

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office JUL 30 1924

Date of writing Report 28th July 1924 When handed in at Local Office 29th July 1924 Port of Aberdeen

No. in Survey held at Aberdeen Date, First Survey May 23rd Last Survey July 17th 1924
Reg. Book. (Number of Visits.....)

on the Screw Steamer **S^r MAGNUS.**

Tons { Gross
Net

Built at Aberdeen By whom built Hall Russell & Co Ltd Yard No. 683 When built 1924

Owners The North of Scotland Ork & Shet Ste Nav Co Port belonging to Aberdeen

Electric Light Installation fitted by James Thomson Contract No. When fitted 1924

System of Distribution Double wire distribution board system ✓

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

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 On starting platform in engine room starboard side

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 6 ft horizontally and none vertically

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 steel frame close 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 none and none

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 both poles

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 A double pole

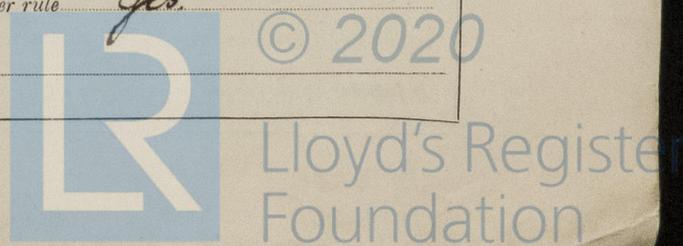
main switch & double pole fuses on each out going circuit.

Instruments on main switchboard one 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 Lamp connected to earth 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 Twin 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 2 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 None

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 Fixed to underside of decks by means of galvanized iron, or brass saddles lead covered and armoured.

If cables are run in wood casings, are the casings and caps secured by screws Yes, are the caps secured by screws 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 no joints

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Deck tubes and packing glands

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 Vulcanized fibre

Earthing Connections, state what earthing connections are fitted and their respective sectional areas 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, 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, also for Engine room & Stokhold

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 by strong brass guards

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

where are the controlling switches situated Yes

Searchlight Lamps, No. of None, whether fixed or portable Yes, are their fittings as per Rule Yes

Arc Lamps, other than searchlight lamps, No. of None, 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 free and all 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

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.		Flash Point	Flash Point of Fuel
MAIN	one	12	110	120	650	Steam Engine		
AUXILIARY	✓					2 Cylinder diesel		
EMERGENCY	✓					Compound vertical type		
ROTARY TRANSFORMER	✓					2 Plate transformer		

LIGHTING AND HEATING CONDUCTORS

Ref. No.	DESCRIPTION	No. of Conductors	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND		Total Maximum Current, Amps.	Approximate Length, (Lead and Rept. In.)	Insulated with	HOW PROTECTED
				No.	Diameter				
	MAIN GENERATOR	2	1168	37	0.24	75	24	7.5.8	Galvanized wire 1924
	AUXILIARY GENERATOR	✓							
	EMERGENCY GENERATOR	✓							
	ROTARY TRANSFORMER	✓							
	AUXILIARY SWITCHBOARDS	✓							
	ENGINE ROOM	2	0.02	3	0.29	1.8	90	7.5.8	Lead cover & Armoured
	BOILER ROOM	2	0.02	3	0.29	1.8	110		
	Accommodation								
	Deck lights in 25 Circuits	each 2	0.02	3	0.29	1.8	8.40		Lead covered
	WIRELESS	2	0.07	7	0.36	2	200		Lead cover & Armoured
	SEARCHLIGHT								
	MASTHEAD LIGHT	2 off	0.02	3	0.29	1	210		
	SIDE LIGHTS	2 off	0.02	3	0.29	1	50		
	COMPASS LIGHTS	2 off	0.02	3	0.29	1	10		
	STEERAGE LIGHTS	2	0.02	3	0.29	1	200		
	CARGO LIGHTS	8 circuits	0.02	3	0.29	2	100		
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS

Ref. No.	DESCRIPTION	No. of Motors	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND		Total Maximum Current, Amps.	Approximate Length, (Lead and Rept. In.)	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								
	WIRELESS								
	WIRELESS FORWARD								
	WIRELESS 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.

James Thomson.

Electrical Engineers.

Date *28th July 1924*

COMPASSES.

Distance between electric generators or motors and standard compass *70 feet*

Distance between electric generators or motors and steering compass *70 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *2* Amperes *8* feet from standard compass *15* feet from steering compass.

A cable carrying *5* Amperes *10* feet from standard compass *8* feet from steering compass.

A cable carrying *7* Amperes ~~feet from~~ standard compass *light* ~~feet from~~ steering compass. *light*

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 HALL, RUSSELL & CO., LTD.

James Hunter DIRECTOR.

Builder's Signature.

Date *29th July 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.)

The various parts of the Installation were examined during the fitting on board. the Materials and Workmanship are good, and on completion the light was tried at full power, also on sea trial for six hours with satisfactory results.

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

C. E. Milk
31/7/24

Total Capacity of Generators *12* Kilowatts

The amount of Fee ... £ *0* When applied for, *29-7-1924*

Travelling Expenses (if any) £ *See Debit book* When received, *19*

C. E. Milk
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI 1 AUG 1924*

Assigned *Elec. Lt.*

Im. 322.—Transfer.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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