

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... -5 JUN 1935

Date of writing Report 27-5-1935 When handed in at Local Office 1-6-1935 Port of Glasgow.

No. in Survey held at Ardrossan.
Reg. Book.Date, First Survey 16-5-35 Last Survey 24-5-1935
(Number of Visits... 3)

90797 on the

T.S.M.V. "PACIFIC COAST"

Tons { Gross 1210
Net 664

Built at Ardrossan

By whom built

Ardrossan Dockyard Ltd

Yard No. 357

When built 1935

Owners

Coast Lines Ltd

Port belonging to

Liverpool

Electric Light Installation fitted by

Campbell & Ishwood Ltd

Contract No. 357

When fitted 1935

Is the Vessel fitted for carrying Petroleum in bulk

No.

System of Distribution

Two wire

Pressure of supply for Lighting

220

volts, Heating

220

volts, Power

220

volts.

Direct or Alternating Current, Lighting

Direct

Power

Direct

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

Yes

Generators, do they comply with the requirements regarding rating

Yes

, are they compound wound

Yes

are they over compounded 5 per cent.

Yes.

, if not compound wound state distance between each generator

Where 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

Yes

Are 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

Yes

Are the lubricating arrangements of the generators as per Rule

Yes

Position of Generators

Main Engine Room. below platform.

is 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

— and —

, are the generators protected from mechanical injury and damage from water, steam or oil

Yes

are their axes of rotation fore and aft

Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed

Yes

are the prime movers and

their respective generators in metallic contact

Yes

Main Switch Boards, where placed

Main Engine Room near generators

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

Yes

are they protected from mechanical injury and damage from water, steam or oil

Yes

, if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards

— and —

are they constructed wholly of durable, non-ignitable non-absorbent materials

Yes

, is all insulation of high dielectric strength and of

permanently high insulation resistance

Yes

, if semi-insulating material is used, are all conducting parts insulated from the slab

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework

Yes

and is the frame effectively earthed

Yes

Are the fittings as per Rule regarding: — spacing or shielding of live parts

Yes

, accessibility of all parts

Yes

, absence of fuses on back of board

Yes

, proportion of omnibus

bars

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

Triple pole circuit

breakers (one pole equalizer) fitted with overload release current trips, for each generator. Triple pole switch and double pole fuses for each outgoing circuit.

Instruments on main switchboard

3

ammeters

2

voltmeters

—

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

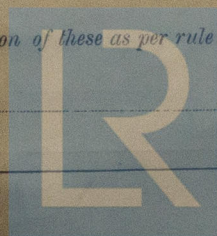
Each Lamp

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

Yes

Joint 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 - twin.* 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 *4 Volts*

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 conductor protected from moisture by being suitably sealed with insulating compound *—*

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 *Main cables H.R. braided in Galvanised tubing
Machinery spaces H.R. in tubing or L.C.A.B. clipped. Accommodation H.R. braided clipped.*

If cables are run in wood casings, are the casings and caps secured by screws *—*, are the cap screws of brass *—*, are the cables run in separate grooves *—*. 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 *—*

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.*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Metallic sheathing & armouring
of cables bonded and earthed by clips or bonding glands. Portable fittings, heating &
cooking apparatus earthed as per Rule.* are their connections made as per Rule *Yes*

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 *—*

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 *Yes - in lower decks,
protected by strong watertight fittings - "Wigan" type.*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *—*

how are the cables led *—*

where are the controlling switches situated *—*

Searchlight Lamps, No. of *—*, whether fixed or portable *—*, are their fittings as per Rule *—*

Arc Lamps, other than searchlight lamps, No. of *—*, 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 or 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 *Yes*, 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 *—*

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 *—*



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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 ... | 3 | 2 at 60 | 220 | 273 | 750 | Diesel Engine | Diesel Oil | above 150°F |
| AUXILIARY ... | 1 | at 45 | 220 | 205 | 750 | do | do | do |
| EMERGENCY ... | | | | | | | | |
| ROTARY TRANSFORMER | | | | | | | | |

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

| DESCRIPTION. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | 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 GENERATORS... 60 KW. | 1 | .40640 | 61 | .093 | 288 | ✓ | 80 | V. I. R. | L.C.A.B. | |
| EQUALISER CONNECTIONS | 1 | .14780 | 37 | .072 | 152 | ✓ | 40 | V. I. R. | L.C.A.B. | |
| MAIN AUXILIARY GENERATOR. 45 KW. | 1 | .24650 | 37 | .093 | 214 | ✓ | 50 | V. I. R. | L.C.A.B. | |
| EMERGENCY GENERATOR | | | | | | | | | | |
| ROTARY TRANSFORMER } MOTOR GENERATOR... | | | | | | | | | | |
| ENGINE ROOM... | 1 | .00299 | 3 | .036 | 4 | 12 | ✓ | 10 | V. I. R. | L.C.A.B. |
| BOILER ROOM... | | | | | | | | | | |
| AUXILIARY SWITCHBOARDS | | | | | | | | | | |
| ENG. ROOM. SECTION BOARD | 1 | .44950 | 61 | .103 | 328 | 332 | ✓ | 30 | V. I. R. | L.C.A.B. |
| LIGHTING SECTION BOARD | 1 | .02214 | 7 | .064 | 34 | 46 | ✓ | 120 | V. I. R. | L.C.A.B. |
| | | | | | | | | | | |
| | | | | | | | | | | |
| ACCOMMODATION POOP... | 1 | .00299 | 3 | .036 | 11 | 12 | ✓ | 20 | V. I. R. | H.R. |
| HOLDS & CARGO | 1 | .00299 | 3 | .036 | 8 | 12 | ✓ | 10 | V. I. R. | H.R. in Tubing |
| NAVIGATION | 1 | .00299 | 3 | .036 | 3 | 12 | ✓ | 300 | V. I. R. | H.R. in Tubing |
| SALOON DECK | 1 | .00455 | 7 | .029 | 14 | 18.2 | ✓ | 200 | V. I. R. | H.R. in Tubing |
| BRIDGE DECK. | 1 | .00455 | 7 | .029 | 8 | 18.2 | ✓ | 60 | V. I. R. | H.R. |
| | 1 | .00299 | 3 | .036 | 6 | 12 | ✓ | 100 | V. I. R. | H.R. |
| WIRELESS | | | | | | | | | | |
| SEARCHLIGHT | | | | | | | | | | |
| MASTHEAD LIGHT | 1 | .00299 | 3 | .036 | 18 | 12 | ✓ | 300 | V. I. R. | H.R. in Tubing |
| SIDE LIGHTS | 1 | .00299 | 3 | .036 | 18 | 12 | ✓ | 60 | V. I. R. | H.R. |
| COMPASS LIGHTS | 1 | .00299 | 3 | .036 | 10 | 12 | ✓ | 40 | V. I. R. | H.R. |
| POOP LIGHTS | | | | | | | | | | |
| CARGO LIGHTS | 1 | .00299 | 3 | .036 | 13 | 12 | ✓ | 300 | V. I. R. | H.R. in Tubing |
| HOT PRESS | 1 | .01046 | 7 | .044 | 27 | 31 | ✓ | 30 | V. I. R. | H.R. |
| TOASTER | 1 | .00455 | 7 | .029 | 16 | 18.2 | ✓ | 30 | V. I. R. | H.R. |
| ARC LAMPS | 1 | .00299 | 3 | .036 | 5 | 12 | ✓ | 30 | V. I. R. | H.R. |
| KETTLE | 1 | .00455 | 7 | .029 | 13 | 18.2 | ✓ | 80 | V. I. R. | H.R. |
| HEATERS ... SALOON CAPTAIN | 1 | .00299 | 3 | .036 | 5 | 12 | ✓ | 100 | V. I. R. | H.R. |

MOTOR CONDUCTORS.

| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | 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 | | | | | | | | | | |
| MAIN BILGE LINE PUMPS ... | 1 | 1 | .00701 | 7 | .036 | 22 | 24 ✓ | 12 | V. I. R. | H.R. in Tubing |
| GENERAL SERVICE PUMP ... | 1 | 1 | .00701 | 7 | .036 | 22 | 24 ✓ | 12 | V. I. R. | H.R. in Tubing |
| EMERGENCY BILGE PUMP ... | | | | | | | | | | |
| SANITARY PUMP | | | | | | | | | | |
| CIRC. SEA WATER PUMPS ... | 1 | 1 | .00701 | 7 | .036 | 22 | 24 ✓ | 12 | V. I. R. | H.R. in Tubing |
| CIRC. FRESH WATER PUMPS... | | | | | | | | | | |
| AIR COMPRESSOR | 2 | 1 | .0600 | 19 | .064 | 77 | 83 ✓ | 12 ^{at 12} 24 | V. I. R. | do |
| FRESH WATER PUMP | 1 | 1 | .00299 | 3 | .036 | 11.3 | 12.0 ✓ | 12 | V. I. R. | do |
| OIL HEATER | 1 | 1 | .01046 | 7 | .052 | 34 | 37 ✓ | 30 | V. I. R. | do |
| ENGINE TURNING GEAR... | | | | | | | | | | |
| OIL PURIFIERS | 2 | 1 | .00299 | 3 | .036 | 6 | 12.0 ✓ | 40 | V. I. R. | do |
| ENGINE REVERSING GEAR | | | | | | | | | | |
| LUBRICATING OIL PUMPS ... | 2 | 1 | .01046 | 7 | .052 | 30 | 37 ✓ | 24 | V. I. R. | do |
| OIL FUEL TRANSFER PUMP ... | 1 | 1 | .00299 | 3 | .036 | 4.4 | 12.0 ✓ | 20 | V. I. R. | do |
| WINDLASS | 1 | 1 | .10099 | 19 | .083 | 132 ^{2 HRS} | 142 ✓ | 40 | V. I. R. | do |
| WINCHES, FORWARD | 2 | 1 | .10099 | 19 | .083 | 122 ^{1 HOUR} | 124 ✓ | 40 | V. I. R. | do |
| " MIDSIP | 4 | 1 | .10099 | 19 | .083 | 122 ^{1 HOUR} | 124 ✓ | 80 | V. I. R. | do |
| WINCHES, AFT | 1 | 1 | .07592 | 19 | .072 | 88 ^{1 HOUR} | 101 ✓ | 150 | V. I. R. | do |
| STEERING GEAR— | | | | | | | | | | |
| (a) MOTOR GENERATOR... | | | | | | | | | | |
| (b) MAIN MOTOR | 1 | 1 | .01046 | 7 | .044 | 30 | 31 ✓ | 150 | V. I. R. | H. R. |
| WORKSHOP MOTOR | | | | | | | | | | |
| VENTILATING FANS { HEATER HOT AIR ... | 1 | 1 | .07592 .00299 | 19 3 | .072 .036 | 82 9 | 92 120 ✓ | 80 80 | V. I. R. V. I. R. | H. R. H. R. |
| MIDSIP WINCHES D.B. MAINS | 1 | 1 | .49850 | 61 | .103 | 2 ^{1 HOUR} 4490 | 534 ✓ | 300 | V. I. R. | H. R. in Tubing |
| FORWARD WINCHES D.B. | " | 1 | .40640 | 61 | .093 | 3 ^{1 HOUR} 360 | 452 ✓ | 450 | V. I. R. | H. R. in Tubing |
| ENGINE ROOM AUX. D.B. 1 | " | 1 | .0600 | 19 | .064 | 75 | 83 ✓ | 110 | V. I. R. | L. C. A. B. |
| " " " D.B. 2 | " | 1 | .0600 | 19 | .064 | 77 | 83 ✓ | 145 | V. I. R. | L. C. A. B. |
| " " " D.B. 3 | " | 1 | .19640 | 37 | .083 | 170 | 184 ✓ | 270 | V. I. R. | L. C. A. B. |
| SALOON POWER D.B. | " | 1 | .19640 | 37 | .083 | 170 | 184 ✓ | 200 | V. I. R. | H. R. in Tubing |

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.

CAMPBELL & ISHERWOOD, LTD.

Electrical Engineers.

Date 28/5/35.

COMPASSES.

Distance between electric generators or motors and standard compass

150 feet

Distance between electric generators or motors and steering compass

175 feet

The nearest cables to the compasses are as follows:—

A cable carrying 10 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 3 Ampères 6 feet from standard compass 10 feet from steering compass.

A cable carrying 6 Ampères 6 feet from standard compass 10 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 led degrees on any course in the case of the standard compass, and led degrees on any course in the case of the steering compass.

John E. Colman

Builder's Signature.

Date 31st May

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.)

The electrical equipment of this

vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship were found to be good and sound.

J.E.C. 1/6/35.

Noted
L.J.
6/6/35.

Total Capacity of Generators

165

Kilowatts.

The amount of Fee ...

£ 34: 15: 0

When applied for.

4 JUN 1935

Travelling Expenses (if any) £

13/6

When received.

19.6.35

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW

4 JUN 1935

Assigned

SEE ACCOMPANYING MACHINERY REPORT.

1m. 9.30.—Transfer.
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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