Rpt. 13.

No. 16613.

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 3 JUN 1931

Date of writing Report 1-6- 1931 When handed in at Local Office 2-6- 1931 Port of Aberdeen

No. in Reg. Book. Survey held at Aberdeen Date, First Survey 16-4-31 Last Survey 26-5- 1931 (Number of Visits 8)

on the S.S. "ST SUNNIVA" Tons Gross 1367.64 Net 668.53

Built at Aberdeen By whom built Hall, Russell & Co. Ltd Yard No. 723 When built 1931

Owners North of Scotland, and Orkney & Shetland Steam Navigation Co. Ltd. Port belonging to Aberdeen

Electric Light Installation fitted by J. Thomson & Co. Contract No. When fitted 1931

Is the Vessel fitted for carrying Petroleum in bulk no

System of Distribution Two wire

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

Direct or Alternating Current, Lighting Direct Current **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 rating 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 ✓ No, is an adjustable regulating resistance fitted in series with each shunt field ✓

Are all terminals accessible, clearly marked, and furnished with sockets yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched 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 axes 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 In 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 ✓

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, non-ignitable 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 insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework ✓,

and is the frame effectively earthed ✓. Are the fittings as per Rule regarding :— 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 & fuses to generator. SP switch & D.P. fuses to 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 Lamps.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes

Cables: *Single, twin, concentric, or multicore* Single & twin *are the cables insulated and protected as per Tables IV or V 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 0·04 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* Clipped to under sides of decks & to bulkheads.

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 VIII* 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 Partitions, *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* through earth lamps

, 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 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

Secondary Batteries, *are they constructed and fitted as per Rule* none

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 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* 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 fore and aft* vertical, *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 and fitted as per Rule* yes

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: Kilowatts.	Volts.	Ampères.	Revs. per Min.	Driven by	Where driven by an internal combustion engine: Fuel Used.	Flash Point of Fuel.
Main	One	15	110	136	700	Steam engine.		
Auxiliary	One	15	110		875	Fitted 12.42		
Emergency								
Rotary Transformer								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

Description.	Conductors: No. per Pole.	Total Effective Area per Pole Sq. Ins.	Composition of Strand: No.	Diameter.	Total Maximum Current. Ampères: In Circuit.	Rule.	Approximate Length. (Lead and Return.) Feet.	Insulated with	How Protected.
Main Generator	1	0·14780	37	·072	85	152	40	V.I.R.	steel tube.
Equaliser Connections									
Auxiliary Generator									
Emergency Generator									
Rotary Transformer Motor									
Rotary Transformer Generator									
Engine Room 3 circuits each	1	0·00152	1	·044	1·5	6·1	100	V.I.R.	L.C & armoured.
Boiler Room 2 "	1	"	1	"	1·5	"	160	"	" "
Auxiliary ~~Switchboards~~ Boxes									
Deck & Cargo.	1	0·00701	7	·036	12	24	200	"	" "
Holds & Vent. Fans	1	0·01046	7	·044	15	31	20	"	" "
Engine Room.	1	"	"	"	7·5	"	20	"	" "
Wireless.	1	0·00455	7	·029	2·3	18·2	250	"	" "
Navigation	1	0·00299	3	·036	2·0	12	250	"	" "
~~Accomodation~~ Saloon & Starbd State Rooms	1	0·01046	7	·044	17	31	80	"	" "
Ladies Cabin & Pt. State Rooms	1	"	"	"	17	"	100	"	" "
2nd Cabin & Forecastle	1	"	"	"	6	"	360	"	" "
St. Accom. Top Deck.	1	0·00299	3	·036	2	12	208	"	" "
Pt. " " "	1	"	"	"	4	"	248	"	" "
Wireless	1	0·00455	7	·029	2·3	18·2	250	"	" "
Searchlight									
Masthead Light 2 each	1	0·00152	1	·044	·36	6·1	Foremost 200 Mainmost 400	"	L.C & armoured, Steel tube way of mast
Side Lights 2 each	1	"	1	"	·36	"	80	"	L.C.
Compass Lights 2 "	1	"	1	"	·1	"	20	"	L.C.
~~Poop~~ Stern Light	1	"	1	"	·36	"	450	"	L.C & armoured.
Cargo Lights 3 circuits each	1	"	1	"	1·8	"	50	"	" "
Arc Lamps									
Heaters									

MOTOR CONDUCTORS.

Description.	No. of Motors.	Conductors: No. Per Pole.	Total Effective Area per Pole Sq. Ins.	Composition of Strand: No.	Diameter.	Total Maximum Current. Ampères: In Circuit.	Rule.	Approximate Length. (Lead and Return.) Feet.	Insulated with	How Protected.
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— (a) Motor Generator										
Steering Gear— (b) Main Motor										
Workshop Motor										
Ventilating Fans	5	1	0·00152	1	·044	1·8	6·1	270	V.I.R.	L.C & armoured

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.

pro James Thomson
James Pirrie Electrical Engineers. Date 29th May 1931

COMPASSES.

Distance between electric generators or motors and standard compass 82 ft

Distance between electric generators or motors and steering compass 80 ft

The nearest cables to the compasses are as follows :—

A cable carrying 2 *Ampères* 12 *feet from standard compass* 8 *feet from steering compass.*

A cable carrying -1 *Ampères* to *~~feet from~~ standard compass* & to *~~feet from~~ steering compass.*

A cable carrying *Ampères* *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 no *degrees on* any *course in the case of the standard compass, and* no *degrees on* any *course in the case of the steering compass.*

FOR HALL, RUSSELL & CO., LTD.
James G. Hunter DIRECTOR.
Builder's Signature. Date 1st June 1931

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 electrical installation of this vessel has been fitted on board under special survey, tried under working conditions, and found good.
It is eligible in my opinion to have the record "Electric Light" in the Register Book.

It is submitted that this vessel is eligible for ~~the Register~~
Elec Light
DA 5/6/31

Total Capacity of Generators 15 *Kilowatts.*

The amount of Fee ... ... £ 15 : 0 :0 — When applied for, 2-6- 1931

Travelling Expenses (if any) £ : : — When received, 3. 6. 1931 666

P. Fitzgerald.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 9 JUN 1931

Assigned Elec. Light

1m,11,29.—Transfer.

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