

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

WED. DEC. 6 1922

Date of writing Report 5 Dec 22 When handed in at Local Office 5 Dec 22 Port of WEST HARTLEPOOL

No. in Survey held at West Hartlepool Date, First Survey 28 Jan 1921 Last Survey 29 Nov. 1922  
Reg. Book. S/S. Registrar (Number of Visits.....)

Built at West Hartlepool By whom built W. Gray & Co. Ltd. Yard No. 938 When built 1922  
Owners Frank Clarke Strick Port belonging to London

Electric Light Installation fitted by Clarke Chapman & Co. Ltd. Contract No. 938 When fitted 1922

System of Distribution Double Wire System.  
Pressure of supply for Lighting 110 volts, Heating 110 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 overload 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 and clearly marked yes. ✓, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited yes. ✓ Are the lubricating arrangements of the generators as per Rule yes. ✓

Position of Generators 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 axis 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, starboard side, near Generators.  
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, incombustible 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 connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework yes. ✓, and is the frame effectively earthed yes. ✓

Are the following fittings as per Rule, viz.: — 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 switch & fuses on dynamo mains. Double pole switch & double pole fuses on each outgoing circuit.

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 through switches to earth. ✓

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes. ✓

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes. ✓



**Insulation of Cables**, state type of cables, single or twin single are the cables insulated and protected as per Tables III ~~IV~~ of the Rules. yes

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 2.5

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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 Main cables run in tween deck spaces, clipped to underside of deck by means of galvanized iron clips. Cables in accommodation clipped up by brass 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 VI 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 Positions**, 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 Contracted for with old rules, are separate screens provided for the use of oil and electric side lights yes are separate oil lanterns provided for the mast head lights and side lights 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 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 no how are the cables led \_\_\_\_\_ where are the controlling switches situated \_\_\_\_\_

**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 axis 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 \_\_\_\_\_ and \_\_\_\_\_

**Control Gear and Resistances**, are the generator field and motor speed regulators, starters and controllers constructed 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 \_\_\_\_\_ If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office \_\_\_\_\_

**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	1-20	110	182 46	300 350	Open type single cylinder steam engines.		
AUXILIARY ...								
EMERGENCY ...								
ROTARY TRANSFORMER								

**LIGHTING AND HEATING CONDUCTORS.**

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amps.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
1	MAIN GENERATOR...	2	24650	24	13	182	20	Pure India Rubber	Braided & Compd.
2	AUXILIARY GENERATOR	2	03960	4	14	46	20	R <sup>c</sup>	R <sup>c</sup>
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
3	BOILER ROOM	2	01046	4	18	22.45	20	R <sup>c</sup>	Lead Cov. & Arm <sup>d</sup>
4	Engineers & Saloon	2	02214	4	16	45.5	60	R <sup>c</sup>	R <sup>c</sup>
5	Wireless & Aft.	2	00455	1	14	11.3	60	R <sup>c</sup>	R <sup>c</sup>
6	Navigation	2	00455	1	14	10.5	240	R <sup>c</sup>	R <sup>c</sup>
7	WIRELESS	2	02214	4	16	25	80	R <sup>c</sup>	R <sup>c</sup>
	SEARCHLIGHT								
	MASTHEAD LIGHT...	2	00194	3	22	1.1	120	R <sup>c</sup>	In Iron Pipes.
	SIDE LIGHTS ...	2	00194	3	22	1.1	20	R <sup>c</sup>	Braided & Compounded
	COMPASS LIGHTS ...	2	00152	1	18	.5	10	R <sup>c</sup>	Lead Covered.
	DECK LIGHTS	2	00152	1	18	1.1	50	R <sup>c</sup>	R <sup>c</sup>
8	CARGO LIGHTS	2	06000	19	16	40.5	50	R <sup>c</sup>	Lead Cov. & Arm <sup>d</sup>
	ARC LAMPS ...								
	HEATERS								

**MOTOR CONDUCTORS.**

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amps.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	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								
9	WORKSHOP MOTOR	One	06000	19	16	64.8	110	Pure India Rubber	Lead Cov. & Arm <sup>d</sup>
10	VENTILATING FANS								
	Refrigerating Motor	One	06000	19	16	50.8	195	R <sup>c</sup>	R <sup>c</sup>

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 Clarke, Chapman & Co., Ltd.  
*W. W. Underwood*  
Director.

Electrical Engineers.

Date *Nov. 23rd 1922.*

COMPASSES.

Distance between electric generators or motors and standard compass *86 feet*

Distance between electric generators or motors and steering compass *80 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying *.5* Ampères *12* feet from standard compass *6* feet from steering compass.

A cable carrying *.5* Ampères *6* feet from standard compass *12* 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

The maximum deviation due to electric currents was found to be *nil* degrees on *all* course in the case of the standard compass, and *nil* degrees on *all* course in the case of the steering compass.

For William Gray & Co. Limited

*Stephenson*  
Secretary

Builder's Signature.

Date

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *5/5 "Arvistane"*

General Remarks (State quality of workmanship, opinions as to class, &c. *This installation has been fitted under Special Permit. The materials and workmanship are good. On completion it was tried under full working conditions and found satisfactory.*

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

*Elec. Light*  
*C.H.D.*  
*8/12/22*

Total Capacity of Generators *25* Kilowatts

The amount of Fee ... £ *20 : 0* : { When applied for, *27.11.22.*

Travelling Expenses (if any) £ : : { When received, *28.11.22.*

*R.D. Shilston.*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

1m. 3.22.—Transfer.  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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