

Rpt. 13.

No. 87354

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 17 JUL 1931

Date of writing Report

19

When handed in at Local Office

16/7/31

Port of

NEWCASTLE-ON-TYNE

No. in

Survey held at

NEWCASTLE ON TYNE

Date, First Survey

22 April

Last Survey

7 July

1931

Reg. Book.

92028

on the PAN BOLIVAR

(Number of Visits.....6.....)

Tons

Gross

Net

Built at NEWCASTLE ON TYNE.

By whom built SWAN HUNTER &amp; W.R. LTD.

Yard No. 1465

When built 1931

Owners PAN AMERICAN PETROLEUM &amp; TRANSPORT CO. Port belonging to LOS ANGELES.

Electric Light Installation fitted by SWAN HUNTER &amp; W.R. LTD.

Contract No. 1465. When fitted 1931

Is the Vessel fitted for carrying Petroleum in bulk

YES. ✓

## System of Distribution

Double Wire

Pressure of supply for Lighting

110

volts, Heating

—

volts, Power

110

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

No

, 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

On Dynamo Flat at Aft end of Engine Room

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

On Dynamo Flat, at Aft end of Engine Room.

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

Double Pole

Main Change-over switch for generators, and Double Pole Quick Break Knife switch for each outgoing circuit.

Instruments on main switchboard

2

ammeters

1

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

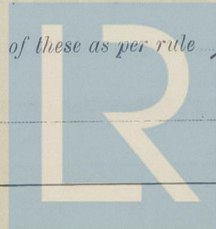
connected to earth through switches &amp; fuses.

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



Lloyd's Register Foundation

**Cables:** Single, twin, concentric, or multicore Single 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 25 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 L.C. cable clipped up in Accommodation.  
L.C. & Braided in galvanized iron pipe under gangway, L.C. & Armoured cable clipped up in machinery spaces.  
 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.

**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 —  
—, 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 nil

**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 —, 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 Pump Room in special gastight fittings.  
in galvanized iron piping.  
 where are the controlling switches situated midship passage, port side.

**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, 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.

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	15	110	136	600	Rotary S.C. Enclosed Type		
AUXILIARY ...						Steam engine.		
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.	Rate.				
MAIN GENERATOR ... ..	1.	.1478	37	.072	136 ✓	152	25.	V.I.R.	L.C. & Braided in Pipe	
EQUALISER CONNECTIONS ... ..										
AUXILIARY GENERATOR... ..										
EMERGENCY GENERATOR ... ..										
ROTARY TRANSFORMER } MOTOR GENERATOR... ..										
ENGINE ROOM... } ... ..	1	.01046	7	.044	25 ✓	31	60	do	L.C. & A.	
BOILER ROOM... } ... ..										
AUXILIARY SWITCHBOARDS ... ..										

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.	Rate.			
BALLAST PUMP ... ..										
MAIN BILGE LINE PUMPS ... ..										
GENERAL SERVICE PUMP ... ..										
EMERGENCY BILGE PUMP ... ..										
SANITARY PUMP ... ..										
CIRC. SEA WATER PUMPS ... ..										
CIRC. FRESH WATER PUMPS... ..										
AIR COMPRESSOR ... ..										
FRESH WATER PUMP ... ..										
ENGINE TURNING GEAR... ..										
ENGINE REVERSING GEAR ... ..										
LUBRICATING OIL PUMPS ... ..										
OIL FUEL TRANSFER PUMP... ..										
WINDLASS ... ..										
WINCHES, FORWARD ... ..										
WINCHES, AFT ... ..										
STEERING GEAR—										
(a) MOTOR GENERATOR...										
(b) MAIN MOTOR ... ..										
WORKSHOP MOTOR ... ..	1	1	.02214	7	.064	40 ✓	46	96	V.I.R.	L.C. & A.
VENTILATING FANS ... ..	2	1	.00194	3	.029	6 ✓	7.8	50	do	L.C.
Oil Purifier	1	1	.00194	3	.029	2.6 ✓	7.8	100	do	L.C. & A.

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.

for

SWAN. HUNTER. & WIGHAM RICHARDSON, LTD.

Electrical Engineers.

Date

13<sup>th</sup> July 31.

#### COMPASSES.

Distance between electric generators or motors and standard compass

288 feet Approx

Distance between electric generators or motors and steering compass

285 feet Approx

The nearest cables to the compasses are as follows:—

A cable carrying .1 Ampères 5 feet from standard compass inside feet from steering compass.

A cable carrying .1 Ampères inside feet from standard compass 5 feet from steering compass.

A cable carrying 7.8 Ampères 6 feet from standard compass 8 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.

for

SWAN. HUNTER. & WIGHAM RICHARDSON, LTD.

Builder's Signature.

Date

13 July 1931

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 in accordance with special survey, and has been tested under full working conditions and found satisfactory.

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

It is submitted that  
this vessel is eligible for  
THE RECORD.

Elec. Light:

19/8/31.

Total Capacity of Generators 30 Kilowatts.

The amount of Fee ...

£ 22 : 10

When applied for,  
14.7.1931.

Travelling Expenses (if any) £

When received,  
29.8.31.

R. C. Clayton.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned



© 2020

Lloyd's Register  
Foundation