

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1936.

Port of *Barton in Furness* Date of First Survey *18th Oct 1921* Date of Last Survey *23rd Jan 1922* No. of Visits *26*
 No. in *T.S.S. "Slieve Donard"* Port belonging to *Dublin*
 Reg. Book *39294* Built at *Barton in Furness* By whom *Vickers Ltd* When built *1922*
 Owners *London & North Western Rly Co Ltd* Owners' Address
 Yard No. *591* Electric Light Installation fitted by *Vickers Ltd* When fitted *1922*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Lancashire Dynamo Co's open type, compound multipolar dynamos, each 16 1/2 Kw, direct coupled to two Sunstead & Chandler reciprocating steam engines.
 Capacity of Dynamo *each 150* Amperes at *110* Volts, whether continuous or alternating current *continuous*
 Where *are* Dynamos fixed *On platform, after end of Engine Room* Whether single or double wire system is used *Double wire*
 Position of Main Switch Board *On platform, after end of E.R.* having switches to groups *eight in number of lights, &c., as below*
 Positions of auxiliary switch boards and numbers of switches on each *None fitted*

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 *No* 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 *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 *210* arranged in the following groups:—

A A	21	lights each of	30 watt	candle power requiring a total current of	5.7	Amperes
B	12	" " "	30 "	" " " " " "	3.3	"
B C	{ 40	lights each of	30 "	candle power requiring a total current of	{ 11.1	Amperes
	{ 3	" " "	2 1/2 candle	" " " " " "		
C D	46	lights each of	30 watt	candle power requiring a total current of	12.6	Amperes
D E	{ 11	" " "	30 "	" " " " " "	{ 3.4	Amperes
	{ 6	lights each of	2 1/2 candle	" " " " " "	5.7	"
F	21	" " "	30 watt	candle power requiring a total current of	{ 13.4	Amperes
E G	{ 39	lights each of	30 watt	" " " " " "		
	{ 3	" " "	100 "	" " " " " "	3.0	Amperes
3	Mast head lights with	1	lamps each of	32	candle power requiring a total current of	1.0
1	Stern light "	1	" " "	32	" " " " " "	2.0
2	Side light with	1	lamps each of	32	candle power requiring a total current of	
2	Cargo lights of	360 watt	candle power, whether incandescent or arc lights	Incandescent		

If arc lights, what protection is provided against fire, sparks, &c. *Incandescent lamps.*

Where are the switches controlling the masthead and side lights placed *In chart room.*

DESCRIPTION OF CABLES.

Main cable carrying	150	Amperes, comprised of	34	wires, each	.083" S.W.G. diameter,	.2	square inches total sectional area
Branch cables	41	" " "	19	" " "	.052	.04	" " " "
Branch cables carrying	14	Amperes, comprised of	4	wires, each	.052 S.W.G. diameter,	.0145	square inches total sectional area
" " "	15	" " "	4	" " "	.029	.0045	" " " "
Branch cables carrying	8	Amperes, comprised of	3	wires, each	.036 S.W.G. diameter,	.003	square inches total sectional area
Leads to lamps carrying	1.8	Amperes, comprised of	3	wires, each	.036 S.W.G. diameter,	.003	square inches total sectional area
Cargo light cables carrying	2.7	Amperes, comprised of	12	wires, each	.036 S.W.G. diameter,	.00324	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

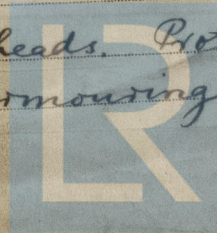
All cables rubber insulated. In way of accommodation protected by lead sheath. In machinery spaces, holds etc by lead sheath, steel wire armouring & hemp braiding.

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 *No joints.* 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 *No joints.*

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 *Clipped to decks & bulkheads. Protected by lead sheathing, or by lead sheathing & steel wire armouring.*



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 sheathing, steel wire armouring, & hemp braiding.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat None in these positions

What special protection has been provided for the cables near boiler casings None in positions requiring special protection

What special protection has been provided for the cables in engine room Lead sheathed & steel wire armoured.

How are cables carried through beams Lead bushed holes through bulkheads, &c. Watertight glands or lead bushed holes.

How are cables carried through decks Galvanised iron deck tubes.

Are any cables run through coal bunkers No or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Lead sheathed, steel wire 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 Totally enclosed guarded fittings

Where are the main switches and fuses for these lights fitted Beneath the fuse boxes, outside cargo spaces.

If in the spaces, how are they specially protected Not in the cargo spaces.

Are any switches or fuses 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 Double wire system

How are the returns from the lamps connected to the hull Double wire system

Are all the joints with the hull in accessible positions Double wire system

Is the installation supplied with a voltmeter Yes, and with an amperemeter Yes, fixed On main 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 VICKERS LIMITED.

Paul Ferguson

Electrical Engineers

Date

COMPASSES.

FOR & ON BEHALF OF A DIRECTOR.

Distance between dynamo or electric motors and standard compass Dynamo 76 ft, Wireless Alternator 8 ft.

Distance between dynamo or electric motors and steering compass Dynamo 76 ft, Wireless Alternator 8 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	5	Amperes	—	feet from standard compass	6	feet from steering compass
A cable carrying	10	Amperes	—	feet from standard compass	4	feet from steering compass
A cable carrying	17	Amperes	—	feet from standard compass	10	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 ✓ degrees on ✓ course in the case of the standard compass and Zero degrees on any course in the case of the steering compass.

FOR VICKERS LIMITED.

Paul Ferguson

Builder's Signature.

Date

GENERAL REMARKS.

FOR & ON BEHALF OF A DIRECTOR.

This installation has been efficiently fitted on board, & on completion it was tried under full load & found satisfactory. Governing tests were carried out on both sets, & the governors were found to be sensitive & efficient when the full load was cut out.

Fee: £23-5-0

Applied for 28/1/22.

Elec. Light.

John Houston

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.