

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

APR 21

Date of writing Report.....19..... When handed in at Local Office.....15. 4. 41..... Port of.....BELFAST..... Received at London Office.....

No. in Survey held at Belfast Date, First Survey 11. 1. 40 Last Survey 3. 4. 41
Reg. Book. on the M.V. "PALMA" (Number of Visits.....14.....)

Built at BELFAST By whom built HARLAND & WOLFF Yard No. 1028 Tons {Gross. 5419
Owners ROYAL MAIL LINES LTD. Port belonging to London Net. 3079. When built 1941

Electrical Installation fitted by HARLAND & WOLFF LTD. Contract No. 1028 When fitted 1941

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

Have plans been submitted and approved YES System of Distribution 2 WIRE Voltage of supply for Lighting 220

Heating 220 Power 220 Direct or Alternating Current, Lighting DIRECT Power DIRECT 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 POSITIVE

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 NOS. 1 & 2 GENERATORS MOTOR ROOM PORT
NO 3 GENERATOR MOTOR ROOM STARBOARD

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 MOTOR ROOM AFT AT LOWER DECK LEVEL

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 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 800 AMP D.P. CIRCUIT BREAKER WITH EQUALIZER SWITCH O/LOAD & REVERSE CURRENT

and for each outgoing circuit FOR CIRCUITS OVER 150AMPS CAPACITY D.P. CIRCUIT BREAKER WITH O/LOAD & TIME LAG
FOR MOTOR ROOM AUXILIARIES D.P. SWITCH & D.P. FUSES
FOR LIGHTING CIRCUITS ETC. S.P. SWITCH & D.P. FUSES

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule YES Instruments on main switchboard 14 ammeters 2 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 2 LAMPS CONNECTED TO EARTH WITH 2-S.P. SWITCHES & D.P. 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 50%, 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 15% 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 5-2 LIGHTING
8-8 POWER 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 -

with insulating compound... or waterproof insulating tape... 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... if so, are they adequately protected... Are cables in machinery spaces, galleys, laundries, etc., lead covered... **TYPES** or run in conduit... State how the cables are supported and protected... **GENERALLY H.R. TYPE CABLES LEAD COVERED IN VICINITY OF NAVIGATING BRIDGE & WIRELESS ROOM CABLES RUN IN PIPE ON SHELTER DECK - H.R. TYPE**

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**... 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... **YES**, if so, how are they protected...

MAGAZINE LTS(2) WIRING RUN IN CONDUIT
and where are the controlling switches fitted... **OUTSIDE COMPARTMENT**... 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 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... 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... **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... 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.	Amps.		Fuel Used.	Flash Point of Fuel.
MAIN	3	175	220	796	BRITISH POLAR DIESEL ENGINE	DIESEL OIL	ABOVE 150° F
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	175	2	91/103	796	922	185	V.I.R.	HARD RUBBER
" " EQUALISER			91/103		461		V.I.R.	HARD RUBBER
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							
MASTERBOARD 'A' WINCHES & WINDLASS	2	91/103	456	461	500	V.I.R.	HARD RUBBER
MASTERBOARD 'B' HEATING	2	61/103	362	367	180	V.I.R.	HARD RUBBER
MASTERBOARD 'B' DOMESTIC	2	19/044	72	53	160	V.I.R.	HARD RUBBER
MASTERBOARD 'C' WINCHES & WARPING WINCH	2	61/103	260	332	365	V.I.R.	HARD RUBBER
MASTERBOARD 'C' MOTOR ROOM AUXILIARIES	2	91/103	456	461	135	V.I.R.	HARD RUBBER
S.&F. PANEL NO. 17	2	7/064	35	46	280	V.I.R.	HARD RUBBER & LEAD COVERED
NAVIGATION S.&F. PANEL NO. 1	2	19/044	30	53	475	V.I.R.	HARD RUBBER
CARGO LIGHTING FORWARD S.&F. BOXES	2	7/064	30	46	360	V.I.R.	HARD RUBBER
CARGO LIGHTING AFT S.&F. BOX	2	7/064	30	31	180	V.I.R.	HARD RUBBER
REFRIG. MACHINERY (DOMESTIC) PANEL	2	19/052	60	64	125	V.I.R.	HARD RUBBER
MOTOR ROOM VENT FANS PANEL	2	7/036	20	24	280	V.I.R.	HARD RUBBER
MOTOR ROOM LIGHTING S.&F. BOXES	2	7/036	20	152	360	V.I.R.	HARD RUBBER
LUB. OIL HEATER 30 K.W.	2	19/052	63	64	150	V.I.R.	HARD RUBBER
SMALL MOTORS S.&F. BOX	2	7/036	20	24	175	V.I.R.	HARD RUBBER
MOTOR ROOM LIGHTING AFT S.&F. BOX	2	7/036	20	24	175	V.I.R.	HARD RUBBER

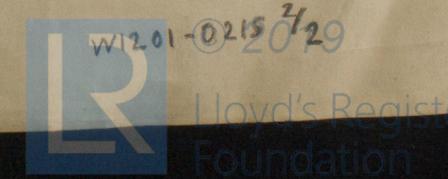
LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	7/044	27.5	31	275	V.I.R.	HARD RUBBER & LEAD COVERED
NAVIGATION LIGHTS BOW, MAST & STERN LIGHTS	3/029	18	7.8		V.I.R.	HARD RUBBER & LEAD COVERED
LIGHTING AND HEATING						
LIGHTING CIRCUITS	3/029		7.8		V.I.R.	HARD RUBBER & LEAD COVERED
HEATERS :-						
3 K.W. HEATER	7/029	13.7	18.2		V.I.R.	LEAD COVERED
2.5 K.W. HEATER	3/036	11.4	12.0		V.I.R.	HARD RUBBER & LEAD COVERED
2 K.W. HEATER	3/036	9.1	12.0		V.I.R.	HARD RUBBER & LEAD COVERED
1.5 K.W. HEATER	3/029	6.8	7.8		V.I.R.	HARD RUBBER & LEAD COVERED
1 K.W. HEATER	3/029	4.5	7.8		V.I.R.	HARD RUBBER & LEAD COVERED
.75 K.W. HEATER	3/029	3.4	7.8		V.I.R.	HARD RUBBER & LEAD COVERED
.5 K.W. HEATER	3/029	2.3	7.8		V.I.R.	HARD RUBBER & LEAD COVERED

MOTOR CABLES.

(ALL IMPORTANT MOTORS TO BE ENUMERATED.)	No.	B.H.P.						
LUB. OIL PUMP No 1 & 2	2	50/85	61/103	320	332	100	V.I.R.	HARD RUBBER
AIR COMPRESSOR No 1 & 2	2	42	37/083	160	184	210	V.I.R.	HARD RUBBER
F.O. TRANSFER	1	4/6	7/044	27	31	180	V.I.R.	HARD RUBBER
TURNING GEAR	1	15	19/082	60	64	90	V.I.R.	HARD RUBBER
EDIBLE CARGO OIL Nos 1 & 2	2	21	19/072	84	97	240	V.I.R.	HARD RUBBER
STEERING GEAR	2	30	19/083	115	142	580	V.I.R.	HARD RUBBER
VAPOUR EXTRACTION FAN	1	4.5	7/036	21	24	165	V.I.R.	HARD RUBBER
S.W. CIRCULATING PUMPS	2	18/33	37/064	128	130	210	V.I.R.	HARD RUBBER
F.W. CIRCULATING PUMP	1	18/25	19/083	97	118	145	V.I.R.	HARD RUBBER
BILGE PUMP	1	9/12	19/044	47	53	200	V.I.R.	HARD RUBBER
BOILER BLOWER	1	1.5	3/036	7	12	140	V.I.R.	HARD RUBBER
BALLAST & GENERAL SERVICE	1	18/33	37/064	128	130	105	V.I.R.	HARD RUBBER
F.W. PUMP (DOMESTIC)	1	2/5	7/036	20	24	165	V.I.R.	HARD RUBBER
AUX. S.W. CIRCULATING	1	4/6	7/044	26	31	150	V.I.R.	HARD RUBBER
AUX. F.W. CIRCULATING	1	3/4	7/036	16.5	24	155	V.I.R.	HARD RUBBER
WINDLASS	1	48	37/083	185	204	385	V.I.R.	HARD RUBBER
WARPING WINCH	1	68	37/103	260	283	225	V.I.R.	HARD RUBBER
3 TON WINCHES	8	24	19/083	128	142	125	V.I.R.	HARD RUBBER
5 TON WINCHES	4	55	37/083	207	215	65	V.I.R.	HARD RUBBER
DRILL	1	2	3/036	8	12	30	V.I.R.	HARD RUBBER
LATHE	1	2	3/036	8	12	45	V.I.R.	HARD RUBBER
GRINDING MACHINE	1	2	3/036	8	12	40	V.I.R.	HARD RUBBER
GENERATOR SUMP PUMP	1	0.5	3/029	2	7.8	90	V.I.R.	HARD RUBBER
PURIFIED F.O. PUMPS	1	4.5	7/036	19	24	60	V.I.R.	HARD RUBBER
F.O. SERVICE PUMP	1	2.5	3/036	11	12	75	V.I.R.	HARD RUBBER
LUB. OIL PURIFIER	1	2	3/036	8.6	12	65	V.I.R.	HARD RUBBER
F.O. PURIFIERS	2	2	3/036	8.6	12	60	V.I.R.	HARD RUBBER
COMPRESSOR (DOMESTIC REFRIG.)	1	4	7/036	18	24	60	V.I.R.	HARD RUBBER
D/G. INSTALLED	ALSO	CORRECTION	COILS INSTALLED	FOR COMPASSES				

"BROWN" GYRO. COMPASS TYPE "B" FITTED



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.



Electrical Engineers.

Date 1/4/41

COMPASSES.

Minimum distance between electric generators or motors and standard compass 80 ft.

Minimum distance between electric generators or motors and steering compass 75 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 0.18 Ampères 20 feet from standard compass 15 feet from steering compass.

A cable carrying 25 Ampères 20 feet from standard compass 15 feet from steering compass.

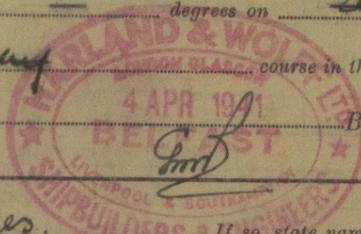
A cable carrying Ampères feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power YES ✓

& CALIBRATED WITH THE D/G. ON & OFF

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

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



Builder's Signature.

Date 12th April 1941

Is this installation a duplicate of a previous case yes. If so, state name of vessel "PARDON" "PAMPAS" 1075-1077 "POTARO" 1076

Plans. Are approved plans forwarded herewith yes. If not, state date of approval

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, tested under full working conditions and found satisfactory. The materials and workmanship are good.

Noted
 S.H.
 2/4/41

Total Capacity of Generators 525 Kilowatts.

The amount of Fee ... £ 58-7-6
 One Belfast 29-1-3
 One Liverpool 29-1-3
 Travelling Expenses (if any) £ : :
 When applied for, 15.4 19.41
 When received, 19.

L. Haffner & Shaw.
 Surveyors to Lloyd's Register of Shipping.

Committee's Minute

TUE. 22 APR 1941

Assigned See Bel 26 12953

5m. 4.30.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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