

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6740

Port of Belfast Date of First Survey Jan 10th Date of Last Survey Feb 8th No. of Visits 9
 No. in Reg. Book on the Iron or Steel SS. Pangalos Port belonging to Port of Belfast
 Built at Belfast By whom Warrington Clark & Co. Ltd When built 1910
 Owners Shaw Savill & Albion Ltd Owners' Address London
 Yard No 289 Electric Light Installation fitted by Lundeland & Fyfe City Ltd When fitted 1910

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two combined plants fitted each consisting of open type engine by Messrs
 Norman Black & Co. direct coupled to compound wound dynamos.

Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In Thrust Reverser Whether single or double wire system is used Single

Position of Main Switch Board Between dynamos having switches to groups 18 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each None fitted

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 —

Are the cut outs of non-oxidisable 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 288 arranged in the following groups:—

A. Engine room and Stoke Hold	60 lights	16 c.p.	36 Amperes	nt of	Amperes
B. Refrigerating Machinery	12 "	"	72 "	nt of	Amperes
C. Engine Room	19 "	"	11.4 "	nt of	Amperes
D. Galley &c.	18 "	"	9.6 "	nt of	Amperes
E. Navigation.	5-32 c.p.	10-16 c.p.	12 "	nt of	Amperes
F. Saloon.	26 lights	16 c.p.	15.6 "	nt of	Amperes
G. Crew Forward	19 "	"	11.4 "	nt of	Amperes
H. Daylight	20 "	"	12 "	nt of	Amperes
I. Poop	12 "	"	7.2 "	nt of	Amperes
J. No. 1 Arc		"	10 "	nt of	Amperes
K. " 2 "		"	10 "	nt of	Amperes
L. " 3 "		"	10 "	nt of	Amperes
M. " 4 "		"	10 "	nt of	Amperes
N. Forward Cargo.	48 "	"	28.8 "	nt of	Amperes
O. After Cargo.	36 "	"	21.6 "	nt of	Amperes
P. Cooler Motor 5 H.P.				nt of	Amperes
Q. Engineers Workshop Motor 1 H.P.				nt of	Amperes
R. Spare.				nt of	Amperes

W720-0041
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DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 34 wires, each 13 L.S.G. diameter, .24 square inches total sectional area
 Branch cables carrying 35 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .06 square inches total sectional area
 Branch cables carrying 10 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .0125 square inches total sectional area
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .0032 square inches total sectional area
 Cargo light cables carrying 3.6 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .0125 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires insulated with pure, and vulcanised India Rubber, the whole vulcanised together, taped and braided. Main cables in Hold as Engine Room. Lead covered and armoured in addition to the above.

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

Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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 Main cables led through ship, run between fore and aft beams, lead covered and armoured wire being used

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 6740

Port of Belfast Date of First Survey Jan 10th Date of Last Survey Feb 8th No. of Visits 9
 No. in on the Iron or Steel S.S. Pangloss Port belonging to John Campbell & Co.
 Reg. Book Belfast Built at Belfast By whom John Campbell & Co. When built 1910
 Owners John Campbell & Co. L^d Owners' Address Lantern Lane
 Yard No. 289 Electric Light Installation fitted by Lundeland & Fyfe City L^d When fitted 1910

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two combined plants fitted each consisting of open type engine by Messrs
 Horkman black boy direct coupled to compound wound dynamo.

Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In Thrust recess Whether single or double wire system is used Single

Position of Main Switch Board Between dynamos having switches to groups 18 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each None fitted

If cut outs are fitted on main switch board

auxiliary switch board to the cables of auxiliary

and to each lamp circuit yes

all circuits including lamp circuits

100 per cent over the normal current

yes If wire fuses are used

one for each circuit yes

yes

E out of Amperes

D Amperes

C Amperes

C lights each of candle power requiring a total current of Amperes

D lights each of candle power requiring a total current of Amperes

E lights each of candle power requiring a total current of Amperes

Mast head light with lamps each of candle power requiring a total current of Amperes

Side light with lamps each of candle power requiring a total current of Amperes

Cargo lights of candle power, whether incandescent or arc lights

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

Where are the switches controlling the masthead and side lights placed

DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 34 wires, each 13 L.S.G. diameter, .24 square inches total sectional area

Branch cables carrying 35 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .06 square inches total sectional area

Branch cables carrying 10 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .0125 square inches total sectional area

Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .0032 square inches total sectional area

Cargo light cables carrying 3.6 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .0125 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires insulated with pure, and vulcanised India Rubber, the whole vulcanised together, taped and braided. Main cables in Hold as Engine Room lead covered and armoured in addition to the above.

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

Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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 Main cables led through ship, run between fore and

aft beams, lead covered and armoured wire being used

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 covered and armoured wire used.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead covered and armoured wire used.*

What special protection has been provided for the cables near boiler casings *do do do*

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

How are cables carried through beams *Rubber bushes with Fibre through bulkheads, &c. Watertight glands used.*

How are cables carried through decks *Watertight deck tubes used.*

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 *Lead covered and armoured wire used.*

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 *By heavy cast iron covers.*

Where are the main switches and cut outs for these lights fitted *In Engine Room.*

If in the spaces, how are they specially protected *—*

Are any switches or cut outs fitted in bunkers *—*

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 *Cable secured to bedplate by swaging socket.*

How are the returns from the lamps connected to the hull *Soldered to brass washers secured by tap screws.*

Are all the joints with the hull in accessible positions *Yes.*

The installation is *also* supplied with a voltmeter and *two* amperemeters fixed *on main switches.*

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 *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *2500* 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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

R. D. G. W.

Electrical Engineers

Date *18/2/10.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *30 ft from S.H. Motor 180 ft from Dynamo.*

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

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>6</i>	<i>Amperes</i>	<i>runs into</i>	<i>runs into</i>
<i>12</i>	<i>Amperes</i>	<i>6</i>	<i>6</i>
<i>—</i>	<i>Amperes</i>	<i>—</i>	<i>—</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 *Nil* degrees on *all* course in the case of the steering compass.

PRO WORKMAN, CLARK & CO., LIMITED,

R. D. G. W.

Builder's Signature.

Date

GENERAL REMARKS.

This installation appears to be of good description, and has been fitted in accordance with the Rules.

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

J. R. R.

R. F. D. D. D.

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



Lloyd's Register Foundation