

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 14645.

Description of Ship, Port of West Hartlepool Date of First Survey while Date of Last Survey Building
 No. in Reg. Book on the Iron or Steel to Digby (527 1/2) Port belonging to
 Built at Hartlepool By whom Iron's Ship Co. When built 1913
 Owners Furness Withy & Co. Ltd. Owners' Address West Hartlepool
 Yard No. 527 Electric Light Installation fitted by J. H. Holmes & Coy When fitted April 1913

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 8 1/2" x 8" open type Engine by Robey & Co., Lincoln, coupled direct to
 One "Holmes" Dynamo, compound wound, running @ 350 Revs. per. min.
 Capacity of Dynamo 155 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed on lower Platform Starboard Side 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. F. G. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each A. 3-way D.P. fuse box fixed in Staircase Passage. B. 3 D.P. fuse boxes
1-2-way 2-6-way fixed in 1st Class Accomod. C. 1-3-way 2-6-way D.P. fuse boxes fixed in Party, Wheel House, & Marconi
Rm. D. 1-4-way D.P. fuse box in 1st Class Accomod. Room. E. 1-6-way D.P. fuse box in Engine Room. F. 1-2-way 1-9-way
1-4-way D.P. fuse boxes in 2nd Class Accomod. G. cable to Marconi's Room for wireless.
 If cut outs 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 cessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits yes
 Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of 100 per cent over the normal current
 Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 231 arranged in the following groups :-

Group	Number of lights	Each of	Wattage	Current (Amperes)
A	26	lights each of 16	candle power requiring a total current of 15.7	Amperes
B	4 1/2	lights each of 16	candle power requiring a total current of 26.4	Amperes
C	33	lights each of 16	candle power requiring a total current of 30.0	Amperes
D	4 5/8	lights each of 16	candle power requiring a total current of 25.0	Amperes
E	3 1/2	lights each of 16	candle power requiring a total current of 17.4	Amperes
F	2	Must head light with 2 lamps each of 32	candle power requiring a total current of 23	Amperes
	2	Side light with 2 lamps each of "	candle power requiring a total current of 4.5	Amperes
	4	Cargo lights of 6 x 16 cp.	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 Chart Room.

DESCRIPTION OF CABLES.

no Main cable carrying 155 Amperes, comprised of 34 wires, each 15 L.S.G. diameter, .149 square inches total sectional area
 Branch cables carrying 26.4 Amperes, comprised of 4 wires, each 15 L.S.G. diameter, .028 square inches total sectional area
 Branch cables carrying 30 Amperes, comprised of 4 wires, each 15 L.S.G. diameter, .028 square inches total sectional area
 Leads to lamps carrying 56 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 3.36 Amperes, comprised of 3 wires, each 20 L.S.G. diameter, .003 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper, pure para rubber, vulc. rubber.
Taped, braided or compounded.

Joints in cables, how made, insulated, and protected

none

Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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 none

Are there any joints in or branches from the cable leading from dynamo to main switch board none

How are the cables led through the ship, and how protected in Cargo Spaces U.S.R. wires run in iron pipe, Accomodation. Covered wires clipped up. In Machinery Spaces Armoured & Braided wires clipped up to bulkheads.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes, except when cargo is in.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Iron piping*

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 *ditto*

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

How are cables carried through decks *in lead or iron tubes flanged & made W. Tight.*

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 *in iron pipes*

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 cut outs for these lights fitted

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers *none*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *W.T. 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

The installation is supplied with a voltmeter and *not* an amperemeter, fixed *on main so. Bd.*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, 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 *100* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater.

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.

J.H. Holmes & Co Electrical Engineers Date *21/4/12*

COMPASSES.

Distance between dynamo or electric motors and standard compass *104 ft. approx.*

Distance between dynamo or electric motors and steering compass *108 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	in	feet from standard compass	in	feet from steering compass
<i>.56</i>					
<i>4.8.</i>		<i>6</i>	<i>feet from standard compass</i>	<i>10</i>	<i>feet from steering compass</i>
<i>30</i>		<i>30</i>	<i>feet from standard compass</i>	<i>34</i>	<i>feet from steering compass</i>

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 *no* degrees on *any* course in the case of the standard compass and *no* degrees on *any* course in the case of the steering compass.

FOR IARNE'S SHIP BUILDING & DRY DOCKS CO., LIMITED
 Builder's Signature. Date *April 30th 1912.*

GENERAL REMARKS.

The above installation has been fitted in accordance with the requirements of the Rules & worked satisfactorily rendering this vessel eligible in my opinion submitted that this vessel is eligible for THE RECORD Elec light.

J.W. Lloyd & Co. Surveyors to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

