

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 23 AUG 1928

Date of writing Report 6.7.1928 When handed in at Local Office 27.8.1928 Port of GLASGOW.

No. in Survey held at GLASGOW Date, First Survey 4.6.28 Last Survey 29.6.1928  
Reg. Book. (Number of Visits 9)

4033 S. on the M.V. CLYDEFIELD.

Tons { Gross 6758  
Net

Built at GLASGOW. By whom built D&amp;W. HENDERSON Yard No. 808 When built 1928

Owners MESSRS HUNTING &amp; SON. LTD Port belonging to NEWCASTLE.

Electric Light Installation fitted by MESSRS HARLAND & WOLFF LTD Contract No. 808 When fitted 1928  
(GOVAN)

System of Distribution *Two wire*

Pressure of supply for Lighting *110* volts, Heating *-* 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 *-*, is an adjustable regulating resistance fitted in series with each shunt field *-*

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 *Aft end 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*

Main Switch Board, 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; shielding of live parts *yes*

*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 *D.P. Switch and D.P. Switch with D.P. fuses for each outgoing circuit.*

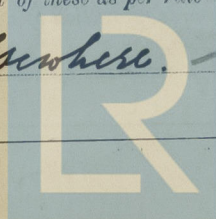
Instruments on main switchboard *3* ammeters *2* voltmeters *-* synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system *Two lamps and two switches across mains, mid point of lamps to earth.*

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*

*Leak cased in accommodation, iron cased elsewhere.*





Cables: Single, twin, concentric, or multi-core both 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 4 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

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 used

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 L.C. in accommodation, main runs

L.D. R. B. Cables run on perforated plating in Engine Rm. and under fore & aft gangway on deck.

If cables are run in wood casings, are the casings and caps secured by screws - , are the cap screws of brass - , are the cables run in separate grooves - . 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 special boxes

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 -

are their connections made as per Rule -

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 -

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, in wheelhouse.

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 none

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 in Pump Rooms, special fittings with gas tight glass globe and galv. wire gasket, how are the cables led L.C. cable run in continuous tubing outside pump rooms.

where are the controlling switches situated outside pump rooms, in accommodation, fitted in special lock up boxes.

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

Arc Lamps, other than searchlight lamps, No. of - , are their live parts insulated from the frame or case - , are their fittings as per Rule -

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 - , if not of this type, state distance of the combustible material horizontally or vertically above the motors - and -

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 -

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 none supplied.

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	15	110	136	340	Open type, Steam Engine	-	-	
AUXILIARY ...	1	25	110	224	450	4 Stroke, 3 Cyls. Oil Engine	-	-	
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. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
2	MAIN GENERATOR S. ...	1 per pole	.120	34	.064	130	44	Rubber	Lead Covered
	EQUALISER CONNECTIONS								
1	AUXILIARY GENERATOR	1 per pole	.300	34	.103	240	116	"	"
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM ...	1 per pole	.0040	4	.036	18	48	Rubber	L.C. Arm & Braided.
	BOILER ROOM ...		.0225	4	.064	46	176	"	"
	ACCOMMODATION		.0045	4	.029	8	410	"	"
	Navigation		.0145	4	.052	34	176	"	"
	Large								
	WIRELESS ... (1 1/2 H.D.)	1 per pole	.0045	4	.029	2	690	Rubber	L.C. Arm & Braided
	SEARCHLIGHT								
2	MASTHEAD LIGHT S. ...	1 per pole	.0020	3	.029	.55	320	"	"
2	SIDE LIGHTS ...			3	.029	.55	100	"	Lead Covered
3	COMPASS LIGHTS ...			3	.029	.30	50	"	"
1	POOP LIGHTS (40w)			3	.029	.55	410	"	L.C. Arm & Braided
2	CARGO LIGHTS (4 lights)			3	.029	2.00	194	"	"
	ARC LAMPS ...								
	HEATERS ...								

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	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 ...	1	.0225	4	.064	43	108	Rubber	L.C. Arm & Braided
	WORKSHOP MOTOR ...								
	VENTILATING FANS ...								
	Valve Grinder	1	.0030	3	.036	3.5	48	"	"
	Travelling Crane	1	.6000	19	.064	61	204	"	"
	Oil Purifiers	2	.0070	4	.036	22	28	"	"
	Refrigerators	1	.0225	4	.064	48	120	"	"
	Brine Pumps	1	.0030	3	.036	4	96	"	"
	Galley Blower	1	.0020	3	.029	2.8	6	"	"



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.

For HARBAND & WOLFF, LTD

John Dickson  
Director

Electrical Engineers.

Date

#### COMPASSES.

Distance between electric generators or motors and standard compass

250 feet.

Distance between electric generators or motors and steering compass

254 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 8 Ampères 6 feet from standard compass 8 feet from steering compass.

A cable carrying 3.4 Ampères 6 feet from standard compass 5 feet from steering compass.

A cable carrying 1.1 Ampères 8 feet from standard compass 8 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 the course in the case of the standard compass, and nil degrees on all the course in the case of the steering compass.

For HARBAND & WOLFF, LTD

John Dickson  
Director

Builder's Signature.

Date

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 on board under special survey. Tested under full working 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.

28

12/9/28.

Total Capacity of Generators 55. Kilowatts.

The amount of Fee ...

£880.00

When applied for,

11.7.28

Travelling Expenses (if any) £

When received,

2/8/28

Committee's Minute

GLASGOW 28 AUG 1928

Assigned

Elec. Light.

J. S. Rankin  
Surveyor to Lloyd's Register of Shipping.



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