

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 19... When handed in at Local Office 2 AUG 1934 Received at London Office 3 AUG 1934  
 Port of HULL  
 No. in Survey held at Hull Date, First Survey 16.7.34 Last Survey 24.7.1934  
 Reg. Book. on the Steel & K. "Aragonite" (Number of Visits 2)  
 Tons { Gross 314.80  
 Net 137.98  
 Built at Beverley By whom built Book, Welton & Gemmill Ltd. Yard No. 594 When built 1934-7  
 Owners Messrs Kingston Steam Trawling Co. Ltd. Port belonging to Hull  
 Electric Light Installation fitted by Wm Broady & Son Ltd. Contract No. When fitted 1934  
 Is the Vessel fitted for carrying Petroleum in bulk no.

System of Distribution Two wire - parallel.

Pressure of supply for Lighting 100 volts, Heating  volts, Power  volts.

Direct or Alternating Current, Lighting Direct Power

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

Position of Generators Starboard side of engine room., are they clear of all inflammable material Yes

is the ventilation in way of the generators satisfactory 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 adjacent to generator

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

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 D.P. linked

switch for generator. Outgoing circuits controlled by S.P. switches and protected by fuses on each pole.

Instruments on main switchboard One ammeters One 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

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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**Cables:** Single, twin, concentric, or multicore 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 1 Volt  
**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  
**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. cables with brass clips  
Armoured cables with G.I. clips  
 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 None  
**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 None  
 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 None  
**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 None  
**Secondary Batteries,** are they constructed and fitted as per Rule None  
**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 None  
 are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected None  
 how are the cables led None  
 where are the controlling switches situated   
**Searchlight Lamps, No. of** None, whether fixed or portable None, are their fittings as per Rule None  
**Arc Lamps,** other than searchlight lamps, No. of None, are their live parts insulated from the frame or case None, are their fittings as per Rule None  
**Motors,** are their working parts readily accessible None, are the coils self-contained and readily removable for replacement None  
 are the brushes, brush holders, terminals and lubricating arrangements as per Rule None, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material None  
 are they protected from mechanical injury and damage from water, steam or oil None are their axes of rotation fore and aft None  
 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 None  
 if not of this type, state distance of the combustible material horizontally or vertically above the motors None and None  
**Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule None  
**Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule None  
**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 None  
 If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office None

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 ...	<u>One</u>	<u>6</u>	<u>100</u>	<u>60</u>	<u>350</u>	<u>Steam</u>		
AUXILIARY ...								
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 ...	<u>1</u>	<u>0.06</u>	<u>19</u>	<u>0.064</u>	<u>46</u>	<u>83</u>	<u>24</u>	<u>V.I.R.</u>	<u>L.C.</u>
EQUALISE CONNECTIONS ...									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM ...	<u>1</u>	<u>0.0029</u>	<u>3</u>	<u>0.036</u>	<u>3.5</u>	<u>12</u>	<u>20</u>	<u>V.I.R.</u>	<u>L.C. + armoured</u>
BOILER ROOM ...	<u>1</u>	<u>0.0029</u>	<u>3</u>	<u>0.036</u>	<u>1.5</u>	<u>12</u>	<u>40</u>	<u>"</u>	<u>"</u>
AUXILIARY SWITCHBOARDS ...									
ACCOMODATION ...	<u>1</u>	<u>0.02214</u>	<u>7</u>	<u>0.064</u>	<u>12</u>	<u>46</u>	<u>150</u>	<u>"</u>	<u>"</u>
Navigation Main	<u>1</u>	<u>0.007</u>	<u>7</u>	<u>0.036</u>	<u>6</u>	<u>24</u>	<u>150</u>	<u>"</u>	<u>"</u>
WIRELESS ...							<u>150</u>	<u>"</u>	<u>"</u>
SEARCHLIGHT ...									
MASTHEAD LIGHT ...	<u>1</u>	<u>0.0029</u>	<u>3</u>	<u>0.036</u>	<u>2</u>	<u>12</u>	<u>150</u>	<u>"</u>	<u>"</u>
SIDE LIGHTS ...	<u>1</u>	<u>0.0029</u>	<u>3</u>	<u>0.036</u>	<u>2</u>	<u>12</u>	<u>30</u>	<u>"</u>	<u>L.C.</u>
COMPASS LIGHTS ...									
POOP LIGHTS ...	<u>1</u>	<u>0.0045</u>	<u>7</u>	<u>0.029</u>	<u>0.5</u>	<u>18.2</u>	<u>150</u>	<u>"</u>	<u>L.C. + armoured</u>
CARGO LIGHTS ...									
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.	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 ...										
VENTILATING FANS ...										

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.

**WM BROADY & SON**  
 93 BROAD STREET  
 HULL.

Electrical Engineers. Date 1 Aug. 1934.

**COMPASSES.**

Distance between electric generators or motors and standard compass 70 ft  
 Distance between electric generators or motors and steering compass  
 The nearest cables to the compasses are as follows:—  
 A cable carrying 0.5 Amperes to feet from standard compass ✓ feet from steering compass.  
 A cable carrying 0.5 Amperes to feet from standard compass ✓ feet from steering compass.  
 A cable carrying ✓ Amperes ✓ 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 no degrees on any course in the case of the standard compass, and no degrees on any course in the case of the steering compass.

COOK, WELTON & BENWELL, LTD.  
Official Builder's Signature. Date 30/7/1934.  
 Secretary & Director.

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

General Remarks (State quality of workmanship, opinions as to class, &c.) This electric lighting installation has been fitted on board in accordance with the Rules and when tried under working conditions was found satisfactory in every respect. This vessel is eligible in my opinion to have the notation "Electric Light."

Noted  
Mur  
7.8.34

Total Capacity of Generators 6 Kilowatts.

The amount of Fee E.L. £ 3 : 0 : { When applied for, 2 AUG 1934  
 Travelling Expenses (if any) £ : : { When received, 11.9.34

L. Moffatt.  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 10 AUG 1934

Assigned See other Rpt.  
Hull 36 45001

Im. 12.28.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

