

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

9 JUN 1928

Date of writing Report 7th June, 1926 When handed in at Local Office 8th June, 1926 Port of Aberdeen

No. in Survey held at Aberdeen Date, First Survey 28th April/26 Last Survey 28th May, 1926
Reg. Book. "ARUM" (Number of Visits 7)

on the STEEL S.C.K.

Tons { Gross 194
Net 72

Built at Aberdeen By whom built Hall, Russell & Co. Ltd. Yard No. 689 When built 1926-5.

Owners Irvin & Johnson (South Africa) Ltd. Port belonging to Aberdeen.

Electric Light Installation fitted by James Thomson Contract No. When fitted 1926.

System of Distribution

Double Wire ✓

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

In Main 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

2 feet horiz.

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

After End of Engine Room near 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

Same Compartment

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

12" Horiz.

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

insulating materials used

, 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

and single pole switches for each outgoing circuit.

Instruments on main switchboard

One

ammeter,

One

voltmeter,

—

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

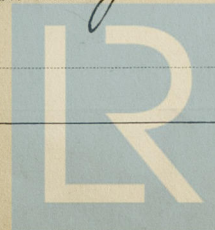
Earth Lamp

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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002770-002783-0229 1/2

Single Cylinder
Insulation of Cables, state type of cables, single or twin *other than* are the cables insulated and protected as per Tables III or IV of the Rules *III*

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 *Metal clips, lead covered, and lead covered and armoured.*

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 *None*

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 *v. 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 *None*

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, in Fish Hold, 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 *-*

where are the controlling switches situated *-*

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

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

Motors, are their working parts readily accessible *None*, 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 *None*

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 ...	<i>One</i>	<i>2</i>	<i>110</i>	<i>18.2</i>	<i>700</i>	<i>Single Cylinder Open Type Steam Engine by Robey.</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
AUXILIARY ...	<i>None</i>								
EMERGENCY ...	<i>None</i>								
ROTARY TRANSFORMER	<i>None</i>								

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...	<i>2</i>	<i>.01046</i>	<i>7</i>	<i>.044</i>	<i>17.1</i>	<i>8</i>	<i>V.I.R.</i>	<i>Taped & braided</i>
	AUXILIARY GENERATOR	<i>None</i>							
	EMERGENCY GENERATOR	<i>None</i>							
	ROTARY TRANSFORMER...	<i>None</i>							
	AUXILIARY SWITCHBOARDS	<i>None</i>							
	ENGINE ROOM <i>2 pairs each</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.8</i>	<i>each pair 40</i>	<i>V.I.R.</i>	<i>Lead covered & armoured</i>
	BOILER ROOM <i>1 " "</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.4</i>	<i>60</i>	<i>V.I.R.</i>	<i>" " "</i>
	Deck lights <i>3 pairs each</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.8</i>	<i>60</i>	<i>V.I.R.</i>	<i>" " "</i>
	Hold lights <i>1 " "</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.8</i>	<i>80</i>	<i>V.I.R.</i>	<i>" " "</i>
	Forecastle <i>1 " "</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>1.2</i>	<i>100</i>	<i>V.I.R.</i>	<i>" " "</i>
	Cabin <i>1 " "</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>1.5</i>	<i>80</i>	<i>V.I.R.</i>	<i>Lead covered</i>
	Galley <i>1 " "</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.4</i>	<i>40</i>	<i>V.I.R.</i>	<i>Lead covered & armoured</i>
	Chart Room <i>1 " "</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.4</i>	<i>24</i>	<i>V.I.R.</i>	<i>Lead covered</i>
	Feeder Cables to } Nav. Lights }	<i>2</i>	<i>.00701</i>	<i>7</i>	<i>.036</i>	<i>4.5</i>	<i>80</i>	<i>V.I.R.</i>	<i>Lead covered & armoured</i>
	Feeder Cable to Fuse Board } for Deck, Hold, & Forecastle }	<i>2</i>	<i>.00701</i>	<i>7</i>	<i>.036</i>	<i>8.0</i>	<i>80</i>	<i>V.I.R.</i>	<i>" " "</i>
	Feeder Cable to Fuse Board } for Eng. Room & Cabin }	<i>2</i>	<i>.00701</i>	<i>7</i>	<i>.036</i>	<i>4.6</i>	<i>6</i>	<i>V.I.R.</i>	<i>Taped & braided</i>
	WIRELESS ...	<i>None</i>							
	SEARCHLIGHT	<i>None</i>							
	MASTHEAD LIGHT <i>3 pairs each</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.9</i>	<i>each pair 140</i>	<i>V.I.R.</i>	<i>Lead covered & armoured</i>
	SIDE LIGHTS ... <i>2 " "</i>	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.9</i>	<i>20</i>	<i>V.I.R.</i>	<i>Lead covered</i>
	COMPASS LIGHT	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.3</i>	<i>20</i>	<i>V.I.R.</i>	<i>" " "</i>
	POOP LIGHT	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>.9</i>	<i>40</i>	<i>V.I.R.</i>	<i>Lead covered & armoured</i>
	CARGO LIGHTS ...	<i>2</i>	<i>.00152</i>	<i>1</i>	<i>.044</i>	<i>2.7</i>	<i>20</i>	<i>V.I.R.</i>	<i>Lead covered</i>
	ARC LAMPS ...	<i>None</i>							
	HEATERS ...	<i>None</i>							

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.

James Thomson

Electrical Engineers.

Date 4th June 1926

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

} About 40 feet

The nearest cables to the compasses are as follows:—

A cable carrying 4.6 Ampères ~~feet from standard compass~~ 6 feet from steering compass.

A cable carrying 8 Ampères ~~feet from standard compass~~ 6 feet from steering compass.

A cable carrying 3 Ampères ~~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 Nil course in the case of the standard compass, and Nil degrees on Nil course in the case of the steering compass.

FOR HALL, RUSSELL & CO., LTD.

James G. Hunter DIRECTOR.

Builder's Signature.

Date 4th June 1926

Is this installation a duplicate of a previous case yes If so, state name of vessel S.S. "NERINE" Abn. Rpt. N° 14090

General Remarks (State quality of workmanship, opinions as to class, &c. This installation has been fitted on board the vessel in accordance with the Rules and in a satisfactory manner; the materials and workmanship are good. On completion the installation was tried under full working conditions with satisfactory results.

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

W.D. J. W.D.
10/6/26

Total Capacity of Generators 2 Kilowatts

The amount of Fee ... £ 3 : 0 : 0 8.6.26 When applied for, .

Travelling Expenses (if any) £ : : 10/6/26 When received, .

A. G. Forster

Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 11 JUN 1926

Assigned

Elec. Light



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