

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

22 OCT 1947

Received at London Office

Date of writing Report 15-10-1947 When handed in at Local Office 21 October 1947 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 5-7-46 Last Survey 14-10-1947 Reg. Book. (Number of Visits 16)

on the M.V. "PELAYO" Tons { Gross 2518.71 Net 1001.96

Built at Sunderland By whom built Wm Doxford & Sons Yard No. 744 When built 1947

Owners MacAndrews & Co Ltd Port belonging to London

Electrical Installation fitted by Sampson & Isherwood Ltd Contract No. 744 When fitted 1947

Is vessel fitted for carrying Petroleum in bulk No. 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 Low-voltage insulated Voltage of supply for Lighting 220

Heating 220 Power 220 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 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 Yes 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, first level

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 on angle framework near 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 Heavy Sindanyo, 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 a triple-pole (one

pole for equaliser) air-break circuit breaker fitted with O/L & time lag & R/V current tripping devices

and for each outgoing circuit a double-pole 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 3

ammeters 3 voltmeters synchronising devices For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection Yes Earth Testing, state means provided E lamps coupled to E through bus & 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 10% are the reversed current

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

did they operate 50 lb 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 > B.D. 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 yes, if so, are they adequately protected yes Are cables in machinery spaces, galleys, laundries, etc., lead covered yes or run in conduit. State how the cables are supported and protected main feeders along timbers in steel longways with cover plates in machinery spaces L.C.B. & B. on the surface. In accommodation L.C. & L.C.B. clipped to the surface and protected as required by wood or metal guards.

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 or fabric Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes Emergency Supply, state position and method of control.

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, are they adequately ventilated, what is the battery capacity in ampere hours.

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, and where are the controlling switches fitted, are all fittings suitably ventilated yes, are all fittings and accessories constructed and installed as per Rule yes Searchlight Lamps, No. of, whether fixed or portable, are their fittings as per Rule. Heating and Cooling, is the general construction as per Rule yes, are the frames effectually earthed yes, are heaters in the accommodation of the convection type none fitted 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 and vertically. 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. 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. 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, are all fuses of the cartridge type, are they of an approved type. Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. Are the cables lead covered as per Rule. 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 | 3 | 150 | 220 | 682 | 600 | 6-cylinder Vertical Diesel engines | Diesel oil above 150° | |
| 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 | 150 | 2 | 57403 | 682 | 770 | 104 | V.C. | L.C. |
| " " EQUALISER | | 1 | " | | 385 | 52 | " | " |
| " " 2nd | 2. | 150 | 2 | 682 | 775 | 84 | " | " |
| " " 3rd | 3. | 150 | 2 | 682 | 775 | 34 | " | " |
| " " 4th | | | 1 | | 385 | 27 | " | " |
| 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 Per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| AUX. SWITCHBOARDS AND SECTION BOARDS | | | | | | | |
| Aft. Winch Section Panel | 2 | 371064 | 211 | 420 | 350 | V.C. | L.C. |
| Fore " | 2 | " | " | " | 300 | " | " |
| Shellie Deck " " 2ndly aft | 1 | 71064 | 20 | 42 | 390 | " | " |
| Aft. Pantry " | 1 | 191044 | 64 | 84 | 450 | " | " |
| Fore Vent Pass aft " | 1 | 71064 | 36 | 75 | 350 | " | " |
| Galley Heating " | 1 | 191064 | 118 | 135 | 280 | " | " |
| Engine Room Power " | 1 | " | 120 | 135 | 150 | " | " |
| " " " " " | 1 | " | 91 | " | " | " | " |
| " " Lighting " " " | 1 | 71044 | 13 | 42 | 60 | " | " |
| Shellie Deck 1stly aft " " " | 1 | " | 22 | " | 120 | " | " |
| Heumotank Fore " " " | 1 | " | 18 | " | 150 | " | " |
| Heating " " " " | 1 | 191044 | 77.5 | 87 | 300 | " | " |
| Vent Fans " " " " | 1 | 71064 | 36 | 75 | 120 | " | " |
| Shellie Deck 1stly " " " " | 1 | 71044 | 13 | 42 | 60 | " | " |

LIGHTING AND HEATING, ETC., CABLES.

| | | | | | | | |
|---|---|-------|----|----|-----|------|------|
| WIRELESS | 1 | 71044 | 20 | 42 | 150 | V.C. | L.C. |
| NAVIGATION LIGHTS | 1 | 71036 | 5 | 28 | 180 | " | " |
| LIGHTING AND HEATING | | | | | | | |
| 1stly Shellie Deck D.B. | 1 | 71036 | 6 | 28 | 32 | V.C. | L.C. |
| " Upper " | 1 | " | 6 | " | 60 | " | " |
| Manoeuvring Hoods - off Shellie Deck S.P. | 1 | " | 10 | " | 300 | " | " |
| Foremast " | 1 | " | 12 | " | 225 | " | " |
| Foremast D.B. | 1 | " | 5 | " | 150 | " | " |
| E.R. 1stly D.B. Port - off E.R. Section Panel | 1 | " | 8 | " | 60 | " | " |
| " " Starb. | 1 | " | " | " | 90 | " | " |
| Wheelhouse 1stly D.B. - off Shellie Deck S.P. | 1 | " | " | " | 80 | " | " |
| 1stly Shellie Deck Fore. | 1 | " | 6 | " | 12 | " | " |
| " " Passage, Port | 1 | " | 8 | " | 156 | " | " |
| " " " Starboard | 1 | " | " | " | 140 | " | " |

MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | No. | B.H.P. | | | | | | | |
|--|-----|--------|---|--------|-----|-----|--------------|--------|---------|
| Winch Motor | 4 | 38 | 1 | 191083 | 143 | 191 | 2x60 2x48 | V.C. | L.C. |
| " " | 4 | 26 | 1 | 191052 | 99 | 113 | 2x60 2x48 | " | " |
| Windlass " | 1 | 31 | 1 | 191064 | 118 | 151 | 220 | " | " |
| Capstan " | 1 | 28 | 1 | " | 107 | " | 225 | " | " |
| Heumotank - aft deck - lift | 1 | | 1 | 31036 | 8 | 10 | 60 | V.I.R. | in pipe |
| Surpedo Fan - aft hold | 1 | 4 1/2 | 1 | 71036 | 18 | 28 | " | V.C. | L.C. |
| " " " " " " | 1 | " | 1 | " | " | " | " | " | " |
| Heumotank - aft deck - Press | 1 | | 1 | 31036 | 4 | 10 | 80 | V.I.R. | L.C.B. |
| " " " " " " | 1 | | 1 | " | " | " | 100 | " | " |
| " " " " " " | 1 | | 1 | " | " | " | 90 | " | " |
| Oil Fuel Transfer Pumps | 2 | 6 | 1 | 71036 | 21 | 28 | 70 | V.C. | L.C. |
| Oil Purifier | 4 | 3 | 1 | " | 13 | " | 18 | " | " |
| Engine Room Vent Fan. | 4 | 1 1/2 | 1 | 31036 | 7 | 10 | 90 | V.I.R. | L.C.B. |
| Workshop Motor | 1 | 3 | 1 | 71036 | 13 | 28 | " | V.C. | L.C. |
| Fuel Valve Cooling Pump | 2 | 1 1/2 | 1 | 31036 | 7 | 10 | 80 | V.I.R. | L.C.B. |
| Oil Baring Machine | 1 | " | 1 | " | " | " | 90 | " | " |
| Pressing Pump | 1 | " | 1 | " | " | " | 70 | " | " |
| Fore Water " | 1 | " | 1 | " | " | " | 50 | " | " |
| 6-cylinder Motor | 1 | 3 | 1 | 71036 | 13 | 28 | 80 | V.C. | L.C. |
| Winc Pump | 1 | 1 1/2 | 1 | 31036 | 7 | 10 | 40 | PYRO. | |
| Air Compressor | 2 | 57 | 1 | 37072 | 215 | 246 | 2120 | V.C. | L.C.A-B |
| Refrigerating Motor | 1 | 3 | 1 | 71036 | 13 | 28 | 180 | " | " |
| Ballast Pumps | 1 | 22/33 | 1 | 191064 | 125 | 135 | 150 | " | " |
| Sea Water " | 1 | " | 1 | " | " | " | 75 | " | " |
| Fore Water " | 2 | " | 1 | " | " | " | 2/280 | " | " |
| Fore Water " " | 2 | 15 | 1 | 71064 | 59 | 75 | 2/280 | " | " |
| Turning Head Motor | 1 | 12 | 1 | " | 48 | " | 180 | " | " |
| General Services Pumps | 1 | 9 | 1 | 71044 | 28 | 42 | 150 | " | " |
| Bilge Pump | 1 | " | 1 | " | " | " | " | " | " |

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.

CAMPBELL & ISHERWOOD, LTD.

PER

Thompson

Electrical Engineers.

Date

16th Oct 1947

COMPASSES.

Minimum distance between electric generators or motors and standard compass *25'*

Minimum distance between electric generators or motors and steering compass *15'*

The nearest cables to the compasses are as follows:—

A cable carrying *15* Ampères *10* feet from standard compass *on the* feet from steering compass.

A cable carrying *15* Ampères *on the* feet from standard compass *10* 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 *nil* degrees on *steer* course in the case of the standard compass, and *nil* degrees on *steer* course in the case of the steering compass.

WILLIAM DOXFORD & SONS, LIMITED

Builder's Signature.

Date *16.10.47*

J. Ramsay Gibbie
 Managing Director

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *M.Y. PINTO*

Plans. Are approved plans forwarded herewith *No* If not, state date of approval *D. 7.11.46; S. 10.1.47*

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 in accordance with the approved plans and the "Rules for Electrical Equipment". The materials used are of good quality and design and the workmanship is good. Upon completion satisfactory trials of the equipment were witnessed and the insulation resistance of each circuit was measured and found good. This equipment is in my opinion suitable for a classed vessel.

Noted
[Signature]
4.11.47

Total Capacity of Generators *(3x150) 450* Kilowatts.

The amount of Fee ... £ *81. 0. 0* When applied for, *81. 0. 0* *OGT 21 1947*
London { *20. 5. 0* } *London* { *2. 8. 0* }
 Travelling Expenses (if any) £ *1. 17. 3* When received.

[Signature]
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned *See F.E. mchly. opt*

5m. 438.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

