Rpt. 13.

Received at London Office WED. 1 MAR. 1922

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41745

Port of GLASGOW. Date of First Survey 24.1.22 Date of Last Survey 13.2.22 No. of Visits 4

No. in Reg. Book 38221. on the [redacted] Steel SS. "LADY ANSTRUTHER" Port belonging to GLASGOW.

Built at DUBLIN By whom DUBLIN SHIPBUILDERS LTD When built 1922.

Owners NOBEL'S EXPLOSIVES LTD Owners' Address

Yard No. 19. Electric Light Installation fitted by MESSRS THE SUNDERLAND FORGE LTD When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC. TOTAL KW: 4.6.

Compound wound 4-Pole dynamo, direct coupled to single stroke 'Open' type engine fitted with governor.

Capacity of Dynamo 45 Amperes at 100 Volts, whether continuous or alternating current Continuous

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

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

Positions of auxiliary switch boards and numbers of switches on each In Engine Room - 6 switches
In Chart Room - 6 switches.

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 75 arranged in the following groups :—

A Accommodation 28 lights each of 16 cp and 1 at 32 candle power requiring a total current of 11.1 Amperes

B Navigation etc 8 lights each of 16 cp and 4 at 32 candle power requiring a total current of 7.2 Amperes

C ~~Cargo~~ 24 lights each of 16 candle power requiring a total current of 14.4 Amperes

D Engine & Boiler Rms 10 lights each of 16 candle power requiring a total current of 6.0 Amperes

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

2 Mast head light with 1 lamps each of 32 candle power requiring a total current of each 1.2 Amperes

2 Side light with 1 lamps each of 32 candle power requiring a total current of " 1.2 Amperes

24 Cargo lights of 16 candle power, whether incandescent or arc lights Incandescent

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

None fitted

Where are the switches controlling the masthead and side lights placed In Chart Room

DESCRIPTION OF CABLES.

Main cable carrying 45 Amperes, comprised of 19 wires, each .052" S.W.G. diameter, .04 square inches total sectional area

Branch cables carrying 14.4 Amperes, comprised of 7 wires, each .036" S.W.G. diameter, .007 square inches total sectional area

Branch cables carrying 7.2 Amperes, comprised of 7 wires, each .036" S.W.G. diameter, .007 square inches total sectional area

Leads to lamps carrying 1.8 Amperes, comprised of 3 wires, each .029" S.W.G. diameter, .002 square inches total sectional area

Cargo light cables carrying 3.6 Amperes, comprised of 70 wires, each .0076" S.W.G. diameter, .003 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper conductors insulated with pure and vulcanised india-rubber, taped and the whole vulcanised together and finished:- In accommodation lead covered and braided over-all. In Machinery spaces etc. - Lead covered armoured and 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 Mains are drawn into Galvanised iron pipe, made watertight, and run along deck from Engine room to Forecastle

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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 and braided.

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

What special protection has been provided for the cables near boiler casings None near Boiler casing.

What special protection has been provided for the cables in engine room Lead covered, armoured and braided

How are cables carried through beams Holes bushed with fibre *through bulkheads, &c.* W.T. packing glands.

How are cables carried through decks In Deck tubes made W.T.

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

If so, how are they protected None

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage None

If so, how are the lamp fittings and cable terminals specially protected —

Where are the main switches and fuses for these lights fitted —

If in the spaces, how are they specially protected —

Are any switches or fuses fitted in bunkers —

Cargo light cables, whether portable or permanently fixed Portable *How fixed* In watertight boxes.

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 Main Switch-board

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 THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

R. H. Gough *Electrical Engineers* *Date* 16th February, 1922

COMPASSES.

Distance between dynamo or electric motors and standard compass 90 feet

Distance between dynamo or electric motors and steering compass —

The nearest cables to the compasses are as follows :—

A cable carrying 7.2	*Amperes* 12	*feet from standard compass* —	*feet from steering compass*
A cable carrying .6	*Amperes* 3	*feet from standard compass* —	*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 yes.

The maximum deviation due to electric currents, etc., was found to be Nil *degrees on* any. *course in the case of the standard compass and* ~ *degrees on* ~ *course in the case of the steering compass.*

W. W. Millican *Builder's Signature.* *Date* 20th February 1922

GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions found satisfactory.

Fee £5.0.0 a/c 21/2/22. Paid 27/2/22 J.C. Elec. Light. L.J. 2/3/22. J. S. Rankin. *Surveyor to Lloyd's Register of Shipping.*

Committee's Minute GLASGOW 28 FEB 1922

Elec. Light

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

2m.11.19.—Transfer.