

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 14265

Port of *Hamburg* Date of First Survey *18th April 14* Date of Last Survey *31st July 14* No. of Visits *15*
 No. in on the *Iron* or Steel *Twin Sc. Motor Vessel "Fritz"* Port belonging to *Hamburg*
 Book Built at *Hamburg* By whom *Holm & Vof* When built *1912*
 Owners *Holm & Vof* Owners' Address *Hamburg*
 Card No. *207* Electric Light Installation fitted by *the Builders* When fitted *1914*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Diesel motors, 4 stroke cycle, 3 cylinders, coupled direct to Siemens Schuckerts Dynamos run. 200-500 rev. m.
1 Swidersky Hot Bull motor, coupled direct to a Siemens Schuckert Dynamo run. at 320 rev. per minute
 Capacity of Dynamo *1st 288-2nd 60* *Hot Bull* Amperes at *220* Volts, whether continuous or alternating current *continuous*
 Where is Dynamo fixed *Engine Room* Whether single or double wire system is used *double*
 Position of Main Switch Board *Eng. Room* having switches to groups *A, D, C, & E.* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *1 Eng. Room with 28 switches, 1 Steering house with 12 switches, 1 Pantry with 8 switches, 1 Forecastle with 4 switches, 1 Chart house with 6 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

Are the fuses of non-oxidisable 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 *289* arranged in the following groups:—

<i>Room & 2. M. Space</i>	<i>92 lights each of</i>	<i>16</i>	candle power requiring a total current of	<i>8.3</i>	Amperes
<i>Forecastle</i>	<i>91 lights each of</i>	<i>16</i>	candle power requiring a total current of	<i>7.7</i>	Amperes
<i>" "</i>	<i>42 lights each of</i>	<i>16</i>	candle power requiring a total current of	<i>3.6</i>	Amperes
<i>Forecastle</i>	<i>28 lights each of</i>	<i>16</i>	candle power requiring a total current of	<i>2.43</i>	Amperes
<i>Chart house</i>	<i>36 lights each of 5 off 25 - 31 off 16</i>		candle power requiring a total current of	<i>3.37</i>	Amperes
<i>in 2 Mast head light with</i>	<i>1 lamps each of</i>	<i>25</i>	candle power requiring a total current of	—	Amperes
<i>in 2 Side light with</i>	<i>1 lamps each of</i>	<i>25</i>	candle power requiring a total current of	—	Amperes
<i>in 1 Horn "</i>	<i>1 "</i>	<i>25</i>			
<i>in 4 C. 4 Cargo lights of each</i>		<i>1000</i>	candle power, whether incandescent or are lights	<i>18.2</i>	"

Are lights, what protection is provided against fire, sparks, &c. *no are lights fitted*

Where are the switches controlling the masthead and side lights placed *Chart house*

DESCRIPTION OF CABLES.

2 Diesel motors for light for power *Hot bull*
 steering cable carrying *44424760* Amperes, comprised of *37, 19* wires, each *2.26 - 2.17* S.W.G. diameter, *150 - 10* square inches total sectional area
 steering cable carrying *8* Amperes, comprised of *1* wires, each *2.26* S.W.G. diameter, *4* square inches total sectional area
 branch cables carrying *4* Amperes, comprised of *1* wires, each *1.38* S.W.G. diameter, *1.5* square inches total sectional area
 leads to lamps carrying *1* Amperes, comprised of *1* wires, each *1.38* S.W.G. diameter, *1.5* square inches total sectional area
 cargo light cables carrying *5* Amperes, comprised of *1* wires, each *1.38* S.W.G. diameter, *1.5* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

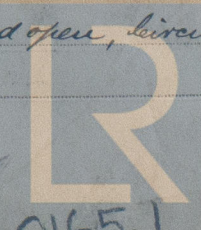
main and branch cables, copper tinned, coated with Para caoutchouc, coated with impregnated tape, lead covered, spun with impregnated jute band, double iron bound + jute spun + asphalted.
lights & lamp leads: copper tinned, coated with caoutchouc + rubber, and spun with tape insulation.
 joints in cables, how made, insulated, and protected *Soldered and covered with caoutchouc and tape for lamp circuits*
 and leads, metallic screw joints in water tight boxes on incombustible bases for main and branch cables.

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 *Main and branch cables carried open, circuits to lamp leads are protected by wood batten.*



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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 *Iron bound leads covered cables*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Iron bound cables*

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

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

How are cables carried through beams *hard wood, bushes* through bulkheads, &c. *screwed brass bushes*

How are cables carried through decks *Iron galvanized stand pipes 12" high, filled with non-conducting material*

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*

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 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, and the wires are protected by tinning from the sulphur compounds present in the atmosphere.

Insulation of cables is guaranteed to have a resistance of not less than 50 *million* megohms per mile after 24 hours' immersion in water, the test being made after one minute's electrical test and while the cable is still immersed.

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

The Builders are the Electrical Engineers

COMPASSES.

Distance between dynamo or electric motors and standard compass *50 ft*

Distance between dynamo or electric motors and steering compass *55 ft*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>1</i>	Amperes	<i>close to</i>	<i>feet from standard compass</i>
A cable carrying	<i>—</i>	Amperes	<i>—</i>	<i>feet from standard compass</i>
A cable carrying	<i>—</i>	Amperes	<i>—</i>	<i>feet from standard compass</i>

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 *—* course in the case of *—* compass and *imperceptible* degrees on *—* course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS.

The Electric Light installation on board of this Vessel is fitted in conformity with the Society's Rules and eligible, in my opinion, to be recorded "Elect. Light" in the Society's Register Book.

J. Köhler

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

Committee's Minute

FRI. JUL. 16 1920

FRI. NOV. 19 1921

FRI. DEC. 14 1921

FRI. AUG. 31 1920



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