

# YACHT.

21537

Rpt. 13.

No. 16791

## REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office AUG 27 1937

Date of writing Report 23<sup>rd</sup> August 1937 When handed in at Local Office 26<sup>th</sup> August 1937 Port of Southampton

No. in Survey held at Southampton Date, First Survey 29<sup>th</sup> June 1937 Last Survey 26<sup>th</sup> August 1937  
Reg. Book. (Number of Visits 8)

on the Yacht "Yadorna" 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

Position of Generators Starboard side of Engine room. Small 2 Kw at aft end of Engine room driven by Steam Engine. Are the lubricating arrangements of the generators as per Rule Yes

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

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

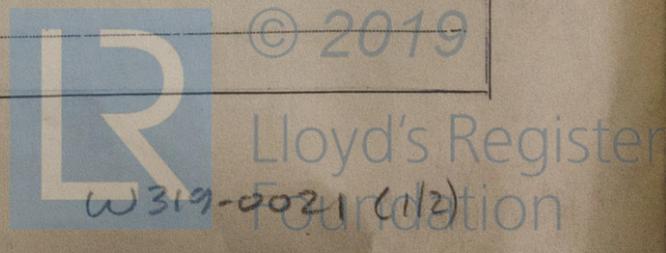
Instruments on main switchboard 2 ammeters 3 voltmeters synchronising device for paralleling purposes.

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



**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 Ships 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 None, 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.		Insulated with	HOW PROTECTED.
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.		
MAIN	One	16	110	145.5	1000	Heavy Oil Engine	Heavy Oil	Rubber	Lead Sheath	
AUXILIARY	One	2	110	18.2	157/1095	V. belt from Main Engine		Rubber	Lead Sheath	
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	.2	87	.083	145.5	184	40	Rubber	Lead Sheath
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	.007	7	.036	18.2	24	20	Rubber	Lead 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	.0445	4	.029	13.7	24	120	*	*
BOILER ROOM									
AUXILIARY GENERATOR	1	.007	7	.036	18.2	24	20	Rubber	Lead Sheath
Navigation	1	.007	7	.036	18.2	24	20	Rubber	Lead Sheath
Stations (Fore)	1	.0225	4	.014	4.1	46	150	*	*
Motors (Fore)	1	.0225	4	.014	4.1	46	150	*	*
Heating (Aft)	1	.0225	4	.014	4.1	46	150	*	*
ACCOMMODATION (Fore)	1	.0445	4	.029	13.7	24	120	*	*
(Aft)	1	.0445	4	.029	13.7	24	120	*	*
WIRELESS	1	.003	3	.036	5	10	120	*	*
SEARCHLIGHT	1	.003	3	.036	5	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	0.36	5	60	*	*
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS	1	.003	3	.036	5	10	40	*	*

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	7	.044	23.5	31	120	Rubber	Lead Sheath
EMERGENCY BILGE PUMP										
SANITARY PUMP										
SEA WATER PUMPS	1	1	.0015	1	.044	3.5	5	40	*	*
CIRC. 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	7	.036	15.9	24	45	*	*
WINDLASS	1	1	.03	19	.044	50	58.5	255	*	*
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	.07	7	.044	23.5	31	225	*	*
WORKSHOP MOTOR										
VENTILATING FANS	2	1	.0015	1	.044	2.5	5	90	*	*
Capstan	1	1	.007	7	.036	15.9	24	225	*	*
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	.005	3	.036	5	10	110	*	*
Kilometer Plant	1	1	.0015	1	.044	3.45	5	110	*	*
Cum gratia 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.



*Thornycroft*  
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 *✓* 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 *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.



*Thornycroft*  
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*

*Noted 4/9/37*

Total Capacity of Generators *18* Kilowatts.

The amount of Fee ... £ *16-10* When applied for, *26/8/37.*

Travelling Expenses (if any) £ *8-9-37* When received, *28/10/37*

*W. Collins*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE 7 SEP 1937*

Assigned *See above FE mt*

2m.331.—Transfer  
The Surveyors are requested not to write on or below the space for Committee's Minute.



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