

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3537

Port of Middlesbrough Date of First Survey 24th Nov. 1902 Date of Last Survey 7th Jan. 1903 No. of Visits Seven
 No. in Reg. Book 30 Supp. on the Iron or Steel J. I. Heikto's Port belonging to Helsingfors
 Built at Middlesbrough By whom R. Craggs & Sons When built 3-03
 Owners Atteub Finska Lloyd Owners' Address Helsingfors
 Yard No. 180 Electric Light Installation fitted by Finska Elektriska Aktiebolaget When fitted 1903

DESCRIPTION OF DYNAMO, ENGINE, ETC.

The dynamo is of covered type with ring lubricating bearings and coalbrushes and is directly coupled to a vertical high pressure engine, number of revolutions 670

Capacity of Dynamo 50 Amperes at 65 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed in the engine room

Position of Main Switch Board in the engine room having switches to groups five of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each none

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 100 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 14 arranged in the following groups:—

A	<u>4</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>5.3</u>	Amperes
B	<u>4</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>5.3</u>	Amperes
C	<u>4</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>5.3</u>	Amperes
D	<u>1 arc</u>	lights each of		candle power requiring a total current of	<u>15</u>	Amperes
E	<u>1 arc</u>	lights each of		candle power requiring a total current of	<u>15</u>	Amperes
—	Mast head light with	— lamps each of		candle power requiring a total current of		Amperes
—	Side light with	— lamps each of		candle power requiring a total current of		Amperes
	<u>14</u>	Cargo lights of	<u>as above</u>	candle power, whether incandescent or arc lights		Amperes

If arc lights, what protection is provided against fire, sparks, &c. metal and glass cased in holds

Where are the switches controlling the masthead and side lights placed yes

DESCRIPTION OF CABLES.

Main cable carrying 50 Amperes, comprised of 7 wires, each 17/100 L.S.G. diameter, 1/40 square inches total sectional area
 Branch cables carrying 15 Amperes, comprised of 19 wires, each 0.53/100 L.S.G. diameter, 1/160 square inches total sectional area
 Branch cables carrying 53 Amperes, comprised of 7 wires, each 0.68 L.S.G. diameter, 1/258 square inches total sectional area
 Leads to lamps carrying 15 Amperes, comprised of 20 wires, each 0.24 L.S.G. diameter, 1/645 square inches total sectional area
 Cargo light cables carrying 15 Amperes, comprised of 407 wires, each 0.35 L.S.G. diameter, 1/40 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

The insulation resistance of the wires is 500 megohms per kilometre. The wires are every where protected by brass covered water tight tubes of insulating material, which tubes are further laid in wood casings. Joints in cables, how made, insulated, and protected All joints are thoroughly soldered and insulated with India rubber

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 Some in holds

Are there any joints in or branches from the cable leading from dynamo to main switch board not in brass junction boxes

How are the cables led through the ship, and how protected the cables are led through the ship as already described in two or three tubes alongside the ship. In the case of junctions junction boxes are used.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible in upper holds & upper bunkers

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture In the holders the handlamps only are exposed to weather and moisture and the cables to these lamps are therefore protected with tubs of vulcanised india rubber. The cables to the arc lamps are protected by galvanised wire armour.

What special protection has been provided for the cables near galley or oil lamps or other sources of heat No cables near oil lamps or other sources of heat

What special protection has been provided for the cables near boiler casings No cables near boiler casings

What special protection has been provided for the cables in engine room No special protection Bergmann pipes

How are cables carried through beams Bergmann pipes through bulkheads, &c. Bergmann pipes

How are cables carried through decks No cables carried through decks

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 as described on the other side.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage yes, cargo holds only

If so, how are the lamp fittings and cable terminals specially protected The cables are carried through the tubes mentioned direct in the lamp fittings which are provided with strong covers of cast iron

Where are the main switches and cut outs for these lights fitted in the engine room

If in the spaces, how are they specially protected not in the spaces

Are any switches or cut outs fitted in bunkers not

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 —

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 — supplied with a voltmeter and — an amperemeter, fixed in engine room

The copper used is guaranteed to have a conductivity of 99.5 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 300 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.

FINNSKA ELEKTRISKA AKTIEBOLAGET

Gustaf Ritting
J. Ljermvall

Electrical Engineers

Date —

COMPASSES.

Distance between dynamo or electric motors and standard compass —

Distance between dynamo or electric motors and steering compass —

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying	Amperes	feet from standard compass	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 —

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

Builder's Signature. —

Date —

REPORT FORM No. 12.

GENERAL REMARKS. This installation is for Cargo purposes only. It has been fitted under survey. The workmanship is good. After completion it has been seen at work satisfactorily

R.D. Shilston.

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

Committee's Minute —



© 2020

Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.