

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) Received at London Office 27 NOV 1930

Date of writing Report 19 When handed in at Local Office 26/11/30 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. & 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. & 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

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 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 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 Breaker 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 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 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 galvanized 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 ferrules

**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 skylight of pump room entrance. Plate glass windows; fitting only opened from outside, how are the cables led in a galvanized iron pipe outside

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

**Searchlight Lamps,** No. of One 1000 Wd Speny 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 lathes, Refrig Compressor and 1 HP Pump with axes the ship  
if situated near unprotected work 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	.093	456 / 561	210	210	Cambria	L.C. Arm <sup>d</sup> Braided	
EQUALISER CONNECTIONS	1	.6 / 91	.093	.093	384	105	105	V.I.R.	do	do
AUXILIARY GENERATOR	1	.25 / 37	.093	.093	196 / 214	130	130	do	do	do
EMERGENCY GENERATOR										
ROTARY Gen <sup>r</sup> MOTOR	1	.12 / 37	.064	.064	120 / 130	110	110	do	do	do
TRANSFORMER GENERATOR	1	.3 / 37	.103	.103	217.5 / 240	114	114	do	do	do
ENGINE ROOM. and } BOILER ROOM... }	1	.06 / 19	.064	.064	75.8 / 83	90	90	do	do	do
AUXILIARY SWITCHBOARDS										
Cooking Gear	1	.3 / 37	.103	.103	232 / 240	330	330	do	do	do
ACCOMODATION Aft	1	.06 / 19	.064	.064	67.7 / 83	250	250	V.I.R.	L.C. Arm <sup>d</sup> Braided	
do Midships	1	.25 / 37	.093	.093	103.1 / 214	560	560	do	do	do
Gyro Compass	1	.0225 / 7	.064	.064	12 / 46	620	620	do	do	do
WIRELESS	1	.0225 / 7	.064	.064	24 / 46	580	580	do	do	do
SEARCHLIGHT	1	.003 / 3	.036	.036	9.1 / 12	40	40	do	do	do
MASTHEAD LIGHT	1	.003 / 3	.036	.036	.35 / 12	420	420	do	do	do
SIDE LIGHTS	1	.002 / 3	.029	.029	.85 / 7.8	80	80	do	do	do
COMPASS LIGHTS	1	.002 / 3	.029	.029	.6 / 7.8	26	26	do	do	do
POOP LIGHTS	1	.002 / 3	.029	.029	.35 / 7.8	96	96	do	do	do
CARGO LIGHTS	1	.002 / 3	.029	.029	5.2 / 7.8	120	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	.052	56 / 64	110	110	V.I.R.	L.C. Arm <sup>d</sup> Braided	
GENERAL SERVICE PUMP	1	1	.15 / 37	.072	.072	118 / 152	120	120	do	do	do
EMERGENCY BILGE PUMP											
SANITARY PUMP	1	1	.01 / 7	.044	.044	23.8 / 31	200	200	do	do	do
CIRC. SEA WATER PUMPS	2	1	.2 / 37	.083	.083	150 / 184	136	136	do	do	do
CIRC. FRESH WATER PUMPS	1	1	.2 / 37	.083	.083	150 / 184	140	140	do	do	do
COMPRESSOR	1	1	.007 / 7	.036	.036	21 / 24	310	310	do	do	do
FRESH WATER PUMP	1	1	.007 / 7	.036	.036	16 / 24	220	220	do	do	do
ENGINE TURNING GEAR											
ENGINE REVERSING GEAR											
LUBRICATING OIL PUMPS	1	1	.0225 / 7	.064	.064	35.5 / 46	340	340	do	do	do
OIL FUEL TRANSFER PUMP	2	1	.0045 / 7	.029	.029	15.5 / 18.2	26	26	do	do	do
WINDLASS											
WINCHES, FORWARD											
Drinking Water Pump	1	1	.003 / 3	.036	.036	4.85 / 12	74	74	do	do	do
WINCHES, AFT											
STEERING GEAR—											
(a) MOTOR GENERATOR	2	1	.1 / 19	.083	.083	140 / 142	180	180	do	do	do
(b) MAIN MOTOR	2	1	.1 / 19	.083	.083	140 / 142	310	310	do	do	do
WORKSHOP MOTORS (Sect. Box) 6 on Box	1	1	.06 / 19	.064	.064	71.72 / 83	270	270	do	do	do
Forward Draught VENTILATING FANS	2	1	.0045 / 7	.029	.029	12.5 / 18.2	160	160	do	do	do
10" Lathe	1	1	.01 / 7	.044	.044	28.7 / 31	38	38	do	do	do
5" Lathe	1	1	.003 / 3	.036	.036	4.5 / 12	52	52	do	do	do
Drilling machine	1	1	.0045 / 7	.029	.029	12.5 / 18.2	54	54	do	do	do
Shaping machine	1	1	.003 / 3	.036	.036	8.75 / 12	26	26	do	do	do
Grinding machine	1	1	.003 / 3	.036	.036	8.0 / 12	22	22	do	do	do
Oil Purifier	1	1	.003 / 3	.036	.036	9.27 / 12	48	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. Tomeroy*

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.

Palmers 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, etc.)

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.

*[Signature]*  
28/11/30

Total Capacity of Generators 255 Kilowatts.

The amount of Fee £37 : 17 : 6 When applied for, 15/11/1930.

Travelling Expenses (if any) £ : : When received, 19.2.31. 6/6

*L. C. Clayton*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*Elec. Lt*



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Im. 11.29.—Transfer. (The Surveyors are requested not to write on or back in the space for Committee's Minute.)