

Rpt. 13.

No. 51824

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

7 OCT 1931

Date of writing Report 2-9-31 When handed in at Local Office 3-10-31 Port of GLASSGOW
 No. in Survey held at GLASSGOW Date, First Survey 18th May 1931 Last Survey 24th Sept. 1931
 Reg. Book. 39703 on the T.S.S. "CORFU" (Number of Visits 20)
 Tons { Gross 14251
 Net 7770
 Built at GLASSGOW By whom built A. STEPHENS & SONS LTD Yard No. 534 When built 1931
 Owners PENINSULAR & ORIENTAL STEAM NAV. CO. Port belonging to LONDON
 Electric Light Installation fitted by A. STEPHENS & SONS LTD. Contract No. 534 When fitted 1931
 Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution

Two wirePressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts.Direct or Alternating Current, Lighting direct current Power direct current

If alternating current system, state frequency of periods per second

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off YesGenerators, do they comply with the requirements regarding rating Yes, are they compound wound Yesare they over-compounded 5 per cent. Yes, if not compound wound state distance between each generatorWhere more than one generator is fitted are they arranged to run in parallel Yes, is an adjustable regulating resistance fitted in series with each shunt field YesAre all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched YesPosition of Generators On Dynamo Platform forward end of Engine Roomis the ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

Nil and Nil, are the generators protected from mechanical injury and damage from water, steam or oil Yesare their axes of rotation fore and aft YesEarthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers andtheir respective generators in metallic contact Yes, direct coupled on one bed plateMain Switch Boards, where placed on Switchboard Platform at forward end of Engine Rm.above Dynamos If the generators and main switchboard are not placed in the same compartment, is each generator provided with

a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yesare they protected from mechanical injury and damage from water, steam or oil Yes, if situated near unprotectedwoodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards andare they constructed wholly of durable, non-ignitable non-absorbent materials Slate, is all insulation of high dielectric strength and ofpermanently high insulation resistance Yes, if semi-insulating material is used, are all conducting parts insulated from the slabwith mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yesand is the frame effectively earthed Yes Are the fittings as per Rule regarding:— spacing or shielding of live partsYes, accessibility of all parts Yes, absence of fuses on back of board Yes, proportion of omnibusbars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 3-2000 Amp. D.P. 1/2 Bkrs
fitted with the release & time lags each pole & reverse on neg.^{ve} pole. Equalizer pole - non automatic
which makes before & breaks after positive & negative poles (one for each dynamo). All circuits 200 Amp.
and over have D.P. 1/2 Bkrs. The 1/2 Bkrs. supplying Auxiliary Switchboards have shunt trips worked in
conjunction with 3-way switches & special 1/2 relays on main Generator Bkrs. Circuits under 200 Amp have D.P. switch & fuses

Instruments on main switchboard 3 ammeters 1 voltmeters 1 Voltmeter synchronising device for paralleling purposes.Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Earth testing Lamps(positive to earth and negative to earth) with switches & fusesSwitches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules YesJoint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes

Cables: Single, twin, concentric, or multicore single are the cables insulated and protected as per Tables IV or V of the Rules Yes
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5 volts for Lighting, 8.5 for Power
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductors protected from moisture by being suitably sealed with insulating compound Yes

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage Yes

Support and Protection of Cables, state how the cables are supported and protected L.C. cables in Accom. clipped to perforated iron traps run on underside of beams in alleyways. Cables in Engine & Boiler Rms. where exposed to damage are L.C.A.B. clipped to perforated iron plate. V.T.R. in tubing in Public Rms.

If cables are run in wood casings, are the casings and caps secured by screws Yes, are the cap screws of brass Yes, are the cables run in separate grooves Yes. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII Yes

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements Yes

Joints in Cables, state if any, and how made, insulated, and protected none

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed Yes state the material of which the bushes are made Lead bushes for L.C. cables, Fibre for L.C.A.B. cables.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Nil. except that all metallic sheathing of cables is bonded & welded as required., are their connections made as per Rule —

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule Yes

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven Emergency dynamo in separate compartment on Boat deck with Switchboard adjacent. Generator driven by Petrol-Paraffin Engine direct coupled to Generator on one bed plate.

Navigation Lamps, are these separately wired Yes, controlled by separate switch and separate fuses Yes, are the fuses double pole Yes, are the switches and fuses grouped in a position accessible only to the officers on watch Yes, has each navigation lamp an automatic indicator as per Rule Yes

Secondary Batteries, are they constructed and fitted as per Rule Yes

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight Yes, are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected Fittings in cargo holds fitted with strong iron guards., are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected none, how are the cables led —

where are the controlling switches situated Cargo hold lights are controlled by switches at Hatches with a DP master switch in Chart Room.

Searchlight Lamps, No. of one, whether fixed or portable Fixed, are their fittings as per Rule Yes

Arc Lamps, other than searchlight lamps, No. of none, are their live parts insulated from the frame or case —, are their fittings as per Rule —

Motors, are their working parts readily accessible Yes, are the coils self-contained and readily removable for replacement Yes

are the brushes, brush holders, terminals and lubricating arrangements as per Rule Yes, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material Yes

are they protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes & vertical, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type Totally enclosed, if not of this type, state distance of the combustible material horizontally or vertically above the motors — and —

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule Yes

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule none

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings —

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office —

| 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 | 3 | 350. | 220. | 1600. | 1000 | Steam Turbine | | | |
| AUXILIARY | | | | | | | | | |
| EMERGENCY | 1 | 50. | 220. | 227. | 700. | Petrol Paraffin Engine. | | | |
| ROTARY TRANSFORMER | 2 | 1.64 | 220. | 4.45 | 900. | | | | |
| | 2 | 8. | 25. | 32. | 900. | | | | |

| GENERATOR, LIGHTING AND HEATING CONDUCTORS. | | | | | | | | | |
|---|---------------|--|------------------------|-----------|------------------------|-------|--|----------------|-----------------|
| DESCRIPTION. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | Approximate Length (Lead and Return) Feet. | Insulated with | HOW PROTECTED. |
| | No. per Pole. | Total Effective Area per Pole Sq. Ins. | No. | Diameter. | In Circuit. | Rule. | | | |
| MAIN GENERATOR | 2 | 1.0376 | 127 | .103 | 1600 | 1864. | 52 | PAPER | Lead covered |
| EQUALISER CONNECTIONS | 1 | 1.0376 | 127 | .103 | — | 932. | 26 | " | " |
| AUXILIARY | 1 | 0.4064 | 61 | .093 | 300 | 464. | 208 | " | " |
| EMERGENCY GENERATOR | 1 | 0.1964 | 37 | .083 | 227 | 296. | 52 | " | " |
| SWITCHBOARD | 1 | 0.1964 | 37 | .083 | 268 | 296. | 290 | " | " |
| TRANSFORMER | 1 | 0.8459 | 127 | .093 | 780 | 815. | 312 | " | " |
| ENGINE ROOM & BOILER RM. | 1 | 0.0396 | 19 | .052 | 75 | 104. | 48 | " | " |
| CREW ACCOM. FORWARD | 1 | 0.0105 | 7 | .044 | 175 | 31. | 350 | V.I.R. | Lead covered |
| AUXILIARY SWITCHBOARDS 'A' | 1 | 1.0376 | 127 | .103 | 750 | 932. | 384 | PAPER | " |
| " " 'B' | 1 | 0.2465 | 37 | .093 | 300 | 343. | 148 | " | " |
| " " 'C' | 1 | 1.0376 | 127 | .103 | 800 | 932. | 492 | " | " |
| " " 'D' | 1 | 0.1009 | 19 | .083 | 185 | 191. | 184 | " | " |
| CREW ACCOM. AFT | 1 | 0.0070 | 7 | .036 | 171 | 24. | 30 | V.I.R. | " |
| OFFICERS' ACCOM. LT'S | 1 | 0.0045 | 4 | .029 | 79 | 18.2 | 280 | " | " |
| ACCOMMODATION 1 st CL FORWARD | 1 | 0.0221 | 7 | .064 | 66.8 | 75. | 30 | PAPER | " |
| " 1 st CL MID. | 1 | 0.0221 | 7 | .064 | 53.4 | 75. | 48 | " | " |
| " 2 nd CL AFT. | 1 | 0.0221 | 7 | .064 | 48.3 | 75. | 30 | " | " |
| ENGINEERS' ACCOM. | 1 | 0.0070 | 7 | .036 | 14.8 | 24. | 128 | V.I.R. | " |
| GALLEYS & PANTRIES | 1 | 0.0105 | 7 | .044 | 28 | 31. | 88 | " | " |
| WIRELESS | 1 | 0.0070 | 7 | .036 | 15.5 | 24. | 284 | " | L.C.A.B. |
| SEARCHLIGHT | 1 | 0.0600 | 19 | .064 | 55 | 135. | 140. | PAPER | Lead covered |
| MASTHEAD LIGHT | 1 | 0.0045 | 7 | .029 | 3 | 18.2 | 720 | V.I.R. | " |
| SIDE LIGHTS | 1 | 0.0019 | 3 | .029 | 3 | 7.8 | 176 | " | " |
| COMPASS LIGHTS | 1 | 0.0019 | 3 | .029 | 1 | 7.8 | 130 | " | " |
| POOP LIGHTS | 1 | 0.0045 | 7 | .029 | 3 | 18.2 | 960 | " | " |
| CARGO LIGHTS FORWARD | 1 | 0.0221 | 7 | .064 | 58.8 | 75. | 30 | PAPER | L.C. & L.C.A.B. |
| " AFT | 1 | 0.0221 | 7 | .064 | 48.2 | 75. | 26 | " | " |
| HEATERS PUBLIC RMS FORWARD | 1 | 0.0396 | 19 | .052 | 63.6 | 104. | 180 | " | " |

| MOTOR CONDUCTORS. | | | | | | | | | | |
|-----------------------------|----------------|---------------|--|------------------------|-----------|------------------------|-------|--|----------------|----------------|
| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | Approximate Length (Lead and Return) Feet. | Insulated with | HOW PROTECTED. |
| | | No. Per Pole. | Total Effective Area per Pole Sq. Ins. | No. | Diameter. | In Circuit. | Rule. | | | |
| BALLAST PUMP | 1 | 1 | 0.0759 | 19 | .072 | 128 | 157 | 80 | PAPER | L.C.A.B. |
| MAIN BILGE LINE PUMP | 1 | 1 | 0.0759 | 19 | .072 | 128 | 157 | 72 | " | " |
| 2-WATER EXTRACTION PUMPS | 1 | 1 | 0.0600 | 19 | .064 | 95 | 135 | 152 | " | " |
| EMERGENCY BILGE PUMP | 1 | 1 | 0.0759 | 19 | .072 | 130 | 157 | 388 | " | " |
| 2-SANITARY PUMPS | 1 | 1 | 0.0759 | 19 | .072 | 128 | 157 | 94 | " | " |
| FRESH WATER PUMPS | 1 | 1 | 0.0070 | 7 | .036 | 21 | 24 | 156 | VIR. | " |
| EMERGENCY FRESH WATER PUMPS | 1 | 1 | 0.0105 | 7 | .044 | 21 | 31 | 248 | " | " |
| 2-AIR COMPRESSORS | 1 | 1 | 0.2465 | 37 | .093 | 318.5 | 343 | 82 | PAPER | " |
| DISTILLED WATER PUMP | 1 | 1 | 0.0070 | 7 | .036 | 21 | 24 | 122 | VIR. | " |
| 2-ENGINE TURNING GEAR | 1 | 1 | 0.0146 | 7 | .052 | 32 | 57 | 136 | PAPER | " |
| 2-AUX EXTRACTION PUMP | 1 | 1 | 0.0105 | 7 | .044 | 24.4 | 31 | 68 | VIR. | " |
| 2-LUBRICATING OIL PUMPS | 1 | 1 | 0.0030 | 3 | .036 | 8 | 12 | 70 | " | " |
| 2-CAPSTAN MOTORS | 1 | 1 | 0.1478 | 37 | .072 | 230 | 246 | 106 | PAPER | " |
| 2-WINDLASS MOTORS | 1 | 1 | 0.3024 | 37 | .103 | 375 | 385 | 112 | " | L.C. |
| WINCHES, FORWARD 20-3 TON | 1 | 1 | 0.0600 | 19 | .064 | 120 | 135 | 160 | " | " |
| 2-5 TON | 1 | 1 | 0.1009 | 19 | .083 | 184 | 191 | 180 | " | " |
| 10 BOAT WINCHES | 1 | 1 | 0.0146 | 7 | .052 | 48 | 57 | 200 | " | " |
| CIRCULATING PUMP | 1 | 1 | 0.0105 | 7 | .044 | 25 | 31 | 50 | VIR. | L.C.A.B. |
| 2-STEERING GEAR-MOTORS | 1 | 1 | 0.1168 | 37 | .064 | 153 | 210 | 748 | PAPER. | L.C. |
| 3-BRINE CIRCULATING PUMPS | 1 | 1 | 0.0146 | 7 | .052 | 36 | 57 | 92 | " | L.C.A.B. |
| 1-BRINE CIRCULATING PUMP | 1 | 1 | 0.0146 | 7 | .052 | 41.25 | 57 | 86 | " | " |
| WORKSHOP MOTOR | 1 | 1 | 0.0070 | 7 | .036 | 16.4 | 24 | 58 | VIR. | " |
| VENTILATING FANS FUSE BOX | (9) | 1 | 0.0396 | 19 | .052 | 76.3 | 104 | 280 | PAPER | L.C. |
| "MS1" F.D. " " " | (2) | 1 | 0.0146 | 7 | .052 | 42 | 57 | 152 | " | L.C.A.B. |
| "MS6" F.D. " " " | (2) | 1 | 0.1478 | 37 | .072 | 212 | 246 | 204 | " | " |
| "MS7" F.D. " " " | (2) | 1 | 0.1478 | 37 | .072 | 212 | 246 | 200 | " | " |
| BOILER RM. VENT " " " | (4) | 1 | 0.0396 | 19 | .052 | 90 | 104 | 380 | " | " |
| ENGINE RM. " " " | (4) | 1 | 0.1478 | 37 | .072 | 222 | 246 | 306 | " | " |
| "AEROTO & SIROCCO" " " " | (4) | 1 | 0.0221 | 7 | .064 | 59 | 75 | 100 | " | " |

All Conductors are of annealed copper conforming to British Standard Specification No. 7.
The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
The foregoing is a correct description.

ALEXANDER STEPHEN & SONS, LIMITED.

Electrical Engineers.

Date 1st October 1931

A. H. Stephen

Director

COMPASSES.

Distance between electric generators or motors and standard compass 122 feet

Distance between electric generators or motors and steering compass 120 "

The nearest cables to the compasses are as follows:—

A cable carrying .55 Amperes 10 feet from standard compass 14 feet from steering compass.

A cable carrying 4.0 Amperes 10 feet from standard compass 5 feet from steering compass.

A cable carrying .2 Amperes 10 feet from standard compass 5 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 No degrees on any course in the case of the standard

compass, and no degrees on any course in the case of the steering compass.

ALEXANDER STEPHEN & SONS, LIMITED.

A. H. Stephen

Director

Builder's Signature.

Date 1st October 1931

Is this installation a duplicate of a previous case No. If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)

This installation has been fitted on board under special survey, tested under full working conditions and found satisfactory. The electrical spare gear for the refrigerating machinery has been checked and found correct. The materials and workmanship were found to be good and sound.

Elec. Light

7/10/31

Total Capacity of Generators 1100 Kilowatts.

The amount of Fee £ 59 : 0 : 0

When applied for.

When received.

Travelling Expenses (if any) £

30/10/31

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6 - OCT 1931

Assigned Elec. Light.

FRI. 30 OCT 1931

TUE. 16 FEB 1932



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