

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

5 JAN 1942

Received at London Office.....

Date of writing Report. 18th Decemr 1941 When handed in at Local Office. 21.1.42 Port of Grimsby

No. in Survey held at Gainsborough Date, First Survey 21-10-41 Last Survey 14th Decemr 1941
Reg. Book. "EMPIRE RIVER" (Number of Visits.....)

on the "EMPIRE RIVER" Tons { Gross 319.74 Net 149.78

Built at Gainsborough By whom built J. & W. Watson (Gainsborough) Ltd Yard No. 1521 When built 1941

Owners Ministry of War Transport Port belonging to London

Electrical Installation fitted by The Sunderland Forge & Eng Co, Ltd Contract No. B839 When fitted 1941

Is vessel fitted for carrying Petroleum in bulk. No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. Yes

Have plans been submitted and approved. Yes System of Distribution Parallel Constant Pressure 2 wire Voltage of supply for Lighting 110

Heating Power Direct or Alternating Current, Lighting Direct Power If Alternating Current state frequency Prime Movers, Yes

has the governing been tested and found efficient when the whole load is suddenly thrown on and off. Yes Are turbine emergency governors fitted with a trip switch as per Rule. Yes

Generators, are they compound wound. Yes, are they level compounded under working conditions. Yes

if not compound wound state distance between generators. and from switchboard. Where more than one generator is fitted are they arranged to run in parallel. No

are shunt field regulators provided. Yes Is the compound winding connected to the negative or positive pole. Negative

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing. Yes Have certificates of test for machines under 100 kw. been supplied. Yes

and the results found as per rule. Yes Are the lubricating arrangements and the construction of the generators as per rule. Yes

Position of Generators Starboard side engine room

is the ventilation in way of generators satisfactory. Yes are they clear of inflammable material. Yes

if situated near unprotected combustible material state distance from same horizontally. and vertically. are the generators protected from mechanical injury and damage from water, steam and oil. Yes

are the bedplates and frames earthed. Yes and the prime movers and generators in metallic contact. Yes

Switchboards, where are main switchboards placed. Engine Room, Adjacent to Generators

are they in accessible positions, free from inflammable gases and acid fumes. Yes, are they protected from mechanical injury and damage from water, steam and oil. Yes

if situated near unprotected combustible material state distance from same horizontally. and vertically. what insulation material is used for the panels. Sindanga

if of synthetic insulating material is it an Approved Type. Yes, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule. Yes

Is the frame effectually earthed. Yes

Is the construction as per Rule. Yes, including accessibility of parts. Yes, absence of fuses on the back of the board. Yes, individual fuses to pilot and earth lamps, voltmeters, etc. Yes

locking of screws and nuts. Yes, labelling of apparatus and fuses. Yes, fuses on the "dead" side of switches. Yes

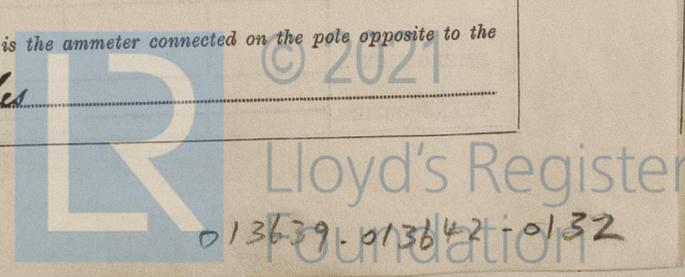
Description of Main Switchgear for each generator and arrangement of equaliser switches. Double pole knife switch

and for each outgoing circuit. 2 double pole change over switches & fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. Yes Instruments on main switchboard 4

ammeters 2 voltmeters 2 synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection. Yes

Earth Testing, state means provided. Earth lamps & switches



Switches, ~~Circuit Breakers~~ and Fuses, are they as per Rule yes, are the fuses an approved type yes, are all fuses labelled as per Rule yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection ✓, have they been tested under working conditions ✓. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule yes. Cables, are they insulated and protected as per the appropriate Tables of the Rules yes, if otherwise than as per Rule are they of an approved type ✓, state maximum fall of pressure between bus bars and any point under maximum load 1.29 volts are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends ✓ with insulating compound ✓, or waterproof insulating tape ✓. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage yes, are cables laid under machines or floorplates No, if so, are they adequately protected ✓. Are cables in machinery spaces, galleys, laundries, etc., lead covered yes & run in conduit Inductively. State how the cables are supported and protected. Slipped to steel & wood work In conduits through holds
Slipped to trays in engine room

Are all lead sheaths, armouring and conduits effectually bonded and earthed yes. Refrigerated chambers, are the cables and fittings as per Rule None. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands yes, where unarmoured cables pass through beams, etc., are the holes effectually bushed yes and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes. Emergency Supply, state position ✓ and method of control ✓. Navigation Lamps, are they separately wired yes, controlled by separate double pole switches yes and fuses yes. Are the switches and fuses in a position accessible only to the officers on watch yes, is an automatic indicator fitted No. Secondary Batteries, are they constructed and fitted as per Rule None, are they adequately ventilated ✓. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present No, if so, how are they protected ✓ and where are the controlling switches fitted ✓, are all fittings suitably ventilated yes, are all fittings and accessories constructed and installed as per Rule yes. Searchlight Lamps, No. of None, whether fixed or portable ✓, are their fittings as per Rule ✓. Heating and Cooking, is the general construction as per Rule None, are the frames effectually earthed ✓, are heaters in the accommodation of the convection type ✓. Motors, are all motors constructed and installed as per Rule ✓ and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil ✓, if situated near unprotected combustible material state minimum distance from same horizontally ✓ and vertically ✓. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing ✓. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule ✓. Control Gear and Resistances, are they constructed and fitted as per Rule ✓. Lightning Conductors, where required are they fitted as per Rule ✓. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with ✓, are all fuses of the cartridge type ✓ are they of an approved type ✓. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type ✓. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule yes, are they suitably stored in dry situations yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory 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.
MAIN ...	2	4	110	36.36	1400	4 BHP Vertical diesel Injection engines	Heavy oil Above 150° F.
EMERGENCY ...							
ROTARY TRANSFORMER							

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel For Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	4	One	7/0.064	36.36	46	14'-0"	HRB	In conduit
" " EQUALISER ...	4	One	7/0.064	36.36	46	8'-0"	HRB	In conduit
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR ...								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS ...						
Navigation		One 7/0.064	1.45	24	48	HRB In conduit
Accommodation		One 7/0.036	11.92	24	30	HRB " "
Washhead light		One 1/0.044	36	5	22.8	HRB " "

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS ...		One 7/0.064	10	24	48	HRB Braided
NAVIGATION LIGHTS ...		One 1/0.044	1.45	5	30	HRB " "
LIGHTING AND HEATING ...						
All lighting sub circuits		One 1/0.044	1.8	5	196 max	HRB Braided
Engine room		One 3/0.029	3	5	80	LCB Braided

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
Hand by Oil Pump not yet available	One	7/0.029	7	15	30	LCB	Braided

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

J. Barber, Branch Manager
Hessrs The Sunderland Forge & Eng Co Ltd Electrical Engineers.

Date *Dec 21st 1941*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *about 30'-0"*

Minimum distance between electric generators or motors and steering compass *✓*

The nearest cables to the compasses are as follows:—

A cable carrying *.36* Ampères *✓* feet from standard compass *about 7* 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.

Builder's Signature. Date

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *"EMPIRE FORD"*

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical installation of this vessel has been fitted under special survey in accordance with the Rules and approved plans, and has been subjected to the tests prescribed by the Rules with satisfactory results.

The materials and workmanship are good.

The equipment is eligible in my opinion for a vessel classed with this Society.

It is stated that the compass will be adjusted at Hull with & without the electrical installation at work.

The Surveyors have been advised

Noted
✓
6/1/42

Total Capacity of Generators *8* Kilowatts.

The amount of Fee *+25%* £ *10 : 0 : 0* When applied for, *29.12.1941*

Travelling Expenses (if any) £ *: 19 : 6* When received, *.....19.....*

Phelip
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 13 JAN 1942*

Assigned *See Je mach, rpt.*

2m.10.33.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)

