

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

JUL 28 1937

Date of writing Report 28th June 1937 When handed in at Local Office 10.7.1937 Port of Glasgow
 No. in Survey held at Greenock Date, First Survey 19.5.37 Last Survey 30.6.1937
 Reg. Book. 33558 on the M.V. "SERENITY" Tons { Gross
 Net
 Built at Greenock By whom built George Brown & Co. Ltd Yard No. 201 When built 1937
 Owners J. V. Eward & Co. Ltd Port belonging to London
 Electric Light Installation fitted by Claird Hamilton Ltd Contract No. 201 When fitted 1937
 Is the Vessel fitted for carrying Petroleum in bulk no.

System of Distribution Two wirePressure of supply for Lighting 110 volts, Heating — volts, Power 110 volts.Direct or Alternating Current, Lighting Direct Power DirectIf 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 YesGenerators, do they comply with the requirements regarding temperature rise Yes, are they compound wound Yesare 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 YesHave certificates of test results for machines under 100 kw. been submitted and approved Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing —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 YesPosition of Generators In Engine Room bottom platform, is the ventilation Yesin way of the generators satisfactory Yes are they clear of all inflammable material Yes if situated near unprotectedwoodwork 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 YesEarthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and their respective generatorsin metallic contact Yes Main Switch Boards, where placed In Engine RoomIf 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 mechanicalinjury and damage from water, steam or oil Yes, if situated near unprotected woodwork or other combustible material, state distance of samehorizontally from or vertically above the switchboards — and —, are they constructed wholly of durable, non-ignitable non-absorbentmaterials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance Yesis it of an approved type Yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or othernon-hygroscopic insulating material, and the slab similarly insulated from its framework Indians, is the non-hygroscopic insulating material of an approvedtype Yes, and is the frame effectively earthed Yes Are the fittings as per Rule regarding: — spacing or shielding of live partsYes, accessibility of all parts Yes, absence of fuses on back of board Yes, temperature rise ofomnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the"off" position no are all screws and nuts securing connections effectively locked Yes are any fuses fitted on the live side ofswitches no Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switchesD.P. switch & fuses for each generator. 2 S.P. circuit breakers for which circuit. S.P. switch & D.P. fuses for all other outgoing circuits.Are turbine driven generators fitted with emergency trip switch as per rule — Are cupboards or compartments containing switchboards composed offire-resisting material or lined with approved material — Instruments on main switchboard one ammeters onevoltage — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

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, Yes have the reverseddo these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type Yes

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current protection devices been tested under working conditions 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, X or XI of the Rules Yes
If the cables are insulated otherwise than as per Rule, are they of an approved type 3 1/2 in **Fall of Pressure, state maximum between bus bars and**
any point of the installation under maximum load Yes **Cable Sockets, are the ends of all cables having a sectional**
area of 0.04 square inch and above provided with soldering sockets Yes **Paper Insulated and Varnished Cambric Insulated Cables.**
If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with
insulating compound Yes, or waterproof insulating tape Yes **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 Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit Yes
Support and Protection of Cables, state how the cables are supported and protected Main cables through hold, cables in machinery
space V.I.R. braided in conduit Accommodation R.C.
If cables are run in wood casings, are the casings and caps secured by screws 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, are the cables and fittings in accordance with the special requirements
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 Lead
Earthing Connections, state what earthing connections are fitted and their respective sectional areas Lead covering of cables bonded
earthed
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**
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
are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected Yes
Yes, how are the cables led Yes
where are the controlling switches situated Yes
are all fittings suitably ventilated Yes, are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials Yes
Heating and Cooking Appliances, are they constructed and fitted as per Rule Yes, are air heaters constructed and fitted as per Rule Yes
Searchlight Lamps, No. of Yes, whether fixed or portable Yes, 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 Wichos. Yes Steam, better ho. 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
Yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes and Yes
have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing 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 are all fuses of the filled cartridge type Yes are they of an approved type Yes
If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office Yes
Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule Yes

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 ...	1	14	110	127	1000	Oil Engine	Diesel Oil	Above 150° F	
AUXILIARY ...	1	5.75	110	62	1000	do	do	do	
EMERGENCY ...									
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR ...	1	.15	37	.072	127	152	40	Rubber.	V.I.R. in Conduit.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR ...	1	.03	19	.044	52	53	40	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER } MOTOR									
} GENERATOR...									
ENGINE ROOM...	1	.002	3	.029	3	7.8	15	"	"
BOILER ROOM...									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION ...	1	.002	3	.029	5	7.8	30	"	"
NAVIGATION	1	.002	3	.029	2.5	7.8	120	"	"
WIRELESS									
SEARCHLIGHT ...	1	.002	3	.029	36	7.8	120	"	Bonded to R.C.
MASTHEAD LIGHT ...	1	.002	3	.029	36	7.8	30	"	R.C.
SIDE LIGHTS ...	1	.002	3	.029	10	7.8	25	"	R.C.
COMPASS LIGHTS									
POOP LIGHTS ...									
CARGO LIGHTS D.B.	1	.003	3	.036	4	12	30	"	V.I.R. in Conduit
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
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	1	1	.15	37	.072	70	152	50	Rubber	Conduit
WINCHES, FORWARD										
WINCHES, AFT	1	1	.15	37	.072	70	152	150	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR...										
(b) MAIN MOTOR	1	1	.0225	7	.064	36	46	120	"	"
WORKSHOP MOTOR										
VENTILATING FANS										

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

For **CLAUD HAMILTON, LIMITED**

A. L. Limerick

MANAGER

Electrical Engineers.

Date

1/7/37

COMPASSES.

Distance between electric generators or motors and standard compass

6 feet (steering gear motor)

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying 36 Amperes — feet from standard compass 6 feet from steering compass.

A cable carrying 10 Amperes — feet from standard compass 6 feet from steering compass.

A cable carrying — Amperes — 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 — degrees on — course in the case of the standard

compass, and 1/2 degrees on any course in the case of the steering compass.

For and on behalf of
GEORGE BROWN & CO, (MARINE) LTD.

Geo. A. Brown

Director.

Builder's Signature.

Date

6.7.37

Is this installation a duplicate of a previous case ☒ If so, state name of vessel —

General Remarks (State quality of workmanship, opinions as to class, &c.)

The electrical equipment of

this vessel has been fitted on board under special survey, tested under full working conditions & found satisfactory. The materials & workmanship are good.

10/7/37

*Noted
Yours
30.7.37*

Total Capacity of Generators 19.75 Kilowatts.

The amount of Fee ...

£

17

:

17

:

6

argh.

Travelling Expenses (if any) £

:

6

:

28.8.37

19

30/8

50

Committee's Minute **GLASGOW 27 JUL 1937**

Assigned **TRANSMIT TO LONDON**

A. A. Afford

Surveyor to Lloyd's Register of Shipping.