Rpt. 18. No. 10096.

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office -6 APR 1932

Date of writing Report ..... 19 ... When handed in at Local Office -4 APR. 1932 Port of LIVERPOOL

No. in Reg. Book. 00398 Survey held at Ellesmere Port. Date, First Survey 25/2/32 Last Survey 7/3/ 1932 (Number of Visits 4)

on the Steel Barge. "British Girl" Tons Gross 33 Net 33

Built at Northwich By whom built W. J. Yarwood & Sons Ld Yard No. 370 When built 1927

Owners Shell Mex & B.P. Ltd Port belonging to Manchester.

Electric Light Installation fitted by W. J. Yarwood & Sons Ld. Contract No. 370 When fitted 1927

System of Distribution Double wire

Pressure *of supply for* **Lighting** 110/100. *volts,* **Heating** 110 *volts,* **Power** — *volts.*

Direct or Alternating Current, Lighting Direct **Power** —

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 Dynamo in Engine room aft.

Is the ventilation in way of the generators satisfactory Yes, *are they clear of all inflammable material* no

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 Boards, *where placed* on thwartship bulkhead in dynamo 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, *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* 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* Main D.P. Switch fuses on dynamo. D.P. switches & fuses on all outgoing circuits. All switches & fuses in steel gas tight cases.

Instruments *on main switchboard* 1 *ammeters* 1 *voltmeters* *synchronising device for paralleling purposes.* and 1 " 1 " for 12V emergency circuit now fitted

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

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 *or* V *of the Rules* yes

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

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* —

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* All cables throughout are lead covered in galvanised steel tubing with screwed joints

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 —

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* none made.

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* —, *state the material of which the bushes are made* —

Earthing Connections, *state what earthing connections are fitted and their respective sectional areas* yes

yes, *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* 12 V emergency lighting circuits run from battery. feeding lights for navigation, anchor light not under control lights as req'd by the B.O.T. & the Manchester Ship Canal Co

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* —

has each navigation lamp an automatic indicator as per Rule —.

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* Gas tight.

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 yes

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.

—, *how are the cables led* in galvanised steel Gastight tubing

where are the controlling switches situated in dynamo engine room

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* —, *are the coils self-contained and readily removable for replacement* —, *are the brushes, brush holders, terminals and lubricating arrangements as per Rule* —, *are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material* —, *are they protected from mechanical injury and damage from water, steam or oil* —, *are their axes of rotation fore and aft* —, *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 ~~yes~~ none fitted

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT Kilowatts.	Volts.	Ampères.	Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. Fuel Used.	Flash Point of Fuel.
MAIN	1	2·3	100/110	23	750	Single cylinder Paraffin engine Petrol used for starting		
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND. No.	Diameter.	Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	MAIN GENERATOR	2	·02214	7	·064	23	18	V.I.R	L C in galvanised tubing
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	~~ENGINE~~ Dynamo ROOM	2	·00455	7	·029	3·0	8	Do	Do
	BOILER ROOM								
	ACCOMODATION — T.O.J.B. feeding the foll.	2	·02214	7	·064	13·0	160	Do	Do
	1 light	2	·00194	3	·029	·5	6	Do	Do
	1 oven	2	·02214	7	·064	10·0	10	Do	Do
	1 Kettle.	2	·00455	7	·029	2·0	12	Do	Do
	WIRELESS	—							
	SEARCHLIGHT	—							
	MASTHEAD LIGHT	—							
	SIDE LIGHTS	2	·00194	3	·029	·4	40	Do	Do
	COMPASS LIGHTS	—							
	~~STERN~~ LIGHTS	2	·00194	3	·029	·4	12	Do	Do
	~~STERN~~ NOT UNDER control LIGHTS	2	·00194	3	·029	·4	50	Do	Do
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

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

FOR THE MANCHESTER DRY DOCKS CO., LTD. John Scott Manager

For W. J. YARWOOD & SONS, LTD.

W. D. Yarwood. DIRECTOR.

Electrical Engineers. Date 31/3/32.

COMPASSES.

Distance between electric generators or motors and standard compass —

Distance between electric generators or motors and steering compass —

The nearest cables to the compasses are as follows :—

A cable carrying — *Ampères* — *feet from standard compass* — *feet from steering compass.*

A cable carrying — *Ampères* — *feet from standard compass* — *feet from steering compass.*

A cable carrying — *Ampères* — *feet from standard compass* — *feet from steering compass.*

Have the compasses been adjusted with and without the electric installation at work at full power —

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted —

The maximum deviation due to electric currents was found to be — *degrees on* — *course in the case of the standard compass, and* — *degrees on* — *course in the case of the steering compass.*

For W. J. YARWOOD & SONS, LTD.

W. D. Yarwood. 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 barge had not had notation "elec light" The original installation was fitted by Messrs Yarwood & Sons Ld Northwich. This report embodies the original installation & in addition the wiring for extra circuits to comply with the requirements of the B.O.T, the Manchester Ship Canal & the Societys Rules. The latter part of the installation has been fitted (under survey) by the Manchester ~~Ship~~ Dry Docks at Ellesmere Port & has been signed for by Mr J Scott - manager. The completed installation has been tested in accordance with the requirements and the barge is eligible in my opinion for notation. "elec light."

Total Capacity of Generators 2.3 *Kilowatts.*

The amount of Fee ... ... £ 3 : 0/0 — When applied for, -5 APR. 1932

Travelling Expenses (if any) £ —: 15/0 — When received, 19th Apl. 1932

W. T. Badger.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL -5 APR. 1932

Assigned Elec: Light.

1m,2,28.—Transfer.

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