

Rpt. 13.

No. 86440

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

27 NOV 1930

Received at London Office

Date of writing Report

19

When handed in at Local Office

26/11/1930

Port of NEWCASTLE ON TYNE

No. in

Survey held at

NEWCASTLE

Date, First Survey

18 Aug

Last Survey

4 Nov

1930.

Reg. Book.

(Number of Visits.....10.....)

91966

on the

M.V. PETER HURLL

Tons

{ Gross

{ Net

Built at NEWCASTLE

By whom built PALMERS S.B. &amp; I Co

Yard No. 1000

When built 1930

Owners BALTISCH-AMERIK PETROLEUM IMPORT Port belonging to DANZIG

Electric Light Installation fitted by PALMERS S.B. &amp; I Co.

Contract No. 1000

When fitted 1930

Is the Vessel fitted for carrying Petroleum in bulk

YES.

System of Distribution

Double Wire

Pressure of supply for Lighting

115

volts,

Heating

Cooking

230

volts,

Power

230

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 (see note)

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

Engine Room Port, Engine Room Starboard, and Engine Room Second Deck flat Starboard

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

Engine Room 3rd Deck Forward

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

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

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 Isolating Switches

with Equalizer poles interconnected and D.P. Circuit Breakers for each Generator; D.P. Switch and D.P.

fuses for each outgoing circuit

Instruments on main switchboard

5

ammeters

4

voltmeters

synchronising device for paralleling purposes.

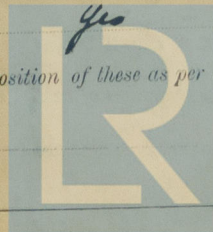
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Earth lamps with

Switches and fuses

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

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule



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003298-003306-0248



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 *5.1 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 *Lead covered and armoured cables secured by galvanised clips to 1/2" steel pads welded to structure or clipped to galv. steel trays distanced from structure*

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 *Yes*

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

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 *Brass females*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas —

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

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

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. Protected by glass shades and heavy metal 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 *Yes in Sky-light of Pump Room Entrance. Plate Glass windows; fitting only opened from outside, how are the cables led in a galvanised iron pipe outside*

where are the controlling switches situated *Watertight D.P. Switches outside pump room entrance*

Searchlight Lamps, No. of *One 1000 W. Sperm* whether fixed or portable *fixed*, are their fittings as per Rule *Yes*

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, except steering motors and vertical centrifugal pumps. Two latter, Refrig. Compressor and 1st Pump with axes the ship*

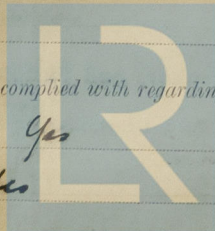
if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type —, if not of this type, state distance of the combustible material horizontally or vertically above the motors — and —

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 *Yes*

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 *Yes*

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



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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 ... ..	2	105	230	456	300	3 Cylinder Diesel Engine		
AUXILIARY ... ..	1	45	230	196	400	Single Cylinder Steam Engine		
EMERGENCY ... ..								
Motor Gen <sup>r</sup> ... ..	2	25	115	217.5	1250	230 Volt Motor.		
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 GENERATOR ... ..	1	.6	91	.093	456	561	210	Cambria	L.C. Arm <sup>d</sup> & Braided	
EQUALISER CONNECTIONS ... ..	1	.6	91	.093		384	105	V.I.R.	do	do
AUXILIARY GENERATOR ... ..	1	.25	37	.093	196	214	130	do	do	do
EMERGENCY GENERATOR ... ..										
ROTARY Gen <sup>r</sup> MOTOR ... ..	1	.12	37	.064	120	130	110	do	do	do
TRANSFORMER GENERATOR ... ..	1	.3	37	.103	217.5	240	114	do	do	do
ENGINE ROOM. and } ... ..	1	.06	19	.064	75.8	83	90	do	do	do
BOILER ROOM... ..										
AUXILIARY SWITCHBOARDS ... ..										
Cooking Gear ... ..	1	.3	37	.103	232	240	330	do	do	do
ACCOMODATION Aft ... ..	1	.06	19	.064	67.7	83	250	V.I.R.	L.C. Arm <sup>d</sup> & Braided	
do Midships ... ..	1	.25	37	.093	103.1	214	560	do	do	do
Gyro Compass ... ..	1	.0225	7	.064	12	46	620	do	do	do
WIRELESS ... ..	1	.0225	7	.064	24	46	580	do	do	do
SEARCHLIGHT ... ..	1	.003	3	.036	9.1	12	40	do	do	do
MASTHEAD LIGHT ... ..	1	.003	3	.036	.35	12	420	do	do	do
SIDE LIGHTS ... ..	1	.002	3	.029	.85	7.8	80	do	do	do
COMPASS LIGHTS ... ..	1	.002	3	.029	.6	7.8	26	do	do	do
POOP LIGHTS ... ..	1	.002	3	.029	.35	7.8	96	do	do	do
CARGO LIGHTS ... ..	1	.002	3	.029	5.2	7.8	120	do	do	do
ARC LAMPS ... ..										
HEATERS ... ..										

## 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	.04	19	.052	56	64	110	V.I.R.	L.C. Arm <sup>d</sup> & Braided	
GENERAL SERVICE PUMP ... ..	1	1	.15	37	.072	118	152	120	do	do	do
EMERGENCY BILGE PUMP ... ..											
SANITARY PUMP ... ..	1	1	.01	7	.044	23.8	31	200	do	do	do
CIRC. SEA WATER PUMPS ... ..	2	1	.2	37	.083	150	184	136	do	do	do
CIRC. FRESH WATER PUMPS ... ..	1	1	.2	37	.083	150	184	140	do	do	do
Refrig COMPRESSOR ... ..	1	1	.007	7	.036	21	24	310	do	do	do
FRESH WATER PUMP ... ..	1	1	.007	7	.036	16	24	220	do	do	do
ENGINE TURNING GEAR ... ..											
ENGINE REVERSING GEAR ... ..											
LUBRICATING OIL PUMPS ... ..	1	1	.0225	7	.064	35.5	46	340	do	do	do
OIL FUEL TRANSFER PUMP ... ..	2	1	.0045	7	.029	15.5	18.2	26	do	do	do
WINDLASS ... ..											
WINCHES, FORWARD ... ..											
Drinking Water Pump ... ..	1	1	.003	3	.036	4.85	12	74	do	do	do
WINCHES, AFT ... ..											
STEERING GEAR—											
(a) MOTOR GENERATOR ... ..	2	1	.1	19	.083	140	142	180	do	do	do
(b) MAIN MOTOR ... ..	2	1	.1	19	.083	140	142	310	do	do	do
WORKSHOP MOTORS (Sect. Box) 6 on Box ... ..	1	1	.06	19	.064	71.72	83	270	do	do	do
FORECAST DRAGHT VENTILATING FANS ... ..	2	1	.0045	7	.029	12.5	18.2	160	do	do	do
10" Lathe ... ..	1	1	.01	7	.044	28.7	31	38	do	do	do
5" Lathe ... ..	1	1	.003	3	.036	4.5	12	52	do	do	do
Drilling machine ... ..	1	1	.0045	7	.029	12.5	18.2	54	do	do	do
Shaping machine ... ..	1	1	.003	3	.036	8.75	12	26	do	do	do
Grinding machine ... ..	1	1	.003	3	.036	8.0	12	22	do	do	do
Oil Purifier ... ..	1	1	.003	3	.036	9.27	12	48	do	do	do

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All Conductors are of annealed copper conforming to British Standard Specification No. 7.

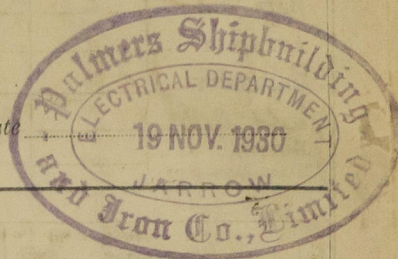
The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

*W. W. Homery.*

Electrical Engineers.

Date



# COMPASSES.

Distance between electric generators or motors and standard compass *230 feet*

Distance between electric generators or motors and steering compass *223 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *28* Ampères *in the* feet from standard compass *8* feet from steering compass.

A cable carrying *28* Ampères *8* 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 *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 *any* course in the case of the standard compass, and *nil* degrees on *any* course in the case of the steering compass.

*Palmer's Shipbuilding & Iron Co., Ltd.*

*AB Jenkins*

Builder's Signature.

Date

Shipyard Manager.

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 and has, except for the two 105 K.W. Diesel driven generators, been tested under full working conditions. The two 105 K.W. generators with their circuit breakers were not tested under full load and overload due to the prime movers being incapable of developing their rated output due to unsuitable fuel. These machines should be tested at a later date when suitable fuel is available.*

*The materials and workmanship were found to be good and sound.*

*It is submitted that this vessel is eligible for THE RECORD. Elec. Light.*

*28/11/30*

Total Capacity of Generators *255* Kilowatts.

The amount of Fee ... *£37 : 17* : *15/11/1930*

Travelling Expenses (if any) £ : : *19.2 31.6 666*

*L. C. Clayton*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*Elec. Lt*



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