

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 27 MAR 1925

Date of writing Report 20-3-1925 When handed in at Local Office 26-3-1925 Port of Belfast

No. in Survey held at Belfast Date, First Survey 2nd Dec 1924 Last Survey 26th Feby 1925
Reg. Book. on the New Steel T.S.S. "Raymak" (Number of Visits 20)

Built at Greenock By whom built Harland & Wolff Ltd Yard No. 659^{CK} When built 1925
Owners P.O. Steam Navigation Coy, Port belonging to Greenock

Electric Light Installation fitted by Harland & Wolff Ltd Contract No. 659 When fitted 1925

System of Distribution Double wire, Distribution, & Sub-distribution system.

Pressure of supply for Lighting 220^v volts, Heating 220^v volts, Power 220^v 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

Position of Generators Emergency Generator, in Emerg. Dynamo Room: Boat Deck Amidships
Main Generators on Dynamo Platform above Thrust Pieces

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 Dynamo Platform, above Thrust Pieces: Emergency Board in Emerg Dyna 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

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

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 800amp. T.P. Switch, with Equalizer blade in advance & a

450 amp. D.P. circuit breaker Max & Rev, with time lag. Two outgoing circuits have each a 250 amp D.P. circuit breaker (Max only): all the other circuits have each a D.P. Switch and a D.P. Fuse.

Instruments on main switchboard 8 ammeters 2 voltmeters arranged ~~for~~ 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

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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 *10 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

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 perforated steel plating protected by lead covering or lead covering, sewed, steel-encased & 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 *Yes*. 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

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. fitted other than to steel-work of the ship are provided with earthing connections equivalent to the 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 and how the generator is driven *Emergency Run: Boat Deck Amidships & outboard from the Emergency Switchboard in same Room. Generator driven by a direct-coupled Diesel Paraffin Engine.*

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 *4.7 on Decks Dup proof in Eng & Boiler Rooms.* 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

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

how are the cables led

where are the controlling switches situated

Searchlight Lamps, No. of *1*, whether fixed or portable *1*, are their fittings as per Rule *1*

Arc Lamps, other than searchlight lamps, No. of *1*, are their live parts insulated from the frame or case *1*, are their fittings as per Rule *1*

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 *as far as possible.*

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

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office

PARTICULARS OF GENERATING PLANT.

Table with columns: 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). Rows include MAIN, AUXILIARY, EMERGENCY, and ROTARY TRANSFORMER.

LIGHTING AND HEATING CONDUCTORS.

Table with columns: Ref. No., DESCRIPTION, No. of Conductors, Effective Area of each Conductor, COMPOSITION OF STRAND (No., Diameter), Total Maximum Current, Approximate Length, Insulated with, HOW PROTECTED. Rows include MAIN GENERATOR, AUXILIARY GENERATOR, EMERGENCY GENERATOR, ROTARY TRANSFORMER, AUXILIARY SWITCHBOARDS, ENGINE ROOM & BOILER ROOM, WIRELESS, SEARCHLIGHT, MASTHEAD LIGHT, SIDE LIGHTS, COMPASS LIGHTS, POOP LIGHTS, CARGO LIGHTS, ARC LAMPS, HEATERS.

MOTOR CONDUCTORS.

Table with columns: Ref. No., DESCRIPTION, No. of Motors, Effective Area of each Conductor, COMPOSITION OF STRAND (No., Diameter), Total Maximum Current, Approximate Length, Insulated with, HOW PROTECTED. Rows include 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.

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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



Electrical Engineers.

Date

19/3/25

COMPASSES.

Distance between electric generators or motors and standard compass Nearest Generator 223 ft Nearest Motor 22 ft

Distance between electric generators or motors and steering compass Nearest Generator 222 ft Nearest Motor 15 ft

The nearest cables to the compasses are as follows:—

A cable carrying 46 Amperes 22 feet from standard compass 20 feet from steering compass.

A cable carrying 13 Amperes 22 feet from standard compass 20 feet from steering compass.

A cable carrying 8 Amperes 19 feet from standard compass 13 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.

See above

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, materials & workmanship good. Tests & running trials satisfactory.

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

J.W.D. 27/3/25

See later F.E. Ppt 13 on allow Elec 16/3/25. Total Capacity of Generators 4000 Kilowatts

The amount of Fee ... £ See Mchly : 28-2-19-25 When applied for, Travelling Expenses (if any) £ Just Entry Report 19 When received,

William Butler Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 9. 22. - Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)