

Rpt. 13.

No. 16791

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

AUG 27 1937

Date of writing Report 23rd August 1937 When handed in at Local Office 26th August 1937 Port of SouthamptonNo. in Survey held at Southampton Date, First Survey 29th June 1937 Last Survey 26th August 1937

Reg. Book.

on the Yacht "Yadorna"

(Number of Visits 8)

Tons { Gross 226.25
Net 143.23

Built at Southampton By whom built J. I. Thornycroft & Co. Ltd. Yard No. 1172 When built 1937

Owners Port belonging to Amsterdam

Electric Light Installation fitted by J. I. Thornycroft & Co. Ltd. Contract No. 1172 When fitted 1937

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wires

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 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 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 Yes

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. Small 2 Kw at aft end of Engine room driven by St. main Engine.

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 Aft End of Engine 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 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 Yes

and is the frame effectively earthed Yes 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

2 Switches and fuses. Automatic Circuit Breaker with overload reverse trip

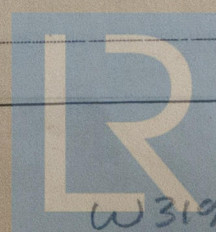
Instruments on main switchboard 2 ammeters 3 voltmeters synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

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



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Lloyd's Register

W319-0021 (1/2)

Cables: Single, twin, concentric, or multicore Single are the cables insulated and protected as per Tables IV, V, XI or XIII of the Rules Yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4.3 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 Secured to galvanized cable trays and to ship's structure by brass clips

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 spaced as per Table VIII 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 Joint boxes fitted where necessary

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 Lead or fibre

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Yes, 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 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

Secondary Batteries, are they constructed and fitted as per Rule 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 No, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected No, how are the cables led Yes, where are the controlling switches situated Yes

Searchlight Lamps, No. of One, whether fixed or portable Portable, are their fittings as per Rule Yes

Arc Lamps, other than searchlight lamps, No. of Yes, are their live parts insulated from the frame or case Yes, 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 fore and aft Yes 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 Yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes and Yes

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 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. | Amperes. | Revs. per Min. | | Fuel Used. | Flash Point of Fuel. |
| MAIN | One | 16 | 110 | 145.5 | 1000 | Heavy Oil Engine | Heavy Oil | Above 100° F. |
| AUXILIARY | One | 2 | 110 | 18.2 | 157/1025 | V. belt from Main Engine | | |
| EMERGENCY | | | | | | | | |
| ROTARY TRANSFORMER | | | | | | | | |

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

| DESCRIPTION. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | Approximate Length (Lead and Return) Feet. | Insulated with | HOW PROTECTED. |
|-----------------------|---------------|--|------------------------|-----------|------------------------|-------|--|----------------|----------------|
| | No. per Pole. | Total Effective Area per Pole Sq. Ins. | No. | Diameter. | In Circuit. | Rule. | | | |
| MAIN GENERATOR | 1 | .12 | 27 | .083 | 145.5 | 184 | 40 | Rubber | Cat. Type |
| EQUALISER CONNECTIONS | | | | | | | | | |
| AUXILIARY GENERATOR | 1 | .007 | 7 | .036 | 18.2 | 24 | 20 | Rubber | L.A. Sheath. |
| EMERGENCY GENERATOR | | | | | | | | | |
| BOILER ROOM MOTOR | 1 | .06 | 19 | .064 | 43.8 | 83 | 20 | * | * |
| TRANSFORMER GENERATOR | 1 | .06 | 19 | .064 | 43.8 | 83 | 20 | * | * |
| ENGINE ROOM | 1 | .045 | 4 | .029 | 10 | 15 | 20 | * | * |
| BOILER ROOM | | | | | | | | | |
| AUXILIARY GENERATOR | 1 | .004 | 4 | .036 | 17.5 | 24 | 120 | * | * |
| Navigation (Fore) | 1 | .0225 | 4 | .064 | 36 | 46 | 150 | * | * |
| Motors (Fore) | 1 | .0225 | 4 | .064 | 42 | 46 | 45 | * | * |
| Heating (Aft) | 1 | .0225 | 4 | .064 | 41 | 46 | 120 | * | * |
| ACCOMMODATION (Fore) | 1 | .0445 | 4 | .029 | 8.6 | 16 | 180 | * | * |
| (Aft) | 1 | .0445 | 4 | .029 | 13.7 | 24 | 120 | * | * |
| WIRELESS | 1 | .003 | 3 | .036 | 5 | 10 | 120 | * | * |
| SEARCHLIGHT | 1 | .003 | 3 | .036 | 9.1 | 10 | 130 | * | * |
| MASTHEAD LIGHT | 1 | .015 | 1 | .044 | 0.36 | 5 | 150 | * | * |
| SIDE LIGHTS | 1 | .015 | 1 | .044 | 0.36 | 5 | 80 | * | * |
| COMPASS LIGHTS | 1 | .015 | 1 | .044 | 0.14 | 5 | 60 | * | * |
| POOP LIGHTS | | | | | | | | | |
| CARGO LIGHTS | | | | | | | | | |
| ARC LAMPS | 1 | .045 | 4 | .029 | 10.6 | 15 | 10 | * | * |
| HEATERS | | | | | | | | | |

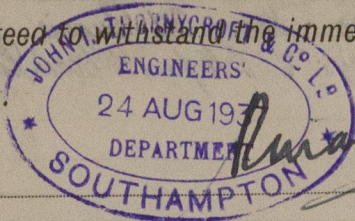
MOTOR CONDUCTORS.

| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | Approximate Length (Lead and Return) Feet. | Insulated with | HOW PROTECTED. |
|------------------------|----------------|---------------|--|------------------------|-----------|------------------------|-------|--|----------------|----------------|
| | | No. per Pole. | Total Effective Area per Pole Sq. Ins. | No. | Diameter. | In Circuit. | Rule. | | | |
| BALLAST PUMP | | | | | | | | | | |
| MAIN BILGE LINE PUMPS | | | | | | | | | | |
| GENERAL SERVICE PUMP | 1 | 1 | .07 | 4 | .044 | 23.5 | 31 | 120 | Rubber | L.A. Sheath. |
| EMERGENCY BILGE PUMP | | | | | | | | | | |
| SANITARY PUMP | | | | | | | | | | |
| SEA WATER PUMPS | 1 | 1 | .0015 | 1 | .044 | 3.5 | 5 | 40 | * | * |
| FRESH WATER PUMPS | | | | | | | | | | |
| AIR COMPRESSOR | | | | | | | | | | |
| FRESH WATER PUMP | 1 | 1 | .0015 | 1 | .044 | 4.7 | 5 | 45 | * | * |
| ENGINE TURNING GEAR | | | | | | | | | | |
| ENGINE REVERSING GEAR | | | | | | | | | | |
| LUBRICATING OIL PUMPS | | | | | | | | | | |
| OIL FUEL TRANSFER PUMP | 1 | 1 | .007 | 4 | .036 | 15.9 | 24 | 45 | * | * |
| WINDLASS | 1 | 1 | .03 | 19 | .044 | 50 | 58.53 | 255 | * | * |
| WINCHES, FORWARD | | | | | | | | | | |
| WINCHES, AFT | | | | | | | | | | |
| STEERING GEAR | | | | | | | | | | |
| (a) MOTOR GENERATOR | | | | | | | | | | |
| (b) MAIN MOTOR | 1 | 1 | .08 | 7 | .044 | 28 | 31 | 225 | * | * |
| WORKSHOP MOTOR | | | | | | | | | | |
| VENTILATING FANS | 2 | 1 | .0015 | 1 | .044 | 2.5 | 5 | 90 | * | * |
| Capstan | 1 | 1 | .007 | 4 | .036 | 20 | 24 | 125 | * | * |
| Hot Water Pump | 2 | 1 | .0015 | 1 | .044 | 3.4 | 5 | 42 | * | * |
| Oil Fuel Unit | 1 | 1 | .0015 | 1 | .044 | 2.8 | 5 | 60 | * | * |
| Refrigerating Unit | 1 | 1 | .003 | 3 | .036 | 5 | 10 | 110 | * | * |
| Kilometer Plant | 1 | 1 | .0015 | 1 | .044 | 3.45 | 5 | 110 | * | * |
| Cargo Hoist Plant | 1 | 1 | .0015 | 1 | .044 | 5 | 5 | 100 | * | * |

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 24/8/37

COMPASSES.

Distance between electric generators or motors and standard compass 34 ft

Distance between electric generators or motors and steering compass 22 ft

The nearest cables to the compasses are as follows:—

A cable carrying 3.3 Ampères 12 feet from standard compass 6 feet from steering compass.

A cable carrying 3 Ampères 20 feet from standard compass 11 feet from steering compass.

A cable carrying 1 Ampères 1 feet from standard compass 1 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 1/2 degrees on all course in the case of the standard compass, and 1/2 degrees on all course in the case of the steering compass.



Builder's Signature.

Date 24/8/37

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 has been fitted in accordance with the approved plans and the Rules. It has been tried under working conditions and proved satisfactory.

Noted

4/9/37

Total Capacity of Generators 18 Kilowatts.

The amount of Fee ...

£ 16-10

When applied for,

26/8/37.

When received.

Travelling Expenses (if any) £

8-9-37

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 7 SEP 1937

Assigned

See also FE int