

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office. 3 JUN 1942

Date of writing Report. 14th May 1942 When handed in at Local Office. 28th May 1942 Port of DundeeNo. in Survey held at Dundee Date, First Survey 19th March Last Survey 18th May 1942
Reg. Book. (Number of Visits. 13)36463 on the s/s "EMPIRE PRINCE" Tons { Gross 4030
Net 4927

Built at Dundee By whom built Caledon S.B. Co. Ltd. Yard No. 394 When built 1942

Owners The Ministry of War Transport Port belonging to Dundee

Electrical Installation fitted by Mackay & Co. 13 Bury St London Contract No. When fitted 1942

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

Have plans been submitted and approved. yes System of Distribution Two Wires Voltage of supply for Lighting 110

Heating ✓ Power 110 Direct or Alternating Current, Lighting D.C. Power D.C. 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 Lower Engine Room Platform - Starboard side

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. None and vertically. None, 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. On bulkhead in close proximity of 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. Panels self-insulating, 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. D.P. Linked main

Switches + fuses for each Generator. (No equaliser switches)

and for each outgoing circuit. S.P. Switch + D.P. fuse (No circuit exceeds 50 amps)

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. None Instruments on main switchboard. Two

ammeters. Two 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. Two lamps wired in series from Bus Bars with

protecting fuses + S.P. Switches. Centre point between lamps connected to earth

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 2 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 none 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 yes, 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 All main circuits throughout ship are run in conduit & are V.I.R insulated.
Conduits are clipped to beams & stringers

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 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 yes. 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 none, 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 none and vertically yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing none. 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 ...	<u>2</u>	<u>Each 15</u>	<u>110</u>	<u>136.36</u>	<u>530</u>	<u>Steam Engine</u>	<u>yes</u>	<u>yes</u>
EMERGENCY ...	<u>yes</u>							
ROTARY TRANSFORMER	<u>yes</u>							

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	15	1	.15	136	152	50	V.I.R.	In conduit.
" " EQUALISEE								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								
MAIN DISTRIBUTION CABLES.								
AUX. SWITCHBOARDS AND SECTION BOARDS								
LIGHTING AND HEATING, ETC., CABLES.								
WIRELESS	1	0.0225	13.5	46	540	V.I.R.		In conduit
NAVIGATION LIGHTS	1	0.002	1.5	5	90	H.R.		Clipped to decks etc
LIGHTING AND HEATING	1	0.01	18	31	420	V.I.R.		In conduit
Bridge Accommodation	1	0.0225	18	46	360	"		do
Aft do	1	0.01	19	31	90	"		do
Eng'rs do	1	0.01	22	31	90	"		do
Garage	1	0.007	21	24	18	"		do
Machinery	1	0.0225	15	46	360	"		do
Saloon & Accommodation								
MOTOR CABLES.								
ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Refrigerator motor	1	2 1/2	1	0.0225	15	46	135	V.I.R. In conduit.

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.

Mackay & Co. (S. Mackay) Electrical Engineers. Date 16/5/42.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 150 ft.

Minimum distance between electric generators or motors and steering compass 142 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 18 Ampères 20 feet from standard compass 12 feet from steering compass.

A cable carrying 1.5 Ampères 6 feet from standard compass 4 feet from steering compass.

A cable carrying 1.3 Ampères inside feet from standard compass 13 Ampères inside 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 1/2 degrees on all course in the case of the standard compass, and 1/2 degrees on all course in the case of the steering compass.

FOR AND ON BEHALF OF

THE CALEDON SHIPBUILDING & ENGINEERING CO. LTD.

Builder's Signature Date 25/5/42

DIRECTOR.

Is this installation a duplicate of a previous case Similar If so, state name of vessel s/s Empire Rhodes s/s Empire Heywood

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

This Installation has been efficiently fitted on board in accordance with the Rules, the materials & workmanship being sound & good

The Wiring of the vessel has been carried out in a satisfactory manner, & in accordance with the approved plans

On completion, the installation was tried out under full load & working conditions, & it was found satisfactory in all respects

The requirements of the specification have been satisfactorily carried out

Noted

8/6/42.

Total Capacity of Generators 30 Kilowatts.

The amount of Fee ... £28 : 2 : 6 When applied for, 29/5/19.42

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

4/5 Mo. Dm. a/c £22-10-0
1/5 Mo. Gls. a/c £5-12-6

Committee's Minute GLASGOW 2 JUN 1942

Assigned ACCOMPANYING MACHINERY REPORT

John Houston
Surveyor to Lloyd's Register of Shipping.