

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

RECEIVED JUL 16 1924

Date of writing Report 27-6-1924 When handed in at Local Office 12-7-1924 Port of GLASGOW. Received at London Office

No. in Survey held at GLASGOW Date, First Survey 12-5-24 Last Survey 26-6-1924
Reg. Book. 39247 on the "M. V. GLENBANK" (Number of Visits 7)

Tons { Gross 5151
Not 8200

Built at GOVAN By whom built MESSRS HARLAND & WOLFF Yard No. 655c When built 1924

Owners MESSRS A. WEIR & CO Port belonging to GLASGOW.

Electric Light Installation fitted by MESSRS HARLAND & WOLFF LTD Contract No. 655 When fitted 1924

System of Distribution Two wire
Pressure of supply for Lighting 220 Volts, Heating 220 volts, Power 220 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 overload 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 2 Diesel Driven in parallel is an adjustable regulating resistance fitted in series with each shunt field Yes.

Are all terminals accessible and clearly marked Yes., are they so spaced or shielded that they cannot be accidentally earthed, or short circuited Yes. Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators Port 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 Yes., are the generators protected from mechanical injury and damage from water, steam or oil Yes
are their axis 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 of Engine Rm. over Shunt Recess
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
are they constructed wholly of durable, incombustible 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 connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework Yes, and is the frame effectively earthed Yes.

Are the following fittings as per Rule, viz.:— 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 Triple pole switches

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches
and D.P. Circuit Breakers for Generators and D.P. Change over switches and two S.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 linked S.P. switches across mains, mid point of lamps earthed

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes.

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes.

Insulation of Cables, state type of cables, single or twin *both* are the cables insulated and protected as per Tables III or IV of the Rules. *Yes*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *5.5 volts*

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.007 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 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 *clipped direct to woodwork bulkheads. Run in sheet iron troughing along decks, where exposed to heat moisture P. LSAB used; L.C. elsewhere.*

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 VI *Yes.*

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *—*

Joints in Cables, state if any, and how made, insulated, and protected *In a special joint box*

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 Positions, 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 *All Radiators & bracket Fans are bathed with 3/32" wire, also Cabin Portables, all metal fittings and the lamp holders when a fitting comes on a wood block.* 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 *—*

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*, are separate screens provided for the use of oil and electric side lights *Yes*

are separate oil lanterns provided for the mast head lights and side lights *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 *—*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *—*

how are the cables led *—*

where are the controlling switches situated *—*

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 axis 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 *—* and *—*

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed 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 *—*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *—*

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No of	RATED AT			Revs. per Min.	DRIVEN BY.	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.			Fuel Used.	Flash Point of Fuel.
MAIN	2	65	220	295	300	Diesel Engine	British Mex.	CLOSED 176° F.
EMERGENCY	1	65	220	295	480	Steam		OPEN 150 F.
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.				
	MAIN GENERATOR NO 2 & 3	1 1/2 hole	.5	61	.103"	295	250 (3 leads)	VIR	Fireproofed
	MAIN GENERATOR NO 1	"	.5	61	.103"	295	188 (2 ")	VIR	5°
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	1 1/2 hole	.007	7	.036"	13.6	30	Rubber	L.S.A.B.
	BOILER ROOM								
	WIRELESS	1 1/2 hole	.004	4	.036"	10	132	Rubber	L.S.A.B.
	SEARCHLIGHT								
	MASTHEAD LIGHT	1 1/2 hole	.003	3	.036"	6	660	Rubber	L.S.A.B.
	SIDE LIGHTS	"	.003	3	.036"	6	90	"	"
	COMPASS LIGHTS	"	.003	3	.036"	15	42	"	L.C.
	POOP LIGHTS	"	.003	3	.036"	15	52	"	"
	CARGO LIGHTS	"	.003	3	.036"	3.6	570	"	L.S.A.B.
	ARC LAMPS								
	HEATERS	1 1/2 hole	.003	3	.036"	7.8	66	Rubber	L.C.

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	1	.075	19	.042"	84	180	Rubber	L.S.A.B.
	MAIN BILGE LINE PUMPS	1	.0225	14	.064"	22	120	"	"
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP	1	.04	19	.052"	60	190	Rubber	L.S.A.B.
	CIRC. SEA WATER PUMPS	1	.04	19	.052"	60	190	"	"
	CIRC. FRESH WATER PUMPS	2	.0225	4	.064"	22	120	"	"
	AIR COMPRESSOR	1	.6	91	.093"	350	132	V.I.R.	Fireproofed.
	FRESH WATER PUMP								
	ENGINE TURNING GEAR	2	.06	19	.064"	40	48	Rubber	L.S.A.B.
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	3	.04	19	.052"	31.5	68	Rubber	L.S.A.B.
	OIL FUEL TRANSFER PUMP	1	.04	19	.052"	14	42	"	"
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT	1	.075	19	.072"	46	570	Rubber	L.S.A.B. & L.C.
	STEERING GEAR								
	WORKSHOP MOTOR								
	VENTILATING FANS								
	Hot salt w. pump	1	.003	3	.036"	8.9	240	"	"
	Oil Purifier	1	.003	3	.036"	8.9	96	"	"
	Lathe	1	.003	3	.036"	6.5	82	"	"
	Dull.	1	.003	3	.036"	8.5	86	"	"

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 HARLAND & WOLFF, LTD

John Dickison

Electrical Engineers.

Date 5th July 1924

Managing Director

COMPASSES.

Distance between electric generators or motors and standard compass 90 ft.
 Distance between electric generators or motors and steering compass 18 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 5 Ampères 12 feet from standard compass 6 feet from steering compass.
 A cable carrying 3.4 Ampères 18 feet from standard compass 12 feet from steering compass.
 A cable carrying 1.5 Ampères 12 feet from standard compass 6 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 HARLAND & WOLFF, LTD

John Dickison

Builder's Signature.

Date 5th July 1924

Managing Director.

Is this installation a duplicate of a previous case Yes. If so, state name of vessel M.V. Inverbank.

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 & found satisfactory. The workmanship was found to be good and sound.

Elec. Light.

J.R.

17/7/24

Total Capacity of Generators 195. Kilowatts

The amount of Fee ... £ 36-5-0

When applied for, 9/7/24

Travelling Expenses (if any) £ :

When received, See debit book.

J.R. Rankin.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 15 JUL 1924

Assigned Elec. Light.

W.M.

Imp. 22.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

A.C.
12/7/24



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