

Rpt. 13.

No. 20208

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 22-12-31 19 When handed in at Local Office Received at London Office

No. in Survey held at Hamburg Port of Hamburg  
Reg. Book. Date, First Survey 12-9-31 Last Survey 19-12-31 19  
on the Steel Twin Sc. "HORN SHELL" (Number of Visits 14)

Tons { Gross 8272  
Net 4837

Built at Hamburg By whom built Deutsche Werft A.G. Yard No. 146 When built 1931

Owners Anglo Saxon Petroleum Co. Port belonging to London

Electric Light Installation fitted by Allgem. Elektrizitäts-Ges. Contract No. When fitted 1931

Is the Vessel fitted for carrying Petroleum in bulk yes

System of Distribution two wire, two conductor system

Pressure of supply for Lighting 115 volts, Heating

Direct or Alternating Current, Lighting direct Power 115 volts.

If alternating current system, state frequency of periods per second

Power direct

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

Position of Generators main engine room, starb. side Are the lubricating arrangements of the generators as per Rule yes

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 main engine room, starb. side

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, and, 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 Generator:—

A fuse on each pole and a double pole linked switch. For each outgoing circuit:—  
A fuse on each pole and a single pole change over switch, all on the same pole.

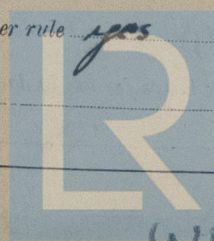
Instruments on main switchboard 2 ammeters 2 voltmeters synchronising device for paralleling purposes.

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

Lamp alarm arrangement

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



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Lloyd's Register

Foundation

W172-0021(1/2)



*German Standards have been applied*

**Cables:** Single, twin, concentric, or multicore *yes* are the cables insulated and protected as per Tables IV or V of the Rules *generally*

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *3 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 *none fitted*

**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 *armoured cables clipped, on deck*  
*armoured cables running in tubes*

If cables are run in wood casings, are the casings and caps secured by screws *yes*, are the cap screws of brass *yes*, are the cables run in separate grooves *yes*. 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 *gas tight joint boxes*

**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 *yes*

**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 *yes*

**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*, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *no*, how are the cables led *See Mr 7/1/32*, where are the controlling switches situated *yes*

**Searchlight Lamps, No. of** *yes*, whether fixed or portable *yes*, are their fittings as per Rule *yes*

**Arc Lamps,** other than searchlight lamps, No. of *yes*, are their live parts insulated from the frame or case *yes*, are their fittings as per Rule *yes*

**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 *yes*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *yes*

**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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	2 x 16	115	145	390	10th Heavy Oil Eng. 25CSA	Direct Oil	120°F
AUXILIARY ...					390	10th 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. m.	Insulated with	HOW PROTECTED.	
	No. per Pole.	Total Effective Area per Pole Sq. ins. mm.	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATOR <i>Steam</i> ...	<i>1</i>	<i>95</i>	<i>37</i>	<i>1.81</i>	<i>145</i>	<i>150</i>	<i>2 x 6</i>			
EQUALISER CONNECTIONS										
AUXILIARY GENERATOR <i>City</i> ...	<i>1</i>	<i>95</i>	<i>37</i>	<i>1.81</i>	<i>145</i>	<i>150</i>	<i>2 x 3</i>			
EMERGENCY GENERATOR										
ROTARY TRANSFORMER } MOTOR GENERATOR...										
ENGINE ROOM... <i>L.</i> ...	<i>1</i>	<i>16</i>	<i>19</i>	<i>1.04</i>	<i>15</i>	<i>50</i>	<i>2 x 5</i>			
BOILER ROOM <i>Altho. I.</i> ...	<i>1</i>	<i>16</i>	<i>19</i>	<i>1.04</i>	<i>15</i>	<i>50</i>	<i>2 x 60</i>			
AUXILIARY SWITCHBOARDS										
<i>Midship (Lightning)</i>	<i>1</i>	<i>25</i>	<i>19</i>	<i>1.3</i>	<i>45</i>	<i>64</i>	<i>2 x 100</i>			
<i>Forecastle</i>	<i>1</i>	<i>16</i>	<i>19</i>	<i>1.04</i>	<i>15</i>	<i>50</i>	<i>2 x 130</i>			
<i>Workshop (Power)</i>	<i>1</i>	<i>35</i>	<i>19</i>	<i>1.53</i>	<i>65</i>	<i>80</i>	<i>2 x 70</i>			
<i>Navigation</i>	<i>1</i>	<i>4</i>	<i>19</i>	<i>0.52</i>	<i>7</i>	<i>22</i>	<i>2 x 100</i>	<i>Rubber</i>	<i>Lead covered and armoured</i>	
ACCOMMODATION <i>q/c</i> ...	<i>1</i>	<i>16</i>	<i>19</i>	<i>1.04</i>	<i>10</i>	<i>50</i>	<i>2 x 20</i>			
<i>ABCDEF</i>	<i>1</i>	<i>4</i>	<i>19</i>	<i>0.52</i>	<i>10</i>	<i>22</i>	<i>2 x 10</i>			
<i>G,H,K,M</i>	<i>1</i>	<i>4</i>	<i>19</i>	<i>0.52</i>	<i>10</i>	<i>22</i>	<i>2 x 12</i>			
<i>L</i>	<i>1</i>	<i>4</i>	<i>19</i>	<i>0.52</i>	<i>10</i>	<i>22</i>	<i>2 x 12</i>			
<i>R.S.P. Portable Lamps</i>	<i>1</i>	<i>6</i>	<i>19</i>	<i>0.64</i>	<i>10</i>	<i>28</i>	<i>2 x 135</i>			
WIRELESS	<i>1</i>	<i>10</i>	<i>19</i>	<i>0.82</i>	<i>20</i>	<i>31</i>	<i>2 x 40</i>			
SEARCHLIGHT										
MASTHEAD LIGHT	<i>1</i>	<i>15</i>	<i>1</i>	<i>1.38</i>	<i>0.5</i>	<i>8</i>	<i>2 x 60, 2 x 80</i>			
SIDE LIGHTS	<i>1</i>	<i>15</i>	<i>1</i>	<i>1.38</i>	<i>0.5</i>	<i>8</i>	<i>2 x 15 each</i>			
COMPASS LIGHTS	<i>1</i>	<i>15</i>	<i>1</i>	<i>1.38</i>	<i>0.25</i>	<i>8</i>	<i>2 x 12, 2 x 10</i>			
POOP LIGHTS	<i>1</i>	<i>15</i>	<i>1</i>	<i>1.38</i>	<i>0.3</i>	<i>8</i>	<i>2 x 60</i>			
CARGO LIGHTS	<i>1</i>	<i>15</i>	<i>1</i>	<i>1.38</i>	<i>1.5</i>	<i>8</i>	<i>2 x 80</i>	<i>Rubber</i>	<i>flexible</i>	
ARC LAMPS										
HEATERS										

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet. m.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. ins. mm.	No.	Diameter.	In Circuit.	Rule.			
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...	2	1	35	19	1.52	55	80	2x10, 2x5	Rubber	Lead covered and armoured
ENGINE REVERSING GEAR ...										
LUBRICATING OIL PUMPS	1	1	4	19	0.52	16	22	2x20		
OIL FUEL TRANSFER PUMP ...										
WINDLASS ... ..										
WINCHES, FORWARD ... ..										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR...										
(b) MAIN MOTOR ... ..										
WORKSHOP MOTOR ... ..										
VENTILATING FANS ... ..										
Lathe	1	1	10	19	0.82	25	31	2x12		
Drilling machine	1	1	4	19	0.52	12	22	2x12		
Grinding "	1	1	2.5	1	1.73	10	14	2x10		



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.

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT  
ABT. f. SCHIFFBAU  
BAUBUREAU HAMBURG

Electrical Engineers.

Date 25.12.1931.

#### COMPASSES.

Distance between electric generators or motors and standard compass 80 m

Distance between electric generators or motors and steering compass 82 m

The nearest cables to the compasses are as follows:—

A cable carrying 0.3 Ampères close to feet from standard compass close to feet from steering compass.

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

DEUTSCHE WERFT  
AKTIENGESELLSCHAFT

Builder's Signature.

Date 30.12.31

Is this installation a duplicate of a previous case yes If so, state name of vessel "Circe Shell" No 39815

General Remarks (State quality of workmanship, opinions as to class, &c.)

Material and workmanship of this electric installation are of good quality. As the conductors used are of the German Standards, the Society's Rules respecting conductors have been applied generally. The installation has been fitted in accordance with the approved plans, the Secretary's letters and in compliance with the Society's Rules. It has given satisfaction under working conditions and is eligible in my opinion to be classed with notation of "Electric Light."

Elec. Light  
J. A. Smith  
4/1/32

Total Capacity of Generators 32 — Kilowatts.

The amount of Fee ... £ 23 : — : When applied for, 22-12-1931

Travelling Expenses (if any) £ — : — : When received, 22.1.1932

J. A. Smith  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 5 JAN 1932

Assigned

Elec Lt.