

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 354

Port of Bremen Date of First Survey 30th Dec 13 Date of Last Survey 27th Jan 1914 No. of Visits 6  
 No. in Reg. Book on the Iron or Steel SC SR "FRANKENFELS" Port belonging to Bremen  
 Built at Bremen By whom Art. G. Meyer When built 1914  
 Owners Deutsche Dampfkraftfabrik G. m. b. H. Hamburg Owners' Address Bremen  
 Yard No. 202 Electric Light Installation fitted by Deutsche Siemens-Schuckert Werke When fitted 1914

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound wound dynamo Siemens Schuckert type directly coupled to one compound steam engine.

Capacity of Dynamo 122 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed in the Engine room Whether single or double wire system is used double

Position of Main Switch Board in the Engine room having switches to groups 4 for groups of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one in Engine room with 6 switches, one in room for steering engine with two switches, one near saloon with 10 switches, one in fore-castle with 4 switches, 1 aft with 4 switches.

If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes

Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 100 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, on porcelain & marble

Total number of lights provided for 189 arranged in the following groups:—

|   |                        |                   |      |  |            |         |
|---|------------------------|-------------------|------|--|------------|---------|
| A | Engine & Boilers       | 89 lights each of | 16   | candle power requiring a total current of        | 45         | Amperes |
| B | Fore ship              | 19 lights each of | 16   | candle power requiring a total current of        | 8.5        | Amperes |
| C | Midship                | 28 lights each of | 16   | candle power requiring a total current of        | 40         | Amperes |
| D | Aft                    | 3 lights each of  | 16   | candle power requiring a total current of        | 1.5        | Amperes |
| E |                        | lights each of    |      | candle power requiring a total current of        |            | Amperes |
|   | 2 Mast head light with | 2 lamps each of   | 25   | candle power requiring a total current of        | 1.6        | Amperes |
|   | 2 Side light with      | 2 lamps each of   | 32   | candle power requiring a total current of        | 2.2        | Amperes |
|   | 2 Cargo lights of      |                   | 2000 | candle power, whether incandescent or arc lights | arc lights |         |

If arc lights, what protection is provided against fire, sparks, &c. glass globes enclosed in wire with ashtray

Where are the switches controlling the masthead and side lights placed in the chart house.

## DESCRIPTION OF CABLES.

Main cable carrying 120 Amperes, comprised of 19 wires, each 2.52 S.W.G. diameter, 9.5 square inches total sectional area

Branch cables carrying 40 Amperes, comprised of 19 wires, each 1.53 S.W.G. diameter, 3.5 square inches total sectional area

Branch cables carrying 35 Amperes, comprised of 2 wires, each 2.13 S.W.G. diameter, 2.5 square inches total sectional area

Leads to lamps carrying 5 Amperes, comprised of 1 wires, each 1.38 S.W.G. diameter, 1.5 square inches total sectional area

Cargo light cables carrying 9 Amperes, comprised of 1 wires, each 2.26 S.W.G. diameter, 6 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main and branch cables are insulated by vulcanized rubber lead sheath and iron armed (double steel)

Joints in cables, how made, insulated, and protected watertight boxes.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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

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 partly laid in channels of iron partly protected by covered clips.



**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 Laid in iron

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

What special protection has been provided for the cables near boiler casings covered by steel

What special protection has been provided for the cables in engine room covered by steel

How are cables carried through beams iron pipes through bulkheads, &c. stuffing boxes

How are cables carried through decks iron pipes partly brass stuffing boxes.

Are any cables run through coal bunkers No or cargo spaces No or spaces which may be used for carrying cargo, stores, or baggage No

If so, how are they protected ✓

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 on main switch 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 500 <sup>ohms</sup> ~~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.

W. S. Meyer & Co. Ltd.

Electrical Engineers

Date 2. Februar 1914

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 9.5 meters

Distance between dynamo or electric motors and steering compass 8.5 - - -

The nearest cables to the compasses are as follows:—

|                  |           |         |  |  |
|------------------|-----------|---------|--|--|
| A cable carrying | <u>4</u>  | Amperes | <u>3.0 meters</u> feet from standard compass | <u>3.5 meters</u> feet from steering compass |
| A cable carrying | <u>40</u> | Amperes | <u>7.0</u> " feet from standard compass      | <u>5.5</u> " feet from steering compass      |
| A cable carrying | <u>25</u> | Amperes | <u>7.5</u> " feet from standard compass      | <u>7.0</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 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.

**ACTION-GESELLSCHAFT "WESER"**

Schumann Number

Builder's Signature.

Date 5. Februar 1914

**GENERAL REMARKS.**

This installation has been tried on a 12 hours trial trip and has been found to work well, so that in my opinion the notation "Electric light" might be added to the Vessel's class in the Register Book.

It is submitted that this vessel is eligible for **TIN RECORD. Elec. light**

J.W.D. 1/2/14

U. H. C. Ham

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

Committee's Minute

Im. 4. 12. — Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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