

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 10 DEC 1941

Date of writing Report 14 Dec 1941 When handed in at Local Office 9 DEC 1941 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 9th Oct, Last Survey 28th Nov, 1941
Reg. Book. Suppt. (Number of Visits 10)

36254 on the M.V. "EMPIRE GRENELL" Tons { Gross 7238, Net 5099

Built at Sunderland By whom built Wm Duffell & Co, Ltd. Yard No. 678 When built 1941

Owners Ministry of War Transport Port belonging to Sunderland

Electrical Installation fitted by Campbell & Osierwood, Ltd. Contract No. 678 When fitted 1941

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

Have plans been submitted and approved Yes System of Distribution 2 wire minimum Voltage of supply for Lighting 110V

Heating Power 110V Direct or Alternating Current, Lighting Yes Power Yes If Alternating Current state periodicity Prime Movers,

has the governing been tested and found as per Rule when full 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

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 Engine room starboard side aft

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 starboard side

on after bulkhead 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 "Ebonny Sindamp" 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

air circuit breaker with overload trip and time lag device on each pole

and for each outgoing circuit Double pole double throw quick break knife switch and double pole fuse

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Instruments on main switchboard 2 w

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

Earth Testing, state means provided 2 lamps coupled to 2 through two fuses

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

If circuit breakers are provided for the generators, at what overload current did they open when tested, are the reversed current protection devices connected on the pole opposite to the equaliser connection

have they been tested under working conditions, and at what current did they operate 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 4.4V, 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 ends Yes



with insulating compound 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. V.I.R. cables run in heavy gauge screwed conduit in the overhead and in machinery spaces. L.C.B. cables clipped to surface or to wood grounds in accommodation spaces.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes. Refrigerated chambers, are the cables and fittings as per Rule Yes. 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 Yes 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 Yes. Secondary Batteries, are they constructed and fitted as per Rule Yes, are they adequately ventilated Yes what is the battery capacity in ampere hours 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 Yes, whether fixed or portable Yes, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes. 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. Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment Yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. Have certificates of inspection and 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. Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships Yes. Are the cables lead covered as per Rule 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 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.	Flash Point of Fuel.
MAIN	2	15	110	136.5	600	Single cylinder steam engines		
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 GENERATORS	2x15	1	19.083	137	191	84.90	V.C.	L.C.B.
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	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.			
AUX. SWITCHBOARDS AND SECTION BOARDS							

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/064	15	46	400	V.I.R.	In conduit & L.C.B.
NAVIGATION LIGHTS	1	7/044	6	31	400	Do.	Do.
LIGHTING AND HEATING	All fed to nav. db. fitted from saloon lig. db.						
Saloon, Capt. & 1st. Comp. Lig. db.	1	7/064	15+8+10	46	354/120	V.I.R.	In conduit & L.C.B.
Engineers' & aft Comp. Lig. db.	1	7/044	20	31	700	Do.	Do.
aft Lig. db.	1	7/044	15	31	400	Do.	Do.

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.
			No. in Parallel For Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Oil Bussing Fan	1	5	1	7/064	42	46	200	V.I.R.	In conduit
Purging Pump	1	1.5	1	7/044	13.5	31	150	Do.	Do.
Oil Separator	2	3	1	7/044	25.1	31	150	Do.	Do.
Rapig. Mfg.	2	22.1	1	7/044	17+11	31	420	Do.	Do.
E.R. Crane	1	3	1	7/044	25	31	200	Do.	Do.
Workshop	1	2	1	7/044	17	31	240	Do.	Do.

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.

DAMPBELL & ISHERWOOD, LTD

Electrical Engineers.

Date 4th Dec 1941

COMPASSES.

Minimum distance between electric generators or motors and standard compass 118 feet

Minimum distance between electric generators or motors and steering compass 112 feet

The nearest cables to the compasses are as follows:—

A cable carrying 14 Ampères on the feet from standard compass 7 feet from steering compass.

A cable carrying 14 Ampères 7 feet from standard compass on the 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

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 his degrees on every course in the case of the

standard compass, and his degrees on every course in the case of the steering compass.

WILLIAM DOXFORD & SONS, Limited.

E. A. Fletcher

Builder's Signature.

Date 4-12-41

Is this installation a duplicate of a previous case no If so, state name of vessel _____

Plans. Are approved plans forwarded herewith no If not, state date of approval 17/10/41: 20/10/41

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith Yes

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

equipment of this vessel has been installed under special survey and in accordance with the approved plans and with the specification. The materials used are of good quality and the workmanship is good. On completion the equipment was operated under working conditions with satisfactory results and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a closed vessel.

Notes

14
11/12/41

5m. 4.30.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minutes.)

Total Capacity of Generators 30 Kilowatts.

The amount of Fee ... £ 28 : 2/6 : (incl. specification)

When applied for, 1 Dec 1941

Travelling Expenses (if any) £ : :

When received, 4 Dec 1941 None

G. Antinson

Surveyor to Lloyd's Register of Shipping.

FRI. 19 DEC 1941

Committee's Minute

Assigned See Sld. J.C. 33265



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