

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 AberdeenNo. 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
off 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, 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 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



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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 & Storehold*

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*

how are the cables led *Yes*

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*

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.		Foot Candles.	Flash Point of Fuel.
MAIN ...	<i>One</i>	<i>12</i>	<i>110</i>	<i>120</i>	<i>650</i>	<i>Steam Engine</i>		
AUXILIARY ...	<i>✓</i>					<i>2 Cylinder direct</i>		
EMERGENCY ...	<i>✓</i>					<i>Coupled and fixed type</i>		
ROTARY TRANSFORMER ...	<i>✓</i>					<i>3 Phase 3-wire</i>		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF WIRE.		Total Maximum Current, Amps.	Approximate Length, (Lead and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	<i>2</i>	<i>1168</i>	<i>37</i>	<i>200</i>	<i>75</i>	<i>24</i>	<i>7.5.8</i>	<i>Galvanizing wire</i>
	AUXILIARY GENERATOR	<i>✓</i>							
	EMERGENCY GENERATOR	<i>✓</i>							
	ROTARY TRANSFORMER...	<i>✓</i>							
	AUXILIARY SWITCHBOARDS	<i>✓</i>							
	ENGINE ROOM	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>1.8</i>	<i>90</i>	<i>7.5.8</i>	<i>Lead cover & armoured</i>
	BOILER ROOM	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>1.8</i>	<i>110</i>	<i>7.5.8</i>	<i>Lead cover & armoured</i>
	<i>Accommodation</i>	<i>✓</i>							
	<i>Deck lights in 25</i>	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>1.8</i>	<i>8.40</i>	<i>7.5.8</i>	<i>Lead cover</i>
	<i>Circuits each</i>	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>1.8</i>	<i>8.40</i>	<i>7.5.8</i>	<i>Lead cover</i>
	WIRELESS	<i>2</i>	<i>007</i>	<i>7</i>	<i>036</i>	<i>2</i>	<i>200</i>	<i>7.5.8</i>	<i>Lead cover & armoured</i>
	SEARCHLIGHT	<i>✓</i>							
	MASTHEAD LIGHT	<i>2 off</i>	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>1</i>	<i>210</i>	<i>7.5.8</i>
	SIDE LIGHTS	<i>2 off</i>	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>1</i>	<i>50</i>	<i>7.5.8</i>
	COMPASS LIGHTS	<i>2 off</i>	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>1</i>	<i>10</i>	<i>7.5.8</i>
	<i>Star</i> POOP LIGHTS	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>1</i>	<i>200</i>	<i>7.5.8</i>	<i>Lead cover</i>
	CARGO LIGHTS	<i>8 circuits</i>	<i>2</i>	<i>002</i>	<i>3</i>	<i>029</i>	<i>2</i>	<i>100</i>	<i>7.5.8</i>
	ARC LAMPS	<i>✓</i>							
	HEATERS	<i>✓</i>							

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF WIRE.		Total Maximum Current, Amps.	Approximate Length, (Lead and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	<i>✓</i>							
	MAIN BILGE LINE PUMPS	<i>✓</i>							
	GENERAL SERVICE PUMP	<i>✓</i>							
	EMERGENCY BILGE PUMP	<i>✓</i>							
	SANITARY PUMP	<i>✓</i>							
	CIRC. SEA WATER PUMPS	<i>✓</i>							
	CIRC. FRESH WATER PUMPS	<i>✓</i>							
	AIR COMPRESSOR	<i>✓</i>							
	FRESH WATER PUMP	<i>✓</i>							
	ENGINE TURNING GEAR	<i>✓</i>							
	ENGINE REVERSING GEAR	<i>✓</i>							
	LUBRICATING OIL PUMPS	<i>✓</i>							
	OIL FUEL TRANSFER PUMP	<i>✓</i>							
	WINDLASS	<i>✓</i>							
	WINDLASS FORWARD	<i>✓</i>							
	WINDLASS AFT	<i>✓</i>							
	STEERING GEAR	<i>✓</i>							
	WORKSHOP MOTOR	<i>✓</i>							
	VENTILATING FANS	<i>✓</i>							

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) £

When received,
See Debit book

C. E. Milk

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 1 AUG 1924

Assigned

Elec. Lt.

1m. 322.—Transfer.
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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