

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 12599

Port of Rottterdam Date of First Survey 20 Oct Date of Last Survey 15 Nov. No. of Visits 4
 No. in on the Iron or Steel S.S. Field Marshal Port belonging to Lima
 Reg. Book new name LING NAM Built at Shanghai By whom Reichert & Schilling When built 1903
 Owners Chungwa Navigation Co Owners' Address Shanghai
 Yard No. Electric Light Installation fitted by ? When fitted 1903

DESCRIPTION OF DYNAMO, ENGINE, ETC.

3 Dynamo's compound wound, protected, direct coupled to cylinder
steam engine, 100 lbs.
 Capacity of Dynamo's 250 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed in Engine room Whether single or double wire system is used single wire
 Position of Main Switch Board near dynamo's having switches to groups 14 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Forecastle 2, Passages 1st Class
4, Passages 2nd class 4, Pump 2, Provisions 1, Engine room 1.

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, porcelain

Total number of lights provided for 733 arranged in the following groups:—

| | | | | | | | |
|---|------------------------|--------|----------------|------------------|--|--------------|---------|
| A | Forecastle | 93 | lights each of | 32 | candle power requiring a total current of | 29 | Amperes |
| B | 1st class | 265 | lights each of | 32 e.p., 65 fans | candle power requiring a total current of | 140 | Amperes |
| C | 2nd | 101 | lights each of | 32 " 34 " | candle power requiring a total current of | 85 | Amperes |
| D | Pump | 03 | lights each of | 32 | candle power requiring a total current of | 20 | Amperes |
| E | Eng. room | 96 | lights each of | 32 | candle power requiring a total current of | 30 | Amperes |
| | 2 Mast head light with | 1 | lamps each of | 32 | candle power requiring a total current of | 2 | Amperes |
| | 2 Side light with | 1 | lamps each of | 32 | candle power requiring a total current of | 2 | Amperes |
| | 12 Cargo lights of | 6 x 32 | | | 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 Chartroom

DESCRIPTION OF CABLES.

| | | | | | | | |
|-----------------------------|-----|-----------------------|----|-------------|----|-------------------------|------------------------------------|
| Main cable carrying | 250 | Amperes, comprised of | 37 | wires, each | 11 | S.W.G. diameter, .38072 | square inches total sectional area |
| Branch cables carrying | 72 | Amperes, comprised of | 19 | wires, each | 10 | S.W.G. diameter, .06112 | square inches total sectional area |
| Branch cables carrying | 42 | Amperes, comprised of | 7 | wires, each | 14 | S.W.G. diameter, .03510 | square inches total sectional area |
| Leads to lamps carrying | 1 | Amperes, comprised of | 1 | wires, each | 7 | S.W.G. diameter, .00240 | square inches total sectional area |
| Cargo light cables carrying | 2 | Amperes, comprised of | 33 | wires, each | 30 | S.W.G. diameter, .00399 | square inches total sectional area |

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised rubber insulated in wooden casing.

" " " " iron tubes.

Armoured lead covered cable.

Joints in cables, how made, insulated, and protected

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 cables and wires in cabins cable, rubber
insulated in wooden casing. In Engine room armoured lead covered cables.

Provisions 35 lights each of 32 e.p. requiring a total current of 11 Amperes.

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 tubes.*

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

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

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

How are cables carried through beams *with fibre protections* through bulkheads, &c. *same*

How are cables carried through decks *watertight fitted iron tubes*

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 *wooden casing*

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

If so, how are the lamp fittings and cable terminals specially protected *bull eyes with heavy guards*

Where are the main switches and fuses for these lights fitted *on distribution boards*

If in the spaces, how are they specially protected *No*

Are any switches or fuses fitted in bunkers *No*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *watertight plugs*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *1 1/4" bolt.*

How are the returns from the lamps connected to the hull *by 1/2" copper & h. screws.*

Are all the joints with the hull in accessible positions *yes*

Is the installation supplied with a voltmeter *yes*, and with an amperemeter *yes, 3*, fixed *Main Sw. 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 *?* 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.

COMPASSES.

Distance between dynamo or electric motors and standard compass *82 ft*

Distance between dynamo or electric motors and steering compass *76 ft*

The nearest cables to the compasses are as follows:—

| A cable carrying | Amperes | feet from standard compass | feet from steering compass |
|------------------|----------|----------------------------|----------------------------|
| <i>0.2</i> | <i>4</i> | <i>3</i> | |
| <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> |
| <i>-</i> | <i>-</i> | <i>-</i> | <i>-</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 *every* course in the case of the standard compass and *nil* degrees on *every* course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS.

This installation has been tested under full working conditions and found in order.

*It is submitted that
this vessel is eligible for
THE RECORD.*

Elec. Light.

20/11/22

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE NOV. 21 1922

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.