

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5008.

Port of Gothenburg Date of First Survey 8th December 1921 Date of Last Survey 4th March 1921 No. of Visits 10
 No. in on the Iron or Steel S.S. "TOLKEN" Port belonging to Gothenburg
 Reg. Book Supplement Built at Gothenburg By whom Aktiebolaget Lindholm-Motala When built 1922
 Owners Rederi A/B Transatlantic Owners' Address Gothenburg
 Yard No. S/S 442 Electric Light Installation fitted by Nya Luth & Roséns Elektr. A/Bol. When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Direct current dynamo coupled to steam-engine

Capacity of Dynamo 110 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 wire

Position of Main Switch Board in the engine-room having switches to groups 7 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one (A) of 2 groups in the after-accommodation one (B) of 4, and one (C) of 4 groups in the officers-accommodation, one (D) of 11 groups in the saloon-accommodation, one (E) of 7 groups in the head-accommodation, one (F) of 5 groups in the chart-room, and one (G) of 5 groups in the engine-room.

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

Total number of lights provided for 196 arranged in the following groups:—

| | | | | | | |
|----|----------------------|----------------|---------------|--|---|--------------|
| A | 15 | lights each of | 16-25 | candle power requiring a total current of | 3 | Amperes |
| B | 17 | lights each of | " | " | 4 | " |
| C | 26 | lights each of | " | candle power requiring a total current of | 6 | Amperes |
| D | 68 | lights each of | " | " | 15 | " |
| E | 34 | lights each of | " | candle power requiring a total current of | 7 | Amperes |
| F | 5 | lights each of | 32 | candle power requiring a total current of | 5 | Amperes |
| G | 31 | lights each of | 16-25 | candle power requiring a total current of | 12 | Amperes |
| 2 | Mast head light with | 1 | lamps each of | 32 | candle power requiring a total current of | 2 |
| 2 | Side light with | 1 | lamps each of | 32 | candle power requiring a total current of | 2 |
| 10 | Cargo lights of | | 150 | candle power, whether incandescent or arc lights | | incandescent |

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed in the chart-room

DESCRIPTION OF CABLES.

Main cable carrying 47 Amperes, comprised of 19 wires, each 2.17 mm S.W.G. diameter, 70 mm² square inches total sectional area

Branch cables carrying 12 Amperes, comprised of 7 wires, each 1.35 " S.W.G. diameter, 10 " square inches total sectional area

Branch cables carrying 6 Amperes, comprised of 7 wires, each 0.67 " S.W.G. diameter, 2.5 " square inches total sectional area

Leads to lamps carrying 2 Amperes, comprised of 7 wires, each 0.52 " S.W.G. diameter, 1.5 " square inches total sectional area

Cargo light cables carrying 3 Amperes, comprised of 7 wires, each 0.67 " S.W.G. diameter, 2.5 " square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables are insulated with vulcanized rubber lead armour covered with rubber tape. Where necessary tape and steel armour is used.

Joints in cables, how made, insulated, and protected by porcelain boxes and, where required, by watertight metal 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 by steel clips, screwed fast and where required protected by iron pipes.



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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 protected by lead and steel armour

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

What special protection has been provided for the cables near boiler casings lead and steel armoured

What special protection has been provided for the cables in engine room lead and steel armoured

How are cables carried through beams on cables carried through beams and through bulkheads, &c. are steel armoured

How are cables carried through decks through ironpipes

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

If so, how are they protected steel armoured and ironpipes where required

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 switchboard

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 1000 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.

NYA LUTH & ROSÉNS ELEKTRISKA AKTIEBOLAG

Electrical Engineers

Date 6/3 1922.

COMPASSES.

Herman Duse
Broerhustansen

Engineroom to flying bridge

Distance between dynamo or electric motors and standard compass

Engineroom to flying bridge

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.

AKTIEBOLAGET LINDHOLMEN-MOTALA

Builder's Signature.

Date 10/3-1922.

GENERAL REMARKS.

This electric lighting installation has been fitted on board under our inspection and has been tested and found satisfactory. All the Rule requirements have been complied with.

It is submitted that this vessel is eligible for THE RECORD. Elec. Light.

Fee: Kr. 220:00.

Applied for 10th March 1922. 17/3/22

W. Adulow *Osundin*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 4 APR. 1922

2nd Ed. 1920. Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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