

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41742

Port of GLASGOW Date of First Survey 17.1.22 Date of Last Survey 2.2.22 No. of Visits 5
 No. in on the Iron Steel SS "TING SANG" Port belonging to LONDON
 Reg. Book 33086 Built at PORT GLASGOW By whom MESSRS. DUNLOP BREMNER LTD When built 1922
 Owners INDO CHINA STEAM NAV. CO. LTD. Owners' Address
 Yard No. 346 Electric Light Installation fitted by MESSRS. CLAUD HAMILTON AND CO When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

TOTAL K.W. = 25.

1- $4\frac{1}{2} \times 5$ high speed enclosed steam engine direct coupled to compound wound ship lighting dynamo 550 R.P.M.
 also 1- 2 cyl. $4\frac{1}{2} \times 6\frac{3}{8}$ oil engine direct coupled to compound wound dynamo running at 1000 R.P.M.

Capacity of Dynamo oil 150 Amperes at 100 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 Engine Room having switches to groups 8 of lights, &c., as below

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

If fuses are fitted on main switch board to the cables of main circuit no 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 232 arranged in the following groups:—

A	14	lights each of	16	candle power requiring a total current of	4	Amperes
B	29	lights each of	16	candle power requiring a total current of	14	Amperes
C	45	lights each of	"	candle power requiring a total current of	23	Amperes
D	18	lights each of	"	candle power requiring a total current of	9	Amperes
E	40	lights each of	"	candle power requiring a total current of	20	Amperes
	43	lights each of	"	candle power requiring a total current of	21	Amperes
	28	lights each of	"	candle power requiring a total current of	14	Amperes
	15	lights each of	"	candle power requiring a total current of	4.5	Amperes
2	Mast head light with	1 lamp each of	32	candle power requiring a total current of	2	Amperes
2	Side light with	1 lamp each of	32	candle power requiring a total current of	2	Amperes
4	Cargo lights of	each 4-32 C.P.		candle power, whether incandescent or arc lights	incandescent	
2		1-600 C.P.				

If arc lights, what protection is provided against fire, sparks, &c. no arcs

Where are the switches controlling the masthead and side lights placed Chart Room

DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 37 wires, each .072 S.W.G. diameter, .150 square inches total sectional area
 Branch cables carrying 21 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, .0225 square inches total sectional area
 Branch cables carrying 14 Amperes, comprised of 7 wires, each .052 S.W.G. diameter, .0145 square inches total sectional area
 Leads to lamps carrying 3 Amperes, comprised of 3 wires, each .036 S.W.G. diameter, .0030 square inches total sectional area
 Cargo light cables carrying 14 Amperes, comprised of 7 wires, each .052 S.W.G. diameter, .0145 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Copper wires insulated with fine and vulcanizing india rubber taped & lead covered or lead covered and armoured.

Joints in cables, how made, insulated, and protected no joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances — 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 Lead covered or lead covered & armoured fixed to under decks & bulk heads by means of brass or iron clip.

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 Lead cover

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

What special protection has been provided for the cables near boiler casings Lead cover & armoured

What special protection has been provided for the cables in engine room Lead cover & armoured

How are cables carried through beams Lead bushes through bulkheads, &c. h. i. glands

How are cables carried through decks Deck 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 Lead covered & armoured

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. 2 and with an amperemeter yes. 1, fixed Engine Room

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 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.

For Captain's Use
M. K. Bagel

Electrical Engineers.

Date 14th Feb. 22.

COMPASSES.

Distance between dynamo or electric motors and standard compass 48 feet

Distance between dynamo or electric motors and steering compass 56 "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
150	48	56	
A cable carrying	14	20	20
A cable carrying	3	6	6

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 any course in the case of the

standard compass and nil degrees on any course in the case of the steering compass.

DUNLOP, BREMNER & COY., LIMITED.

J. P. Jones

Builder's Signature.

Date 17th February 1922

GENERAL REMARKS.

This installation has been fitted on board under special survey
tested under full working conditions of and satisfactory

FAIR. £30.0.0 Paid
Exp. 10.6.

18/2/22. W. M. M.

GLASGOW

21 FEB 1922

Committee's Minute

Elec. Light. W. M. M.

W. M. M.
Surveyor to Lloyd's Register of Shipping.



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Lloyd's Register
Foundation

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2m. 1.1.10. Transfer.