Rpt. 13.

Received at London Office THU. 9 JUN. 1921

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 11039

Port of Middlesbrough. Date of First Survey ____ Date of Last Survey ____ No. of Visits ____

No. in Reg. Book 80182 on the ~~Iron or~~ Steel S/s "Lancastrian Prince" Port belonging to Newcastle

Built at Haverton Hill-on-Tees By whom Furness Shipbuilding Co Ltd When built 1921

Owners Prince Line Ltd Owners' Address London.

Yard No. 23. Electric Light Installation fitted by Furness Shipbuilding Co Ltd When fitted 1921

RETAIN

DESCRIPTION OF DYNAMOS ENGINES ETC.

Dynamos open type, compound wound, Sund. Forge Nos 32203 & 30993, 15 KW & 7½ KW, respectively
Engines, enclosed type, with forced lubrication " " " 30423 & 30713 " "

Capacity of Dynamo A. 150 amp, B. 75 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Tank room, "tween deck" Port side Whether single or double wire system is used double

Position of Main Switch Board After bulkhead of tank room having switches to groups A.B.C.D & E of lights, &c., as below

Positions of auxiliary ~~fuse~~ switch boards and numbers of switches on each "A" Chart house (9 switches) "B" Engineers mess (no switches). "C" Switchboard room (no switches) "D" Switchboard room (no switches) "E" Lower crew space aft no switches.

If fuses are fitted on main switch board to the cables of main circuit Yes and on each auxiliary ~~fuse~~ 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 50% 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 219. arranged in the following groups :—

A	Navigation	9 lights each of 8 cp	candle power requiring a total current of	8·4	Amperes
		5 " " 32 cp			
B	Midship	30 " " 10 watt MF	candle power requiring a total current of	33·8	Amperes
		23 " " 16 cp			
C	Engine room	4 " " 300 watt MF	candle power requiring a total current of	48·4	Amperes
		54 " " 16 cp.			
D	Clusters	8 lights each of 300 watt MF	candle power requiring a total current of	24	Amperes
E	aft	1 lights each of 32 cp	candle power requiring a total current of	21·6	Amperes
		2 " " 8 "			
		33 " " 16 "			
1	Mast head light with 1 lamps each of	32	candle power requiring a total current of	1·2	included in "A" Amperes
2	Side light with 1 lamps each of	32	candle power requiring a total current of	2·4	included in "A" Amperes
8	Cargo lights of	300	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 Chart House

DESCRIPTION OF CABLES.

Main cable carrying	150	Amperes, comprised of	37	wires, each	14	S.W.G. diameter,	·1824 square inches total sectional area
Branch cables carrying	43·4	Amperes, comprised of	19	wires, each	·064	~~S.W.G.~~ diameter,	·06 square inches total sectional area
Branch cables carrying	21·6	Amperes, comprised of	7	wires, each	·064	~~S.W.G.~~ diameter,	·0225 square inches total sectional area
Leads to lamps carrying	3	Amperes, comprised of	3	wires, each	·029	~~S.W.G.~~ diameter,	·002 square inches total sectional area
Cargo light cables carrying	3	Amperes, comprised of	110	wires, each	·0076	~~S.W.G.~~ diameter,	·0048 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered cables used in all cabins, saloon etc.
Lead covered, armoured & braided cables used in all exposed positions, including engine & boiler rooms, tweendecks, crew space & forecastle.

Joints in cables, how made, insulated, and protected
Porcelain ceiling roses, with cast iron covers where exposed to damage.
No soldered joints made, all joints being made with mechanical connectors.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances ~~No~~ 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 Through galvanised pipes along shelter deck. Pipes being protected by hatch coaming bars.

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, armoured & braided cables used, in alleyways, iron pipes to exposed deck lights

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

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 Lead tubes for Lead covered cables *through bulkheads, &c.* Watertight glands below shelter deck.

How are cables carried through decks Iron deck pipes, made watertight

Are any cables run through coal bunkers no *or cargo spaces* yes tween decks *or spaces which may be used for carrying cargo, stores, or baggage* yes tween decks

If so, how are they protected Lead covered armoured & braided cables used.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage yes tween decks

If so, how are the lamp fittings and cable terminals specially protected Fittings have wire guards & hinged iron covers

Where are the main switches and fuses for these lights fitted Switchboard room & saloon Pantry.

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 both *How fixed* Iron pipes on masts.

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 Switchboard

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 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.

FOR FURNESS SHIPBUILDING Co. LIMITED

P. S. Glover *Electrical Engineers* *Date* 3rd June 21

COMPASSES.

Distance between dynamo or electric motors and standard compass approx 100 ft

Distance between dynamo or electric motors and steering compass " 100 "

The nearest cables to the compasses are as follows:—

A cable carrying	8·7	*Amperes*	10	*feet from standard compass*	10	*feet from steering compass*
A cable carrying	·3	*Amperes*	inside	~~*feet from*~~ *standard compass*	6	*feet from steering compass*
A cable carrying	/	*Amperes*	/	*feet from standard compass*	/	*feet from steering compass*

Have the compasses been adjusted with and without the electric installation at work at full power Compasses not adjusted (vessel laid up)

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.

FOR FURNESS SHIPBUILDING CO. LIMITED

DIRECTOR

Builder's Signature. *Date* 3/5/21

GENERAL REMARKS.

This installation has been efficiently fitted on board and proved satisfactory under working conditions

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

Fee £18-15-0 applied for 8.6.21.

Rell 10/6/21

Wm Cowie

Surveyor to Lloyd's Register of Shipping.

Committee's Minute RECEIVED JUN 14 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

20m.11.19.—Transfer.