

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 30,028

Port of Hull Date of First Survey 26.7.17 Date of Last Survey 4-7-17 No. of Visits 3  
 No. in Reg. Book 799 on the ~~iron~~ Steel Stawler Max Pemberton Port belonging to Hull  
 Built at Lilloy By whom Bochum & Sons Ltd When built 1917-7  
 Owners Livington Steam Towing Co Owners' Address St Andrew's Dock Hull  
 Yard No. 672 Electric Light Installation fitted by The Humber Electrical Eng Co When fitted 1917-7

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

Open Type Robey Engine direct coupled to 4 Pole Compound  
wound Dynamo by J H Holmes  
 Capacity of Dynamo 30 Amperes at 100 Volts, whether continuous or alternating current Direct  
 Where is Dynamo fixed Starboard Eng Room Whether single or double wire system is used Double  
 Position of Main Switch Board Starboard Eng Room having switches to groups Three of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each One 3 way Torcottle One 10 way  
Wheelhouse One 3 way Eng Room One 5 way aft Cabins

If fuses are fitted on main switch board to the cables of main circuit no and on each auxiliary switch board to the cables of auxiliary circuits Yes and at each position where a cable is branched or reduced in size Yes and to each lamp circuit Yes  
 If vessel is wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits  
 Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 25% per cent over the normal current  
 Are all fuses fitted in easily accessible positions Yes Are the fuses of standard dimensions Yes If wire fuses are used  
 Are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit Yes  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for = 55 - 16 CP arranged in the following groups :-

A	8	lights each of	16	candle power requiring a total current of	4.4	Amperes
B	29	lights each of	16	candle power requiring a total current of	16.	Amperes
C	6	lights each of	16	candle power requiring a total current of	3.3	Amperes
D	12	lights each of	16	candle power requiring a total current of	6.6	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	3	Mast head light with 1 lamps each of	32	candle power requiring a total current of	Included in	Amperes
	2	Side light with 1 lamps each of	32	candle power requiring a total current of	" "	Amperes
	2	Cargo lights of <u>one 6-16cp one 2 candle</u> power, whether incandescent or arc lights				

If arc lights, what protection is provided against fire, sparks, &c. No Arcs  
to wheel house  
 Where are the switches controlling the masthead and side lights placed

### DESCRIPTION OF CABLES.

Main cable carrying	30	Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	5	Amperes, comprised of	3	wires, each	20	S.W.G. diameter,	.003	square inches total sectional area
Branch cables carrying	16	Amperes, comprised of	7	wires, each	20	S.W.G. diameter,	.007	square inches total sectional area
Leads to lamps carrying	7	Amperes, comprised of	3	wires, each	20	S.W.G. diameter,	.003	square inches total sectional area
Cargo light cables carrying	4	Amperes, comprised of	140	wires, each	36	S.W.G. diameter,	.002	square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered Armoured U.I.R. Twin Cable Lead Covered  
ditto single Cable

Joints in cables, how made, insulated, and protected No joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances — Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage

Are there any joints in or branches from the cable leading from dynamo to main switch board No  
 How are the cables led through the ship, and how protected Clipped up direct to steel work Decks  
When B & A Cable is used

**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible Yes

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead Armoured

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead Armoured

What special protection has been provided for the cables near boiler casings Lead Armoured

What special protection has been provided for the cables in engine room Lead Armoured

How are cables carried through beams Clear Holes through bulkheads, &c. Bron Gland

How are cables carried through decks Deck Pipes

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Lead Armoured

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage No

If so, how are the lamp fittings and cable terminals specially protected —

Where are the main switches and fuses for these lights fitted —

If in the spaces, how are they specially protected —

Are any switches or fuses fitted in bunkers No

Cargo light cables, whether portable or permanently fixed Portable How fixed —

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel —

How are the returns from the lamps connected to the hull —

Are all the joints with the hull in accessible positions —

Is the installation supplied with a voltmeter Yes, and with an amperemeter Yes, fixed Main Board

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, fuses, or joints of cables fitted in the pump room or companion

How are the lamps specially protected in places liable to the accumulation of vapour or gas

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

**THE HUNBER ELECTRICAL ENGINEERING CO**  
*W. E. Shuttleworth* Electrical Engineers Date July 12<sup>th</sup> 1917.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 40ft

Distance between dynamo or electric motors and steering compass "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>2</u>	Amperes	<u>lead to</u>	feet from standard compass	<u>lead to</u>	feet from steering compass
A cable carrying	<u>2</u>	Amperes	<u>lead to</u>	feet from standard compass	<u>lead to</u>	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

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

**FOR COCHRANE & SONS, LTD.**  
*J. H. Cochrane* Builder's Signature. Date 16/7/1917.

**GENERAL REMARKS.** This vessel has been fitted with an electric light installation as above & the workmanship is good, on completion it was tried under full working conditions & found satisfactory

It is submitted that this vessel is eligible for THE RECORD. Elec. light. *J. W. D.* 19/7/17  
*Frank A. Sturgeson*  
 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.