Rpt. 13.

Received at London Office MON. MAY 10. 1915

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7519

Port of Belfast Date of First Survey 22nd Feb. Date of Last Survey 8th April No. of Visits 9

No. in Reg. Book — on the ~~Iron or~~ Steel S.S. Pembrokeshire belonging to Belfast

Built at Belfast By whom Workman Clark & Co Ltd When built 1915

Owners Royal Mail S.P. Co Ltd Owners' Address London

Yard No. 337 Electric Light Installation fitted by Lemp Holland Firpo Co Ltd When fitted 1915

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Generating Sets fitted consisting of open type compound steam engines direct coupled to compound wound multipolar dynamos fitted on combined bedplates

Capacity of Dynamo 318 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed In Engine room Whether single or double wire system is used single

Position of Main Switch Board In Engine Room having switches to groups Ten of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each One in chartroom 12 switches for Navigation Lights

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 —

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 509 arranged in the following groups :—

A	104	lights each of	16	candle power requiring a total current of	25	Amperes
B	80	" " "	"	" " " " "	22	"
B C	40	lights each of	"	candle power requiring a total current of	10	Amperes
D	60	" " "	"	" " " " "	15	"
C E	87	lights each of	"	candle power requiring a total current of	20	Amperes
F	8	" " "	"	" " " " "	2	"
D G	42	lights each of	"	candle power requiring a total current of	10	Amperes
H	48	" " "	"	" " " " "	84	"
E J	40	lights each of	"	candle power requiring a total current of	80	Amperes
K	Wireless			" " " " "	27	
2	Mast head lights with 1	lamps each of	32	candle power requiring a total current of	2	Amperes
2	Side lights with 1	lamps each of	32	candle power requiring a total current of	2	Amperes
12 Arc lamps & 44	Cargo lights of		32	candle power, whether incandescent or arc lights	Both fitted	

If arc lights, what protection is provided against fire, sparks, &c. Glass globes strong galvanised iron guards and Ash Trays fitted.

Where are the switches controlling the masthead and side lights placed In Chartroom

DESCRIPTION OF CABLES.

Main cable carrying 318 Amperes, comprised of 61 wires, each 12 S.W.G. diameter, 0·300 square inches total sectional area

Branch cables carrying 84 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, 0·0937 square inches total sectional area

Branch cables carrying 25 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, 0·0221 square inches total sectional area

Leads to lamps carrying 2 Amperes, comprised of 7 wires, each 25 S.W.G. diameter, 0·0022 square inches total sectional area

Cargo light cables carrying 10 Amperes, comprised of 114 wires, each 38 S.W.G. diameter, 0·003192 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper conductors insulated with pure and vulcanised india rubber taped & braided vulcanised together & finished as follows:- In Accommodation, lead covered & braided Tail In Engine room, holds &c and where exposed to weather. Lead-covered, armoured & braided

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 armoured & braided cables securely fastened to beams &c with galvanised iron clips and 3/8" dia. brass screws.

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 Cables lead covered, armoured & braided overall

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered, arm.d & braided

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

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

How are cables carried through beams Through holes bushed with fibre *through bulkheads, &c.* Thro. w.t. brass glands

How are cables carried through decks " deck tubes 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 Lead covered armoured & braided

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 Glass globe & strong brass guard fitted

Where are the main switches and fuses for these lights fitted In engine room

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* Attached to heavy brass w.t. plugs & sockets

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Sweated into heavy brass sockets & bolted to beam in engine room

How are the returns from the lamps connected to the hull Sweated to brass washer & connected to hull by ⅜ brass screws

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

Is the installation supplied with a voltmeter Yes, *and with an amperemeter* Yes, *fixed* in 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 2500 megohms per statute mile at 60° Farhenheit 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.

P.Pro Sunderland Forge Eng Co Ltd H. Wright *Electrical Engineers* *Date* April 29. 1915

COMPASSES.

Distance between dynamo or electric motors and standard compass 112 ft

Distance between dynamo or electric motors and steering compass 108 ft

The nearest cables to the compasses are as follows :—

A cable carrying	5.8	*Amperes*	14	*feet from standard compass*	12	*feet from steering compass*
A cable carrying	0.5	*Amperes*	3	*feet from standard compass*	3	*feet from steering compass*
A cable carrying	1.0	*Amperes*	6	*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 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, SECRETARY

Builder's Signature. *Date*

GENERAL REMARKS.

The installation is 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. JWR 11/5/15

R. F. Beveridge

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

Committee's Minute

1m,8,12.—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.