

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

MAY -7 1937

Received at London Office.....

Date of writing Report 26th April 1937 When handed in at Local Office 6th May 1937 Port of Leith

No. in Survey held at Leith Date, First Survey 23rd Jan^y Last Survey 29th April 1937

Reg. Book. 89318 on the s/s "MULUBINBA" (Number of Visits.....12.....)

Tons { Gross 1262
Net 449

Built at Leith By whom built Henry Robb Ltd Yard No. 234 When built 1937

Owners Newcastle & Hunter River S.S. Co. Ltd Port belonging to Newcastle N.S.W.

Electric Light Installation fitted by Henry Robb Ltd Contract No. - When fitted 1937

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wire parallel

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 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 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 In Engine Room starboard side

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 No woodwork near

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 Adjacent to dynamos on forward bulkhead in Eng. 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 No woodwork near

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 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 D.P. circuit breakers

with overload trips for each dynamo. D.P. fuses & D.P. change over switches for each circuit

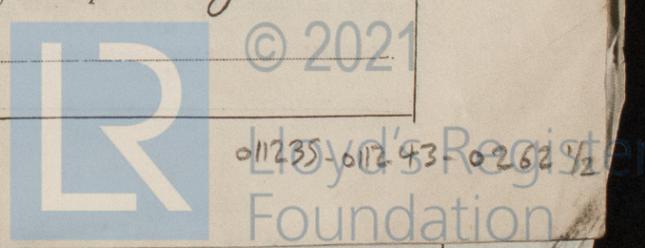
Instruments on main switchboard two ammeters two voltmeters ✓ synchronising device for paralleling purposes.

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

set of bus bars with two S.P. switches & D.P. fuses to each set.

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 6 Volts on motor coils, 3 Volts on lighting

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 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

Support and Protection of Cables, state how the cables are supported and protected Lead alloy sheathed, in accommodation, clipped to

Ship's structure with brass saddles. In holds & on fragile braced cables in Conduit. In E+B spaces partly braided cable in conduit & partly lead alloy sheathed braided overall saddled to tray.
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 In junction boxes with mechanical connections

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 Earthed bonding clips on metallic sheathing of cables.

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 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 Wigan prismatic bulkhead fittings screwed to deck between beams

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

where are the controlling switches situated yes

Searchlight Lamps, No. of none, 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 No

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 No woodwork near

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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	20 each	110	182	550	Direct coupled Steam Engines.		
AUXILIARY								
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	.12	37	.064	182	189	25 ft. 11 ft. 50 ft. 11 ft. 2	Varnished cam-bric	Lead alloy sheathed braided overall
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM 2	1	.003	3	.036	7.24	10.8	30 ft.	do.	do.
BOILER ROOM 2	1	.003	3	.036	5.09	10.8	90 ft.	do.	do.
AUXILIARY SWITCHBOARDS									
Machinery Spaces	1	.0145	7	.052	15.6	51	14 ft.	do.	do.
ACCOMMODATION									
Midship & Foreward Aft	1	.01	4	.044	21.3	31	220 ft.	Yema C.M.A	Braided in conduit
	1	.01	4	.044	23.81	31	45 ft.	do.	do.
WIRELESS	1	.007	4	.036	10	24	285	do.	do.
SEARCHLIGHT									
MASTHEAD LIGHT	1	.002	3	.029	.36	4.8	272 ft.	do.	do.
SIDE LIGHTS	1	.002	3	.029	.36	4.8	48 ft.	do.	Lead alloy sheathed
COMPASS LIGHTS	1	.002	3	.029	.13	7.8	30 ft.	do.	do.
POOP LIGHTS									
CARGO LIGHTS	1	.0145	7	.052	34.5	37	256 ft.	do.	Braided in conduit
ARC LAMPS									
HEATERS	2	.0145	4	.052	63.8	74	45 ft.	do.	do.

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 Effective 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										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										
Port mechanical										
Stokes motor	1	1	.0145	7	.052	32	51	96 ft.	Varnished lead alloy sheathed	
Star do do	1	1	.0145	7	.052	32	51	42 ft.	Bambric & Braided overall	
Refrigerator	1	1	.003	3	.036	9.25	12	30 ft.	Yema C.M.A	Braided in conduit

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.

Henry Robb Ltd
pp. A. Wilson

Electrical Engineers.

Date

26/4/37

COMPASSES.

Distance between electric generators or motors and standard compass *79 ft.*

Distance between electric generators or motors and steering compass *82 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying *.13* Amperes *on* feet from standard compass *9* feet from steering compass.

A cable carrying *.13* Amperes *9* feet from standard compass *on* 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 *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.

Henry Robb Ltd
pp. A. Wilson

Builder's Signature.

Date

26/4/37

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, etc.)

This Installation has been efficiently fitted on board in accordance with the Rules, the materials & workmanship being sound & good. The wiring of the vessel has been carried out in a satisfactory manner, in accordance with the approved plans.

On completion the installation was found in good order, under full load & working conditions.

Noted

John

14.5.37

Total Capacity of Generators *40* Kilowatts.

The amount of Fee ... £ *25:0:0* { When applied for, *6/5/1937*

Travelling Expenses (if any) £ : : { When received, *26.5.37*

John Houston
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE 25 MAY 1937*

Assigned

See Jth JE 19330



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Foundation