

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 23rd September 1941 When handed in at Local Office 8th October 1941 Port of Gainsborough

No. in Survey held at Gainsborough Date, First Survey 14.7.41 Last Survey 23rd September 1941
Reg. Book. (Number of Visits 4)

on the "EMPIRE FORD" Tons {Gross 310
Net.....

Built at Gainsborough By whom built J. S. Nelson (Gainsborough) Ltd Yard No. 1520 When built 1941

Owners Ministry of War Transport (Messrs Robert Rix & Sons) Port belonging to Hull

Electrical Installation fitted by The Sunderland Forge & Engineering Co., Ltd Contract No. 838 When fitted 1941

Is vessel fitted for carrying Petroleum in bulk Is vessel equipped with D.F. E.S.D. Gy.C. Sub.Sig.

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,

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 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 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 of 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 Stindany, 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 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

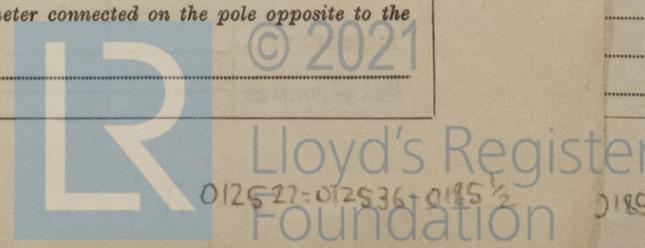
and for each outgoing circuit.....

Double pole linked change over switches & fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule 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 Earth Testing, state means provided Earth lamps & switches



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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 *Yes*, have they been tested under working conditions *Yes*. 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 *Yes*, state maximum fall of pressure between bus bars and any point under maximum load *1.29 mm*, 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 *Yes* with insulating compound *Yes* or waterproof insulating tape *Yes*. 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 *Yes*. Are cables in machinery spaces, galleys, laundries, etc., lead covered *Yes* or run in conduit *Yes*. State how the cables are supported and protected *Slipped to steel & woodwork. 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 effectively 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 *None* and method of control *Yes*. 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 *Yes*. 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 *Yes* and where are the controlling switches fitted *Yes*, 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 *Yes*, are their fittings as per Rule *Yes*. Heating and Cooking, is the general construction as per Rule *None*, are the frames effectually earthed *Yes*, are heaters in the accommodation of the convection type *Yes*. Motors, are all motors constructed and installed as per Rule *Yes* and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil *Yes*, if situated near unprotected combustible material state minimum distance from same horizontally *Yes* and vertically *Yes*. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing *Yes*. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule *Yes*. Control Gear and Resistances, are they constructed and fitted as per Rule *Yes*. Lightning Conductors, where required are they fitted as per Rule *Yes*. 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 *Yes*, are all fuses of the cartridge type *Yes* are they of an approved type *Yes*. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type *Yes*. 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	4 (each)	110	36.36 (each)	1400	4 BHP Vertical Sided Diesel 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 Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	4	One	4/0.52	36.36	37	14'-0"	L.C.B.	In conduit
" " EQUALISER	4	One	4/0.52	36.36	37	8'-0"	L.C.B.	In conduit
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS	No.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES. In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
Navigation	One	4/0.36	1.45	24	48'-0"	HRB	In conduit
Accommodation	One	4/0.36	11.92	24	30'-0"	"	" "
Headlight	One	1/0.44	36	5	228'-0"	"	" "

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES. In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS	One	4/0.36	10	24	40'-0"	HRB	In conduit
NAVIGATION LIGHTS	One	1/0.44	1.45	5	242'-0"	"	" "
LIGHTING AND HEATING	One	1/0.44	1.8	5	196'-0"	HRB	Braided

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.
/		

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 Brancel Hunayn
The Sunderland Ship & Eng. Co Ltd

Electrical Engineers.

Date *Sept 24th 1941*

COMPASSES.

Minimum distance between electric generators or motors and standard compass..... ✓

Minimum distance between electric generators or motors and steering compass..... *About 30' 0"*

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..... *Yes See Gms Ltr 17/10/41.*

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..... 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 *Pimblott Yard No 635*

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 & workmanship are good.

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

The main head lamp is being supplied at Hull & will be fitted before the vessel leaves that port. The compass has also to be adjusted with & without the electrical installation at work.

The Surveyors have been advised.

Noted
LH
21/10/41

Total Capacity of Generators..... *8* Kilowatts.

The amount of Fee *± 25%* £ *10 : 0 : 0* When applied for, *8/10/1941*

Travelling Expenses (if any) £ *13 : 6* When received,.....19.....

[Signature]

Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... *21. 24 OCT 1941*

Assigned..... *See Gms Ltr 21400*

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



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