

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No 46.205

Port of Newcastle-on-Tyne Date of First Survey Nov 27 Date of Last Survey Dec 11 '03 No. of Visits 6
 No. in Reg. Book on the Iron or Steel S/S Rabenfels Port belonging to Beumen.
 Built at Newcastle By whom Swan Hunter & W. Richardson When built 1903
 Owners Deutsche Dampfschiffahrts Ges Owners' Address Beumen.
 Yard No. 407 Electric Light Installation fitted by Messrs Clarke Chapman & Co. Ltd. When fitted 1903

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One vertical, compound, double acting open Type Engine direct coupled to continuous current compound wound dynamo.

Capacity of Dynamo 120 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine room, lower platform, Starboard Side.

Position of Main Switch Board Bulkhead near dynamo having switches to groups A.B.C.D.E. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each, each light is provided with a switch fitted close to light.

If cut outs are fitted on main switch board to the cables of main circuit yes 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits yes

Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of 50 per cent over the normal current

Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 98-164 arranged in the following groups:—

A	30	lights each of	16	candle power requiring a total current of	16.4	Amperes
B	27	lights each of	16	candle power requiring a total current of	14.8	Amperes
C	32	lights each of	16	candle power requiring a total current of	17.5	Amperes
D	9	lights each of	16	candle power requiring a total current of	4.9	Amperes
E	1-20" <u>Suez Canal Proj</u>	lights each of	20,000 c.p. <u>nominal</u>	candle power requiring a total current of	60.	Amperes
	2	Mast head light with 1 lamps each of	32	candle power requiring a total current of	2.2	Amperes
	2	Side lights with 1 lamps each of	32	candle power requiring a total current of	2.2	Amperes
	2	Cargo lights of each	7-16	candle power, whether incandescent or arc lights	<u>incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c. Totally enclosed in hexagonal clear glass lantern 2-15 amperes. Arc Lamp.

Where are the switches controlling the masthead and side lights placed in Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying	119.6	Amperes, comprised of	19	wires, each	13	L.S.G. diameter, .1249	square inches total sectional area
Branch cables carrying	16.4	Amperes, comprised of	7	wires, each	17	L.S.G. diameter, .017	square inches total sectional area
Branch cables carrying	4.9	Amperes, comprised of	1	wires, each	14	L.S.G. diameter, .005	square inches total sectional area
Leads to lamps carrying	.6	Amperes, comprised of	1	wires, each	18	L.S.G. diameter, .0018	square inches total sectional area
Cargo light cables carrying	4.2	Amperes, comprised of	7	wires, each	20	L.S.G. diameter, .007	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber taped and braided and lead covered overall & where exposed steel armoured over the lead covering.

Joints in cables, how made, insulated, and protected No joints except mechanical ones.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux Yes 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 Yes. No

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 Lead covered and steel armoured secured by brass and wrought iron clips, & fixed close up to deck.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible no

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture lead covered and steel armoured

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead covered & steel armoured

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

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

How are cables carried through beams in bushes through bulkheads, &c. in watertight glands.

How are cables carried through decks in galvanized iron watertight deck tubes.

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

If so, how are they protected lead covered & steel armoured fixed close up to deck

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 cut outs for these lights fitted _____

If in the spaces, how are they specially protected _____

Are any switches or cut outs fitted in bunkers no

Cargo light cables, whether portable or permanently fixed portable How fixed in C.I. Watertight Boxes

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

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

Are all the joints with the hull in accessible positions _____

VESSELS BUILT FOR CARRYING PETROLEUM.

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

Are any switches, cut outs, 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 installation is now supplied with a voltmeter and also an amperemeter, fixed main switchboard

The copper used is guaranteed to have a conductivity of 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile after 24 hours' immersion in seawater.

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.

For CLARKE, CHAPMAN & Co. LTD.

Electrical Engineers

Date Decem 11th 1903

COMPASSES.

Distance between dynamo or electric motors and standard compass Director 96 feet

Distance between dynamo or electric motors and steering compass 98 feet

The nearest cables to the compasses are as follows:—

Cable	Amperes	Feet from standard compass	Feet from steering compass
A cable carrying <u>7.2</u>	<u>9</u>	<u>11</u>	feet from steering compass
A cable carrying <u>3</u>	<u>5</u>	<u>7</u>	feet from steering compass
A cable carrying <u>✓</u>	<u>✓</u>	<u>✓</u>	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 0 degrees on the course in the case of the standard compass and 0 degrees on the course in the case of the steering compass.

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

Builder's Signature. Date 14 Dec 1903.

GENERAL REMARKS.

The installation has been examined & found satisfactory.

John H Heck.

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

It is submitted that this installation appears to be satisfactory.

Lloyd's Register Foundation

17.12.03

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.