

Rpt 13.

No. 10759

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 19... When handed in at Local Office 11-1-32 Port of Belfast.

No. in Survey held at Belfast. Date, First Survey 9<sup>th</sup> Sept Last Survey 12<sup>th</sup> Dec 1931  
Reg. Book. (Number of Visits.....)18324 on the Twin Steel S. "CONUS". Tons { Gross 8132  
Net

Built at Belfast. By whom built Workman, Black (1928) Ltd. Yard No. 518 When built 1931.

Owners Anglo-Saxon Petroleum Co Ltd. Port belonging to London.

Electric Light Installation fitted by The Sunderland Forge &amp; Eng Co Ltd. Contract No. When fitted 1931.

Is the Vessel fitted for carrying Petroleum in bulk Yes.

System of Distribution Double Wire, Distribution Box. ✓

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, 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 Main Engine Room Starboard Side ✓

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

Main Switch Boards, where placed Main Engine Room Starboard 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 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

switches &amp; fuses for main generator &amp; Double pole change-over switches &amp; fuses for

each outgoing circuit. ✓

Instruments on main switchboard two ✓ ammeters two ✓ 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 lamp. ✓

switch &amp; fuse on each pole

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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W18-0049



**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 *4.9 Volts. (5.3 Rule)* *yes*

**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, Armoured, Braided cables run in Screwed Galv. Iron Pipe made watertight.* *yes*

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

**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 *Lead* *yes*

**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 —

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *Special Fastlight*  
*Pump Room fittings*  
*in Galv. Iron Pipe made gastight.* *yes*  
 where are the controlling switches situated *outside pump room.* *yes*

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

**Are 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* *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* *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 —

**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* *yes*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *yes* *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	16	110	146	390	1 Steam Engine 2 Kromhout Engine			
AUXILIARY ...									
EMERGENCY ...									
ROTARY TRANSFORMER									

  

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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	100	19	.083	146	172	50.	Laminated bamboo	L. C. Q. + B
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER MOTOR GENERATOR ...									
ENGINE ROOM ...									
BOILER ROOM ...									
AUXILIARY SWITCHBOARDS ...									
SHORE CONNECTION.	1	.25	37	.043	146	309	130	Y. C.	L. C. Q. + B
MIDSHIP & FORWARD LIT.	1	.04	13	.032	41.6	64	530	Y. I. R.	L. C. Q. + B
CARGO LIT.	1	.04	13	.052	46.6	64	36	Y. I. R.	do
ENGINE ROOM AUXILIARIES	1	.04	13	.052	58.0	64	30	Y. I. R.	do
GREEN AFT LIT.	1	.04	13	.052	45.8	64	36	Y. I. R.	do
ACCOMMODATION ...									
WIRELESS ...	1	.01	7	.044	20	31	224	Y. I. R.	L. C. Q. + B
SEARCHLIGHT ...									
MASTHEAD LIGHT ...	1	.002	3	.029	.39	7.8	410.	Y. I. R.	do
SIDE LIGHTS ...	1	.002	3	.029	.38	7.8	80	Y. I. R.	do
COMPASS LIGHTS ...									
POOP LIGHTS ...									
CARGO LIGHTS ...									
ARC LAMPS ...									
HEATERS ...									

  

MOTOR CONDUCTORS.									
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	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 ...	2	1	.075	13	.072	97	97	120	Y. I. R.
ENGINE TURNING GEAR ...									
ENGINE REVERSING GEAR ...									
LUBRICATING OIL PUMP ...	1	1	.01	7	.044	28	31	225	do
OIL FUEL TRANSFER PUMP ...									
WINDLASS ...									
WINCHES, FORWARD ...									
WINCHES, AFT ...									
STEERING GEAR—									
(a) MOTOR GENERATOR ...									
(b) MAIN MOTOR ...									
WORKSHOP MOTOR ...									
VENTILATING FANS ...									
Grinding Machine	1	1	.01	7	.044	26.7	31	135	Y. I. R.
Drilling	1	1	.007	7	.036	18	24	135	do
Saw	1	1	.007	7	.036	18	24	135	do



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.

p.pro. THE SUNDERLAND FORGE & ENG.CO.LTD.,

Electrical Engineers.

Date 7.1.32.

#### COMPASSES.

Distance between electric generators or motors and standard compass

216 feet

Distance between electric generators or motors and steering compass

216 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 4.5 Ampères 20 feet from standard compass 16 feet from steering compass.

A cable carrying 19 Ampères 6 feet from standard compass led into steering compass.

A cable carrying 19 Ampères led into standard compass 6 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 all courses in the case of the standard compass, and nil degrees on all courses in the case of the steering compass.

WORKMAN CLARK (1928) LIMITED.

F. Cunningham

Builder's Signature.

Date

Is this installation a duplicate of a previous case Yes If so, state name of vessel

"CORBIS."

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

This installation has been fitted on the vessel under special survey. The materials and workmanship are sound and good. An insulation resistance test has been applied and the installation tried out under working conditions with satisfactory results. In my opinion the vessel is eligible for notation "Electric Light."

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

Elec. Light

CW  
21.1.32

Total Capacity of Generators 32 Kilowatts.

The amount of Fee ... £ 23 : 0

When applied for,

11<sup>th</sup> Jan. 1932

Travelling Expenses (if any) £

When received,

21.1.32

John K. Williams.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elec. Lt.



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