

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report **24.1.1929** When handed in at Local Office **25.2.1929** Port of **GLASGOW.** Received at London Office **27 FEB 1929**No. in Survey held at **GLASGOW.** Date, First Survey **6.11.28** Last Survey **23.1.1929**
Reg. Book. (Number of Visits **13**)84796. on the **M.V. STAFFORDSHIRE.** Tons { Gross **10655**
NetBuilt at **GOVAN.** By whom built **THE FAIRFIELD S.B. & E. CO.** Yard No. **630** When built **1929.**Owners **MESSRS THE BIBBY S.S. CO. LTD** Port belonging to **LIVERPOOL.**Electric Light Installation fitted by **MESSRS THE FAIRFIELD S.B. & E. CO. LTD** Contract No. **630** When fitted **1929.**System of Distribution **2 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 generatorWhere more than one generator is fitted are they arranged to run in parallel **YES** ✓, 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 **STARBOARD SIDE. ENGINE ROOM, HOLD LEVEL.**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

NONE ✓ and **NONE** ✓, 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 END OF ENGINE ROOM, LOWER DECK LEVEL.**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 **IN SAME COMPARTMENT**Switchboard, 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 **NONE** ✓ and **NONE** ✓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 **YES** ✓Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches **EACH GENERATOR****HAS 1000 AMP. TRIPLE POLE, 0/L, TIME LAG, REVERSE CURRENT CIRCUIT BREAKER, WITH MAGNETIC BLOWOUTS, THIRD POLE EQUALISER; OUTGOING CIRCUITS HAVE EITHER D.P. 0/L, TIME LAG BREAKERS OR D.P. SWITCHES & FUSES** ✓Instruments on main switchboard **28** ✓ ammeters **4** ✓ 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 WITH SWITCHES & FUSES ON EACH POLE.** ✓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 **SINGLE** 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 **LIGHTING 4.5 VOLTS - POWER 9.1 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** ✓

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. CABLES AND L.A.B. CABLES FIXED ON SHEET IRON PLATES WITH GALV. IRON CLIPS; V.I.R. CABLES IN WOOD CASING.** ✓

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 **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 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 **SHEET LEAD & WOOD** ✓

Earthing Connections, state what earthing connections are fitted and their respective sectional areas **NONE** ✓

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 **EMERGENCY GENERATOR AND SWITCHBOARD IN EMERGENCY DYNAMO RM, BOAT D^{FT} AFT, A DUPLICATE SUPPLY TO EMERGENCY BOARD FROM MAIN BOARD, GENERATOR DRIVEN BY A 60 H.P. 2 CYLINDER HEAVY OIL ENGINE** ✓

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 **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 **NONE** ✓, how are the cables led —

where are the controlling switches situated —

Searchlight Lamps, No. of **1 - 20"** ✓, whether fixed or portable **FIXED** ✓, are their fittings as per Rule **YES** ✓

Arc Lamps, other than searchlight lamps, No. of **NONE** ✓, 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, WHERE POSSIBLE.** ✓, 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 **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 —

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				DRIVEN BY.	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	205	220	930	185	4 CYLINDER. W.H. ALLEN	DIESEL OIL	NOT LESS THAN 150° F.
EMERGENCY	1					DIESEL ENGINE.	"	"
POWER TRANSFORMER						60 H.P.	"	"

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	4	.837	127	.093	930	180	PURE RUBBER	LEAD COVERED
	EQUALISER	1	.837	127	.093			"	"
	EMERGENCY GENERATOR							"	"
	EMERGENCY SWITCHBOARD	2	.196	37	.083	163.5	456	"	"
S6	ENGINE ROOM LIGHTING	2	.06	19	.064	36.68	60	"	"
	POWER ROOM							"	"
S1	CREW FOR ² & RADIATORS	2	.06	19	.064	45.8	690	"	V.I.R. + L.C. + ARMOUR
J2	CABIN ACCOM. BOAT & BRIDGE DE ^{FT} & OFFICERS	2	.10	19	.083	83.5	90	"	V.I.R.
J3	CABIN ACC. BOAT & BRIDGE DE ^{FT} & OFFICERS	2	.06	19	.064	42.27	125	"	"
S4	CREW AFT & LAUNDRY LIGHTING	2	.02	7	.064	12.68	465	"	LEAD COVERED
S5	GALLEY, PANTRY & STORES L ^{TS}	2	.014	7	.052	13.36	240	"	"
J7	FANS & RADIATORS	2	.498	61	.103	236.79	95	"	V.I.R.
SE1	POLICE LIGHTS	2	.039	19	.052	21.13	360	"	V.I.R. + L.C. + ARMOUR
DE2	NAVIGATION LIGHTS	2	.014	7	.052	4.94	750	"	"
	BOAT LIGHTS	2	.014	7	.052	13.6	750	"	"
	WIRELESS	2	.022	7	.064	12.5	400	"	"
	SEARCHLIGHT	2	.06	19	.064	60	480	"	V.I.R.
	MASTHEAD LIGHT							"	"
	SIDE LIGHTS							"	"
	COMPASS LIGHTS							"	"
	POOP LIGHTS							"	"
S8	CARGO LIGHTS	2	.039	19	.052	23.09	115	"	"
	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								
	TURBO BLOWERS	2	3 PER POLE	91	.103	1090	228	PURE RUBBER	LEAD COVERED
	GENERAL SERVICE PUMP	1	.075	19	.072	86	195	"	"
	EMERGENCY BILGE PUMP	1	.039	19	.052	62.5	675	"	L.C. + L.C. + ARMOUR
	SANITARY PUMP	1	.075	19	.072	86	120	"	LEAD COVERED
	JACKET COOLING	2	.246	37	.093	183	255	"	"
	WATER PUMPS	2	.075	19	.072	86	300	"	"
	PISTON COOLING OIL	2	1.0	127	.103	800	200	"	"
	AIR COMPRESSOR	2	.007	7	.036	14	150	"	"
	AUX. ENGINE COOLING	2	.06	19	.064	77	160	"	"
	WATER PUMP	2	.100	19	.083	100	105	"	"
	ENGINE TURNING GEAR	2	.039	19	.052	62	300	"	"
	C.O.2 MACHINES	2	.004	7	.029	17	225	"	"
	LUBRICATING OIL PUMPS	2	.004	7	.029	17	225	"	"
J14	OIL FUEL TRANSFER PUMP	7	1.0	127	.103	925	765	"	V.I.R. + L.C. + ARMOUR
	WINDLASS							"	"
J15	WINCHES, FORWARD	4	.302	37	.103	270	465	"	LEAD COVERED
	WINCHES, AFT & CAPTAINS	2	.147	37	.072	152	405	"	"
	STEERING GEAR							"	"
S9	WORKSHOP MOTOR	7	.100	19	.083	103	180	"	V.I.R.
	VENTILATING FANS	2	.302	37	.103	185	225	"	V.I.R.
S10	WINCHES, NO.5 HATCH	13	.246	37	.093	187.5	175	"	V.I.R.
S11	GALLEY MACHINERY	7	.147	37	.072	150	50	"	LEAD COVERED
S12	ENGINE RM. SMALL MOTORS	8	.06	19	.064	75.4	225	"	"
J13	" " " " " "	2	.196	37	.083	220	135	"	V.I.R.
J16	WINCHES, NO.4 HATCH	6	.06	19	.064	49.4	630	"	LEAD COVERED
	LAUNDRY MACHINERY	1	.06	19	.064	62	90	"	"
JE3	BILGE PUMP	2	.089	19	.052	31	225	"	V.I.R. + L.C. + ARMOUR
JE4	BOAT HOISTS PORT	2	.039	19	.052	31	225	"	"
	" " STARB ^{FT}	2	.039	19	.052	31	225	"	"

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.

E. Skinner Electrical Engineers.

Date *5th February 1929*

COMPASSES.

Distance between electric generators or motors and standard compass *28 FEET FROM FAN MOTOR*

Distance between electric generators or motors and steering compass *66 " " " "*

The nearest cables to the compasses are as follows:—

A cable carrying *.127* Amperes *IN* ~~feet from standard compass~~ ~~feet from steering compass~~.

A cable carrying *.127* Amperes ~~feet from standard compass~~ *IN* ~~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 *any* course in the case of the standard compass, and *nil* degrees on *any* course in the case of the steering compass.

For THE FAIRFIELD S.B. & E. COMPANY, LTD. *gp* 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 load conditions and found satisfactory. The materials and workmanship were found to be good and correct.

It is submitted that this vessel is eligible for THE RECORD.

Elec Light

6.3.29

Total Capacity of Generators *615* Kilowatts

The amount of Fee ... *£46-17-6* : When applied for, *20.2.1929*

Travelling Expenses (if any) £ : : When received, *15/4/29*

Committee's Minute *GLASGOW 26 FEB 1929*

Assigned *Elec Light*

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



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