

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office..... 3 JUL 1929

Date of writing Report 6.6.1929 When handed in at Local Office 1.7.1929 Port of GLASGOW.

No. in Survey held at PAISLEY Date, First Survey 26.4.29 Last Survey 7.6.1929  
Reg. Book. (Number of Visits..... 9)

91911 on the S.S. RATA. Tons { Gross 974  
Not

Built at PAISLEY By whom built MESSRS BOWMCHLAN rd No. 481 When built 1929.

Owners THE ANCHOR SHIPPING & FOUNDRY CO. LTD Port belonging to NELSON, N.Z.

Electric Light Installation fitted by MESSRS ARCHD. WATSON & DUNDAS Contract No. 481 When fitted 1929.

System of Distribution Double Wire distribution box system

Pressure of supply for Lighting 110 volts, Heating - volts, Power 110. volts.

Direct or Alternating Current, Lighting Direct Current Power Direct Current.

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 - , 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 Bottom Platform starboard side of engine room

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 metallic half coupling

Main Switch Boards, where placed Adjacent to dynamo.

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 micamite 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 Double pole switches

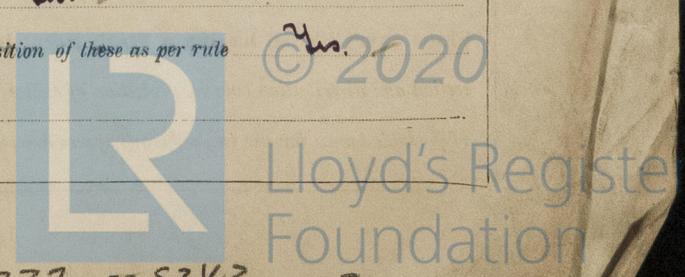
7 fuses for dynamo; and also for each outgoing circuit

Instruments on main switchboard 1 ammeters 1 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 2 earth testing lamps with switches fuses.

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 twin are the cables insulated and protected as per Tables IV or V of the Rules Yes

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 5 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 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 by insulating spacers & lead covered armoured & braided clipped to galv plates etc in accommodation LC, braided clipped to grounds etc.

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 no joints

**Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands W.T. deck tubes - glands fitted

**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 Silber funnels

**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 B lights in holds shallow depth heavy cast fittings 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 B lights in holds, (which may be used for oil in casks) having T.P. insulating links on SWPods, how are the cables led in, where are the controlling switches situated in lamp room on upper Deck.

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

**Arc Lamps,** other than searchlight lamps, No. of 1, 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, 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	7.5	110	60	375	Included steam engine		
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	.0600	19	.064	68	21	V.R.	LC + B.
	EQUALISER CONNECTIONS	-							
	AUXILIARY GENERATOR	-							
	EMERGENCY GENERATOR	-							
	ROTARY TRANSFORMER	-							
	AUXILIARY SWITCHBOARDS	-							
	ENGINE ROOM	2	.0045	7	.029	1075	18	V.R.	LC + B.
	BOILER ROOM	2	.0225	7	.064	2700	60	V.R.	LC + B.
	ACCOMMODATION	2	.0045	7	.029	1075	216	V.R.	LC + B. via pipes
	Cargo Circuit for fore hold.	2	.0030	3	.036	4.5	216	V.R.	
	Cargo Circuit aft.	2	.0045	7	.029	9.2	216	V.R.	
	Forecastle	2	.0045	7	.029	5.5	260	V.R.	
	Shore Connection	2	.0400	19	.052	-	60	V.R.	LC + B.
	Navigation	2	.0030	3	.036	7.1	136	V.R.	
	Refug motor	2	.0030	3	.036	4.0	80	V.R.	
	WIRELESS	2	.0045	7	.029	15	130	V.R.	LC + B.
	SEARCHLIGHT	2	.0020	3	.029	55	230	V.R.	LC + B. via pipes
	MASTHEAD LIGHT	2	.0020	3	.029	55	65	V.R.	LC + B.
	SIDE LIGHTS	2	.0020	3	.029	15	30	V.R.	
	COMPASS LIGHTS	2	.0020	3	.029	15	30	V.R.	
	POOP LIGHTS	2	.0020	3	.029	3.6	40	V.R.	LC + B.
	CARGO LIGHTS	2	.0020	3	.029	3.6	40	V.R.	LC + B.
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	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								

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.

*Breadvan out Dundee*

Electrical Engineers. Date 21-6-29.

**COMPASSES.**

Distance between electric generators or motors and standard compass 28 ft forward 36 ft high  
 Distance between electric generators or motors and steering compass " " 30 "

The nearest cables to the compasses are as follows:—  
 A cable carrying 7.1 Ampères 8 feet from standard compass 6 feet from steering compass.  
 A cable carrying .15 Ampères in feet from standard compass 6 feet from steering compass.  
 A cable carrying .15 Ampères 6 feet from standard compass in 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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

Bow, M. Mackay & Co., Ltd.

*John Parker*

Builder's Signature. Date 24-6-29

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 letted on board under special survey. Tested under full load conditions and found satisfactory. The materials and workmanship were found to be good and sound.)

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

4/7/29

*u.s.*  
1/7/29.

Total Capacity of Generators 7.6 Kilowatts.

The amount of Fee ... £ 7.10.0 : 18/6 19/29.  
 Travelling Expenses (if any) £ : : 20/6 19/29.

*J. Rausin*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 2 JUL 1929

Assigned 8 hrs Light

Im. 238.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)