

REPORT ON ELECTRIC LIGHTING INSTALLATION. No 39502

Port of Glasgow Date of First Survey 8/1/20 Date of Last Survey 10/1/20 No. of Visits 2
 No. in on the Iron or Steel S.S. WAHINE Port belonging to London
 Reg. Book 29677 Built at Gumbarlon By whom Messrs W. Denny Bros When built 1913
 Owners Union S.S. Co of New Zealand Ltd. Owners' Address _____
 Yard No. _____ Electric Light Installation fitted by Messrs W. Denny Bros When fitted 1913
refitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

RECONDITION + REFITTED 1919.

2 Belliss & Morcom Engines, direct coupled to Siemens Interpole Dynamos of 60 Kw with a speed of 500/515 Revs per min. also 1 Emergency set consisting of 1 Brookes
 Capacity of Dynamo 600 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine Room Top Platform Whether single or double wire system is used Double
 Position of Main Switch Board near Engines having switches to groups 14 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each see details on attached sheet

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 _____ arranged in the following groups:—
 A 4-12" Fans 1-2 HP lights each of 10 watts & 20 watts candle power requiring a total current of 28.76 Amperes
 B 6-12" Fans 1-24" Fan lights each of 10 watts & 20 watts candle power requiring a total current of 26.79 Amperes
 C 9-12" Fans & 13.7 lights each of 10 watts & 20 watts candle power requiring a total current of 31.36 Amperes
 D 6-12" Fans, 6-36" Fans lights each of 10 watts & 20 watts candle power requiring a total current of 36.3 Amperes
 E 1-12" Fan, 2-36" Fans lights each of 10 watts & 20 watts candle power requiring a total current of 27.45 Amperes
2 Mast head light with 1 lamp each of 32 candle power requiring a total current of 2.5 Amperes
2 Side light with 1 lamp each of 32 candle power requiring a total current of 2.5 Amperes
18 Cargo lights of 1504 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 Wheelhouse (Duplex Indicator)

DESCRIPTION OF CABLES.

2 cables in parallel
 Main cable carrying 600 Amperes, comprised of 91 wires, each 12 S.W.G. diameter, .7638 square inches total sectional area
 Branch cables carrying 187 Amperes, comprised of 37 wires, each 14 S.W.G. diameter, .1838 square inches total sectional area
 Branch cables carrying 108 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .09442 square inches total sectional area
 Leads to lamps carrying 64 Amperes, comprised of 3 wires, each 22 S.W.G. diameter, .001825 square inches total sectional area
 Cargo light cables carrying 15 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007052 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Armoured Braiding Insulated with pure India Rubber + Vulcanised rubber. Lead covered cables in Cabins & accommodation.

Joints in cables, how made, insulated, and protected none

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances none 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

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 In wood casing

7 Coy.
speed of
Deckhouse

12 way

8 "

8 "

6 "

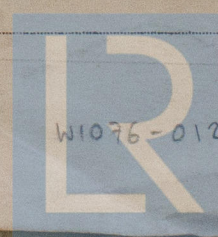
12 "

8 "

12 "

6 "

12 "



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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 Teak wood casing

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered & Armoured

What special protection has been provided for the cables near boiler casings Lead covered & Armoured

What special protection has been provided for the cables in engine room Lead covered & Armoured

How are cables carried through beams Vulcanite & Hardwood Plugs through bulkheads, &c. Watertight Glands.

How are cables carried through decks Lead pipes 18" above decks.

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 Teak wood 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 Enclosed cast iron fittings with terminals inside.

Where are the main switches and fuses for these lights fitted Main switch on Upper deck.

If in the spaces, how are they specially protected Cast iron boxes with circuit switches enclosed.

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. Yes

Insulation of cables is guaranteed to have a resistance of not less than 600 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.

M^r Denny & Bros Ltd Electrical Engineers Date 16-1-20

COMPASSES.

Distance between dynamo or electric motors and standard compass 40 feet

Distance between dynamo or electric motors and steering compass 30 feet

The nearest cables to the compasses are as follows:— All compasses are electrically lit.

| A cable carrying | Amperes | feet from standard compass | feet from steering compass |
|------------------|-----------|----------------------------|----------------------------|
| <u>30.2</u> | <u>15</u> | <u>10</u> | <u>—</u> |
| <u>—</u> | <u>—</u> | <u>—</u> | <u>—</u> |
| <u>—</u> | <u>—</u> | <u>—</u> | <u>—</u> |

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 Correct degrees on all course in the case of the standard compass and Correct degrees on all course in the case of the steering compass.

FOR WILLIAM DENNY & BROTHERS LIMITED Builder's Signature. Date 16-1-20

GENERAL REMARKS.

This vessel has been entirely re wired Generators, Generator engines dismantled have dismantled & repaired. The complete installation has been re-listed & found satisfactory

It is submitted that this vessel is eligible for

THE RECORD. ELEC. LIGHT. 30/1/20

GLASGOW 27 JAN 1920

Elec. Light

J Stanley Rankin.
Surveyor to Lloyd's Register of Shipping.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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70 tol Engine & 1 Crompton Dynamo of 25 K.W. at a
Revs per. minute. This set being fixed in a Steel
Boat Deck, with Switchboard fixed in same place.

| | | | |
|-------|----------------|-------------------------------------|-------------|
| Board | E. | in 2 nd Class Vestibule | Awning Deck |
| " | F. | " 1 st " " | Promenade " |
| " | G. | " Engineers' passage | Upper " |
| " | H. | " Forecastle passage | Awning " |
| " | I. | " Emergency House | Boat " |
| " | J. | " Port passage | Awning " |
| " | K' | " 1 st . Class Vestibule | Promenade " |
| " | K ² | " Engineers' passage | Upper " |
| " | L | " Engine Room, top platform | " " |
| " | M | " Wireless Telegraphy | Boat Deck. |

| | | | | |
|----------------|------------------------------|---|-------|----------|
| F. | 81 | lights of 10 watts & 20 watts requiring | 14.9 | Ampères. |
| G. | 6-12" Fans + 1-36" Fan 76 | lights of 10 watts & 20 watts " | 16.69 | " |
| H. | 55 | lights of 10 watts & 20 watts " | 10.4 | " |
| I. | 132 | " of 10 watts & 20 watts " | 20.4 | " |
| J. | 7 | Ventilating Fans " | 110.7 | " |
| K ¹ | 12 | Radiators " | 122.5 | " |
| K ² | 8 | Radiators " | 67.0 | " |
| L. | 113 | lights of 10 watts & 20 watts " | 30.6 | " |
| M. | | Wireless Telegraphy " | 52.5 | " |



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Distance between dynamo or electric motors and steering compass

30 feet

The nearest cables to the compasses are as follows:—

All compasses are electrically