

Rpt. 13.

No. 33571

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report... 14 Jan 1943 When handed in at Local Office... 7 JAN 1943 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 8th Dec, Last Survey 29th Dec 1942  
Reg. Book. Suppt. and Wallingford (Number of Visits.....)863/5 on the S.S. "EMPIRE COLLINS" Tons { Gross 9796  
Net 5784

Built at Sunderland By whom built Sir J. Laing &amp; Co., Ltd. Yard No. 745 When built 1942

Owners Ministry of War Transport Port belonging to Sunderland

Electrical Installation fitted by The Sunderland Eng. &amp; Ins. Co. Ltd. Contract No. 745 When fitted 1942

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

Have plans been submitted and approved Yes System of Distribution Two wire immersed Voltage of supply for Lighting 110

Heating 110 Power 110 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 Yes, 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 port side on platform

apt. 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 port side aft near

generating sets.

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 "Economy Linings" 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

quick break knife switch and double pole fuse.

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 Yes 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 E lamps coupled to E 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

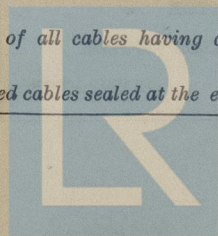
protection devices connected on the pole opposite to the equaliser connection, have they been tested under working conditions, and at what current

did they operate Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule

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, Some W.E. used.

state maximum fall of pressure between bus bars and any point under maximum load 44.44, are the ends of all cables having a sectional area of 0.01

square inch and above provided with soldering sockets Yes Are paper insulated and varnished cambric insulated cables sealed at the ends Yes

Lloyd's Register  
Foundation

005424-005435-0159 12



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. L.C.A.B. cables run in handover ducts under fire and aft gangway: Arriving from L.C.A.B. cables run in pipe with expansion joints on deck: L.C.A.B. cables clipped to surface or tray in machinery spaces: L.C. cables clipped to surface in galleys.

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 effectually bushed. Yes and with what material. Lead or fibre 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. Yes, if so, how are they protected. "Wiggin" flameproof lighting fittings installed in accommodation space

and where are the controlling switches fitted. In accommodation space, 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 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 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	30	110	273	685	Single cylinder steam engine		
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	2430	1	37/083	273	296	36139	V.C.	L.C.A.B.
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

#### MAIN DISTRIBUTION CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		Sectional Area or No. and Dia. of Strands Sq. ins. or sq. mm.	In the Circuit.	Rule.				
AUX. SWITCHBOARDS AND SECTION BOARDS								
Trailing cable Battery Room	1	37/072	135	246	750	V.C.	L.C.A.B.	
Trailing cable Battery Room	1	37/072	135	246	820	V.C.	L.C.A.B.	
Aft B.B. Room	1	19/064	83	135	170	V.C.	L.C.A.B.	
E.R. Accommodation B.B. Room	1	7/064	33	75	20	V.C.	L.C.A.B.	

#### LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/064	35	75	100	V.C.	L.C.	
NAVIGATION LIGHTS	1	7/064	4	31	110	V.I.R.	L.C.	
LIGHTING AND HEATING	1	7/064	22	31	15	V.I.R.	L.C.	
Bridge B.B. Room	1	7/064	12	31	15	V.I.R.	L.C.	
Mid. B.B. Room	1	7/064	13	31	75	V.I.R.	L.C.	
Upper B.B. Room	1	7/064	13	31	110	V.I.R.	L.C.	
Bridge B.B. Room	1	7/064	3	10	130	V.I.R.	L.C.	
Changing Board	1	7/064	20	31	30	V.I.R.	L.C.	
Lower Prop. B.B. Room	1	7/064	21	31	75	V.I.R.	L.C.	
Aft Cargo B.B. Room	1	7/064	2	31	30	V.I.R.	L.C.	
Upper Prop. B.B. Room	1	7/064	13	31	30	V.I.R.	L.C.	
Upper Prop. B.B. Room	1	7/064	9	31	110	V.I.R.	L.C.	
Trailing	1	7/064	18	31	100	V.I.R.	L.C.	
E.R. B.B. Room	1	7/064	29	31	30	V.I.R.	L.C.A.B.	
E.R. Changing Bd.	1	7/064	3	10	20	V.I.R.	L.C.A.B.	

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	H.P.						
Vent. Fan (Off E.R. B.B.)	1	4	1	7/064	33	75	230	V.C. L.C.A.B.
Vent. Fan (Off Mid. B.B.)	1	3	1	7/064	25	75	100	V.C. L.C.A.B.
Workshop Motor								Way provided for later fitting

Note: - W.E. Cable. All 1/064 L.C. cable used for ant. circuits in accommodation is W.E. insulated



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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD

Electrical Engineers.

Date 5-1-1943

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass 291 feet

Minimum distance between electric generators or motors and steering compass 286 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 7/10

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted 7/10

The maximum deviation due to electric currents was found to be 1/2 degrees on every course in the case of the standard compass, and 1/2 degrees on every course in the case of the steering compass.

For and on behalf of  
SIR JAMES LAING & SONS LIMITED.

Builder's Signature.

Date 6 Jan. 1943

Is this installation a duplicate of a previous case 7/10 If so, state name of vessel "Empire Airman"

Plans. Are approved plans forwarded herewith 7/10 If not, state date of approval 13/3/41 & 18/4/41

Certificates. Are certificates of test for ~~motors engaged on essential services~~ and generators forwarded herewith 7/10

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 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 run 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 classed vessel carrying petroleum in bulk.

Noted  
L.S.

14/1/43

Total Capacity of Generators 60 Kilowatts.

The amount of Fee £ 35 : 12/6 (Incl. Specign.)  
Travelling Expenses (if any) £ : :  
When applied for, 5 Jan. 1943  
When received, 19

G. Anterson

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 19 JAN 1943

Assigned See Std. JE 33571



© 2020

Lloyd's Register  
Foundation