maximum Current Ampères	Approximate Length (Lead and Return) Feet	Insulated with	HOW PROTECTED
				No.	Diameter				
	MAIN GENERATOR	2	45	91	0.103"	910	180	Vulcanized India Rubber	Lead sheathing
	AUXILIARY GENERATOR	-	-	-	-	-	-	-	-
	EMERGENCY GENERATOR	-	-	-	-	-	-	-	-
	ROTARY TRANSFORMER	-	-	-	-	-	-	-	-
	AUXILIARY SWITCHBOARDS	-	-	-	-	-	-	-	-
	ENGINE ROOM	1	0.225	4	0.004"	21.54	340	P.I.R.	L.S.A.B.
	BOILER ROOM	-	-	-	-	-	-	-	-
	WIRELESS	1	0.10	4	0.114"	-	196	P.I.R.	L.S.A.B. in Mast Room
	SEARCHLIGHT	1	0.45	19	0.42"	-	196	P.I.R.	L.S.A.B.
	MASTHEAD LIGHTS	1	0.03	3	0.36"	5.8	600	P.I.R.	L.S.A.B.
	SIDE LIGHTS	1	0.03	3	0.36"	1.16	160	P.I.R.	L.S.A.B.
	COMPASS LIGHTS	1	0.03	3	0.36"	2.4	100	P.I.R.	L.S.A.B.
	POOP LIGHTS	1	0.03	3	0.36"	4.5	160	P.I.R.	L.S.A.B.
	CARGO LIGHTS	1	0.45	19	0.42"	18.3	368	P.I.R.	L.S.A.B.
	ARC LAMPS	1	1.00	19	0.83"	85.5	320	P.I.R.	L.S.A.B. in Mast Room
	HEATERS	1	1.00	19	0.83"	106.5	185	P.I.R.	L.S.A.B. on Decks

Ref. No.	DESCRIPTION	No. of Motors	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND		Total Maximum Current Ampères	Approximate Length (Lead and Return) Feet	Insulated with	HOW PROTECTED
				No.	Diameter				
	BALLAST PUMP	1	0.45	19	0.42"	85	148	P.I.R.	L.S.A.B.
	MAIN BILGE LINE PUMPS	1	0.45	19	0.42"	40	164	Do	Do
	GENERAL SERVICE PUMP	-	-	-	-	-	-	-	-
	EMERGENCY BILGE PUMP	-	-	-	-	-	-	-	-
	SANITARY PUMP	2	1.50	34	0.42"	133	220	Do	Do
	CIRC. SEA WATER PUMPS	-	-	-	-	-	-	-	-
	CIRC. FRESH WATER PUMPS	-	-	-	-	-	-	-	-
	AIR COMPRESSOR	1	500	61	0.103"	645	208	Do	Do
	FRESH WATER PUMP	1	0.225	4	0.004"	15	172	Do	Do
	ENGINE TURNING GEAR	2	0.45	19	0.42"	41	112	Do	Do
	ENGINE REVERSING GEAR	-	-	-	-	-	-	-	-
	LUBRICATING OIL PUMPS	2	0.45	19	0.42"	40	42	Do	Do
	OIL FUEL TRANSFER PUMP	1	0.225	4	0.004"	33.5	92	Do	Do
	WINDLASS	1	300	34	0.103"	345	210	Do	Do
	WINCHES, FORWARD	-	-	-	-	-	-	-	-
	WINCHES, AFT	-	-	-	-	-	-	-	-
	STEERING GEAR	2	200	34	0.83"	152	442	Do	Do
	WORKSHOP MOTORS	1	0.03	3	0.36"	8.55	104	Do	Do
	VENTILATING FANS	2	0.04	4	0.36"	10.4	232	Do	Do
	Oil Compressor	2	1.50	34	0.42"	133	332	Do	Do
	Water Cooling Pump	1	0.45	19	0.42"	23	244	Do	Do
	Drain Pumps	2	0.40	19	0.52"	25	332	Do	Do
	Hot Salt Water Pump	1	0.03	3	0.36"	3.5	180	Do	Do
	Refuse Churn	1	0.04	4	0.36"	15.4	188	Do	Do
	3 Ton Winches	2	0.45	19	0.42"	43	188	Do	Do
	5 Ton Winches	4	1.00	19	0.83"	120	188	Do	Do
	4 Ton Winches	4	1.50	34	0.42"	155	188	Do	Do
	6 ton Yardarm Winches	6	2.00	34	0.83"	190	188	Do	Do

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 of the



Electrical Engineers. Date _____

COMPASSES.

Distance between electric generators or motors and standard compass *Generators 100 feet. Nearest motor 40 ft.*
 Distance between electric generators or motors and steering compass *92 feet " " 38 ft.*
 The nearest cables to the compasses are as follows:—
 A cable carrying *2.9* Amperes *9* feet from standard compass *10* feet from steering compass.
 A cable carrying *4* Amperes *12* feet from standard compass *10* 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 *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 *all* course in the case of the standard compass, and *nil* degrees on *all* course in the case of the steering compass.

For HARLAND & WOLFF, LTD.

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 is fitted in accordance with the Rules & in a satisfactory manner.
 The Machinery was tried under full working & overload conditions and the Diesel Engines, generators & motors were found to be in good & safe working condition.*

THE BOARD
Elec. Dept.
W.A.
2/6/24

Total Capacity of Generators *400* Kilowatts

The amount of Fee £ *41 10 0* When applied for, *May 24 1924*
 Travelling Expenses (if any) £ *✓* : *See list book.* When received,

William Butler
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute _____

Assigned _____

Im. 9. 2. — Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)