

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 23713

Port of *Shull* Date of First Survey *Apr. 10th* Date of Last Survey *May 4th* No. of Visits *8*
 No. in *on the Iron or Steel* *6* *Trawler 'Norman'* Port belonging to *Shull*
 Reg. Book *36 Supp.* Built at *Overley* By whom *Cook Nelson & Gummelt* When built *1911*
 Owners *Imperial Steam Fishing Co. Ltd.* Owners' Address *Sunderland*
 Yard No. *Electric Light Installation fitted by* *Sunderland Forge & Engineering Co. Ltd.* When fitted *1911*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipolar compound wound Dynamo direct coupled to Inverted single cylinder Engine both by Sunderland Forge & Engineering Co.
 Capacity of Dynamo *32* Amperes at *100* Volts, whether continuous or alternating current *continuous*
 Where is Dynamo fixed *Bottom of engine room star side* Whether single or double wire system is used *double*
 Position of Main Switch Board *Close to dynamo* having switches to groups *three* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *One in Wheelhouse having switches for 1 side lights, 6 stern lights, 2 compass lights, 1 cluster & 7 deck lights*

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 vessel 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 *no* 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 *56* arranged in the following groups:—

A	<i>8</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>4.48</i>	Amperes
B	<i>5</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>2.80</i>	Amperes
C	<i>30</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>16.80</i>	Amperes
D	<i>13</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>7.28</i>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	<i>2</i>	Mast head light with lamps each of		candle power requiring a total current of		Amperes
	<i>10</i>	Side lights with lamps each of	<i>32</i>	candle power requiring a total current of	<i>2.24</i>	Amperes
	<i>1</i>	Cargo lights of lamps each	<i>16</i>	candle power, whether incandescent or arc lights	<i>continuous</i>	

If arc lights, what protection is provided against fire, sparks, &c. *None fitted*

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

DESCRIPTION OF CABLES.

Main cable carrying *21.26* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.0302* square inches total sectional area
 Branch cables carrying *4.48* Amperes, comprised of *1* wires, each *14* L.S.G. diameter, *.00503* square inches total sectional area
 Branch cables carrying *16.80* Amperes, comprised of *7* wires, each *16* L.S.G. diameter, *.0225* square inches total sectional area
 Leads to lamps carrying *26* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.00181* square inches total sectional area
 Cargo light cables carrying *3.36* Amperes, comprised of *1* wires, each *16* L.S.G. diameter, *.00322* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

In Berth etc. :- Pure rubber. Vulcanized rubber. Taped & lead covered.
Rest of Ship :- Armoured over lead covering.

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 *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 & armoured cables led along inside of Engine room & Storehold casing. Then through bunker & in to Captain's room*

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

Strong run pipes

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

do

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

do

How are cables carried through beams

Holes bushed with fibre for lead on cables

Watertight glands

How are cables carried through decks

Watertight deck tubes

Are any cables run through coal bunkers or cargo spaces or spaces which may be used for carrying cargo, stores, or baggage

Yes

No

No

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 cut outs for these lights fitted

If in the spaces, how are they specially protected

Are any switches or cut outs 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

The installation is

Yes

supplied with a voltmeter and

Yes

an amperemeter, fixed

in Engine Room

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 99 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.

THE SUNDERLAND FORCE & ENGINEERING CO. LTD.

Wynne Man

Electrical Engineers

Date

10th May 1911

COMPASSES.

Distance between dynamo or electric motors and standard compass

Approx 50 feet

Distance between dynamo or electric motors and steering compass

7 140

The nearest cables to the compasses are as follows:—

A cable carrying 16.8 Amperes 16 feet from standard compass 10 feet from steering compass

A cable carrying 56 Amperes 8 feet from standard compass 10 led into feet from steering compass

A cable carrying 56 Amperes 10 led into feet from standard compass 8 feet from steering compass

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

degrees on

course in the case of the

standard compass and

degrees on

course in the case of the steering compass.

Builder's Signature.

Date

GENERAL REMARKS.

This installation of electric light has been well fitted. The material workmanship are good & have been tested under full working conditions & found satisfactory.

John W. Wynne

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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