

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 13 NOV 1924

Date of writing Report 11 Nov 1924. When handed in at Local Office 19 Port of Barrow-in-Furness

No. in Survey held at Barrow. Date, First Survey 10th Aug Last Survey Sept 28th 1924  
Reg. Book. (Number of Visits.....)

88528 on the S.S. "Dearne" Tons {Gross 1043  
Net 424

Built at Barrow. By whom built Bickers Ltd. Yard No. 611 When built 1924

Owners London, Midland & Scottish Railway Co. Ltd. Port belonging to Gole.

Electric Light Installation fitted by Bickers Ltd. Contract No. 611 When fitted 1924

System of Distribution Double pole - two wire - looping in

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 ✓

Generators, do they comply with the requirements regarding overload ✓, are they compound wound ✓  
are they over compounded 5 per cent. No, 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 ✓

Are all terminals accessible and clearly marked ✓, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited ✓ Are the lubricating arrangements of the generators as per Rule ✓

Position of Generators Engine room lower platform (Starboard side)

is the ventilation in way of the generators satisfactory ✓, are they clear of all inflammable material ✓

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 ✓

are their axis of rotation fore and aft ✓

Earthing, are the bedplates and frames of the generating plant efficiently earthed ✓ are the prime movers and their respective generators in metallic contact ✓

Main Switch Boards, where placed Alongside Dynamo.  
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 ✓, are they protected from mechanical injury and damage from water, steam or oil ✓ so far as practicable, 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 ✓, is all insulation of high dielectric strength and of permanently high insulation resistance No. Slate base, 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 ✓, and is the frame effectively earthed ✓

Are the following fittings as per Rule, viz.:— spacing or shielding of live parts ✓, accessibility of all parts ✓, absence of fuses on back of board ✓, proportion of omnibus bars ✓, individual fuses to voltmeter, pilot or earth lamp ✓, connections of switches ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches No equalizer

In Dynamo - 2 HP switches In Branch circuits - 2 HP switches

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 Two lamps, switches & fuses

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

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



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

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 14 volts

**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 no paper cables used

**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 Supported by clips to bulkheads underside of decks. Protected by Armoring, lead sheathing & tubing.

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 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

**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 Yes, are their connections made as per Rule Yes

**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 Yes, 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 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 Yes, how are the cables led Yes

where are the controlling switches situated Yes

**Searchlight Lamps**, No. of 1, whether fixed or portable Yes, are their fittings as per Rule Yes

**Arc Lamps**, other than searchlight lamps, No. of 1, 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 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 Yes and Yes

**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 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	1	10	100	100	360	Decapreciating Steam Engine		
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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	.1	19	.023	100 ✓	30	V.I.R.	Lead Covered Armoured
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.0145	Y	.052	14.5 ✓	12	V.I.R.	Lead Covered & Armoured
	BOILER ROOM								
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.072	3	.029	2 ✓	200 & 300	V.I.R.	HT in Conduits
	SIDE LIGHTS	2	.072	3	.029	2 ✓	40	"	"
	COMPASS LIGHTS	2	.072	3	.029	2.5 ✓	40	"	"
	POOP LIGHTS	2	.072	3	.029	1 ✓	40	"	"
	CARGO LIGHTS	2	.072	3	.029	2.4 ✓	120 & 240	"	"
	ARC LAMPS								
	HEATERS								

**MOTOR CONDUCTORS.**

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	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								
	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.

For VICKERS Limited.

*B. H. Jam* Director, Electrical Engineers.

Date 17/11/24.

COMPASSES.

Distance between electric generators ~~or motors~~ and standard compass 80 ft.

Distance between electric generators ~~or motors~~ and steering compass 100 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 6 ft. feet from standard compass 6 ft. feet from steering compass.

A cable carrying 4 Ampères 3 feet from standard compass 4 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 1/2 degrees on all course in the case of the standard compass, and 1/2 degrees on all course in the case of the steering compass.

For VICKERS Limited.

*B. H. Jam* Director, Builder's Signature.

Date 17/11/24

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 efficiently fitted, and proved satisfactory under working conditions. In my opinion the vessel is eligible to have the notation of "Electric light" made in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. Elec. Light. *R. A. Jam* 20/11/24.

Total Capacity of Generators 10 Kilowatts

The amount of Fee ... £ 10 : - : When applied for, 22nd Sept 1924  
Travelling Expenses (if any): £ : : When received, 22nd Sept 1924

*Wm Cowie* Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

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