

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 72863

Port of Newcastle-on-Tyne Date of First Survey 20/10/19 Date of Last Survey 27/2/20 No. of Visits 10
 No. in on the Steel "Was mehtas" Port belonging to London
 Reg. Book 29990 Built at Walker By whom Armstrong Whitworth & Co When built 1919
 Owners The Shipping Controller (Hunting & Sons) Owners' Address London
 Card No. 954 Electric Light Installation fitted by J. H. Holmes & Co When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 6 1/2" x 6" open vertical engine coupled to one "Holmes" dynamo, compound wound.
 Capacity of Dynamo 100 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 double
 Position of Main Switch Board near dynamo having switches to groups A.B.C.D.E. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 3 way 15 amp. section box in Steering Gr. Pass. 2-3 way fuseboxes in Steering Gr. 6 way box in Star. Passage Up, 1 way box in Midship Passage, 2 way in Paint Rm. fwd, 4 way & 6 way fusebox in Wheelhouse, 9 way in 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 130-16 CP, 6-32 CP arranged in the following groups:—

A	{ 5 fuses + { 4 lights each of 20 watts. 32	16 candle power requiring a total current of	10.45	Amperes
B	{ 13 fuses + 59 lights each of 20 watts. 16	16 candle power requiring a total current of	28.2	Amperes
C	{ 30 lights each of 16 32	16 candle power requiring a total current of	16.8	Amperes
D	16 lights each of 16	candle power requiring a total current of	9.0	Amperes
E	Wireless Mains lights each of	candle power requiring a total current of		Amperes
1	Mast head light with 1 lamp each of 32	candle power requiring a total current of	1.12	Amperes
2	Side lights with 1 lamp each of 32	candle power requiring a total current of	2.24	Amperes
2	Cargo lights of 6 x 16	candle power, whether incandescent or arc lights	incandescent.	

Included Above

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

Where are the switches controlling the masthead and side lights placed in Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying	100	Amperes, comprised of	19 wires, each	14	S.W.G. diameter,	.094	square inches total sectional area
Branch cables carrying	10.45	Amperes, comprised of	4 wires, each	18	S.W.G. diameter,	.012	square inches total sectional area
Branch cables carrying	28.2	Amperes, comprised of	19 wires, each	18	S.W.G. diameter,	.034	square inches total sectional area
Leads to lamps carrying	.56	Amperes, comprised of	1 wires, each	18	S.W.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	3.3	Amperes, comprised of	3 wires, each	20	S.W.G. diameter,	.003	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

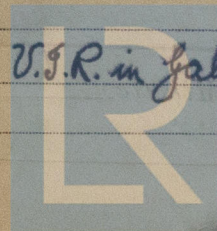
Conductors composed of H. C. Copper wire insulated with pure vulcanized india rubber, taped, armoured with a layer of galvanized steel wires, taped & Braided & compounded.
 Joints in cables, how made, insulated, and protected none, looping in system carried out.

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 Lead Covered in Accommodation, V.I.R. in Galv. Iron Pipes on Deck, Armoured & Braided in Engine & Boiler Spaces.

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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 *In Iron Pipe.*

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

What special protection has been provided for the cables near boiler casings *Armoured & Braided.*

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

How are cables carried through beams *bushed with fibre.* through bulkheads, &c. *stuffing glands.*

How are cables carried through decks *in lead or iron deck tubes, flanged & made watertight.*

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 *Armoured & Braided clipped up.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *none.*

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 *none.*

Are any switches or fuses fitted in bunkers *no.*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *socket connection.*

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 main 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 *yes.*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *no. W. S. Switch outside Pump Room.*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *strong well glasses, rubber rings.*

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.

Electrical Engineers

Date *24-1-20*

COMPASSES.

Distance between dynamo or electric motors and standard compass *Approx. 100 ft.*

Distance between dynamo or electric motors and steering compass *" 95 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	inside	feet from standard compass	inside	feet from steering compass
<i>2</i>	<i>Amperes</i>	<i>inside</i>	<i>feet from standard compass</i>	<i>inside</i>	<i>feet from steering compass</i>
<i>10.45</i>	<i>Amperes</i>	<i>approx 12.</i>	<i>feet from standard compass</i>	<i>approx 8.</i>	<i>feet from steering compass</i>
<i>28.2</i>	<i>Amperes</i>	<i>" 18.</i>	<i>feet from standard compass</i>	<i>" 14.</i>	<i>feet from steering compass</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 *all* course in the case of the standard compass and *For nil* degrees on *all* course in the case of the steering compass.

SIR W. G. ARMSTRONG, WHITWORTH & CO LIMITED.

Builder's Signature.

Date *2nd March 1920*

GENERAL REMARKS.

The above installation is in accordance with the Society's Rules. It has been tested and found satisfactory.

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

ELEC. LIGHT 173/20

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 19. MAR. 1920



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.