

of Antwerp Date of First Survey 4. Survey June 1901
on the Iron or Steel S.S. "Ben Loech" going to Leith
Book 86. Built at Leith. By whom Ramage & Ferguson, Ltd. When built 1901.
W. Thomson & Co. Owners Address Leith.
No. 174. Electric Light Installation fitted by Sunderland Forge & Engineering Co. Ltd. When fitted 1905

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Inverted Vertical Single cylinder open type engine direct coupled to
Multipolar Compound Round dynamo

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

Where is Dynamo fixed in Valve Room

Position of Main Switch Board near Dynamo having switches to groups four of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

1 in Steering Engine Room (2 switches) 1 in Chart Room, 2 in Saloon Room
1 for Engine Room.

If cut outs are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch boards 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 cessel 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 250

Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of 100 per cent over the normal current

Are the 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 136 arranged in the following groups:—

A	45	lights each of	16	candle power requiring a total current of	27.	Amperes
B	42	lights each of	16	candle power requiring a total current of	25.2	Amperes
C	43	lights each of	16	candle power requiring a total current of	25.8	Amperes
D	2	lights each of	3000	candle power requiring a total current of	15.5	Amperes
E		lights each of		candle power requiring a total current of		Amperes
2	Mast head light with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes
2	Side lights with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes

9 Cargo lights of 5-16 candle power, whether incandescent or are lights incandescent
included in circuit "A".
If are lights, what protection is provided against fire, sparks, &c. Strong glazed lanterns fitted.

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

DESCRIPTION OF CABLES.

Main cable carrying	100	Amperes, comprised of	19	wires, each	14	L.S.G. diameter,	.1	square inches total sectional area
Branch cables carrying	13	Amperes, comprised of	7	wires, each	18	L.S.G. diameter,	.073	square inches total sectional area
Branch cables carrying	7	Amperes, comprised of	7	wires, each	20	L.S.G. diameter,	.007	square inches total sectional area
Leads to lamps carrying	6	Amperes, comprised of	1	wires, each	18	L.S.G. diameter,	.001	square inches total sectional area
Cargo light cables carrying	3	Amperes, comprised of	138	wires, each	30	L.S.G. diameter,	.005	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires insulated with pure and vulcanized india rubber, taped, and lead covered.

How made, insulated, and protected No joints used. wiring carried out on the
Distribution system.

Are all the joints of cables thoroughly secured as a flux Are all joints made in bunkers, cargo spaces, or stores, or bare
No.

9900-114210-104210

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Foundation

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *do* *do*
What special protection has been provided for the cables near boiler casings *do* *do*
What special protection has been provided for the cables in engine room *do* *do*
How are cables carried through beams *holes bushed for lead covered wires* through bulkheads, &c. *Watight glands used.*
How are cables carried through decks *Watight deck tubes used.*
Are any cables run through coal bunkers *no* or cargo spaces *no* or spaces which may be used for carrying cargo, stores, or baggage *yes*
If so, how are they protected *Lead covered and armoured wires used*
Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *no*
If so, how are the lamp fittings and cable terminals specially protected _____
Where are the main switches and cut outs for these lights fitted _____
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 _____
How are the returns from the lamps connected to the hull _____
Are all the joints with the hull in accessible positions _____

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 installation is _____ supplied with a voltmeter ~~and~~ *an amperemeter, fixed on switchboard*

The copper used is guaranteed to have conductivity of *98* per cent. that of pure copper.
Insulation of cables is guaranteed to have a resistance of not less than *600* 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.

THE SUNDERLAND FORCE & ENGINEERING CO., LTD.

R. W. G. W.

Electrical Engineers

Date *7 Jan 1905*

PASSES.

Distance between dynamo or electric motors and standard compass

160 feet

Distance between dynamo or electric motors and steering compass

160 feet

Nearest cables to the compasses are as follows:—

A cable carrying <i>6</i> Amperes <i>on</i> feet from standard compass <i>on</i> feet from steering compass
A cable carrying <i>5</i> Amperes <i>10</i> feet from standard compass <i>14</i> 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

See master's letter etc.

The maximum deviation due to electric currents, etc., was found to be

nil

degrees on

2 1/2

course in the case of the

standard compass and

nil

degrees on

course in the case of the steering compass.

Builder's Signature

Date

GENERAL REMARKS.

The fittings & workmanship are good and in accord with the Rules. The vessel is now ready in my opinion for service of electric light etc.

24/2.2.0

Surveyor Report 10/1/05

Book.

R. Cornick

and Foreign

THE SURVEYORS ARE REQUESTED NOT