

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 73338

At of Newcastle on Tyne Date of First Survey 8/4/20 Date of Last Survey 14/5/20 No. of Visits 7
 in on the Steel "Eagle" Port belonging to Christiania
 Book Built at Howden on Tyne By whom Northumberland Ship Co Ltd When built 1920
 No. 279 Electric Light Installation fitted by Campbell Isherwood & Co Owners' Address Arentz Halvorsen's Rederi When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

single cylinder, double acting, open type, vertical engine, direct coupled to a continuous current compound wound dynamo
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed engine room starboard side Whether single or double wire system is used double
 Location of Main Switch Board 50 on engine store having switches to groups 6 of lights, &c., as below
 Locations of auxiliary switch boards and numbers of switches on each 6 way D. Box in crew quarters, 6 way D. Box, 2-3 way
switch boxes at top of engine room.

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
 Fuse 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

Number of lights provided for 197 arranged in the following groups:—

Compasses	5	lights each of	16	candle power requiring a total current of	2.8	Amperes
Navigation	6	lights each of	32	candle power requiring a total current of	6.82	Amperes
Compass	—	lights each of		candle power requiring a total current of	15	Amperes
Cargo	35	lights each of	35 (5-16cp)	candle power requiring a total current of	31.8	Amperes
Accommodation		lights each of	81 20watt	candle power requiring a total current of	16.2	Amperes
Engineers		" " "	33 - 20 watt	" " "	6.6	"
Mast head light with	1	lamps each of	32	candle power requiring a total current of	1.2	Amperes
Side light with	1	lamps each of	32	candle power requiring a total current of	1.2	Amperes

5-300w Cargo lights of 30-16cp, 5-300watt candle power, whether incandescent or arc lights incandescent
 Are lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed in chartouse

DESCRIPTION OF CABLES.

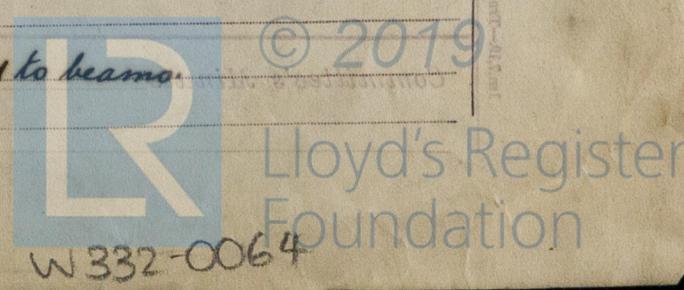
Cable carrying	100	Amperes, comprised of	19	wires, each	14	S.W.G. diameter,	.094	square inches total sectional area
Each cables carrying	31.8	Amperes, comprised of	7	wires, each	.064	S.W.G. diameter,	.0225	square inches total sectional area
Each cables carrying	6.82	Amperes, comprised of	7	wires, each	.036	S.W.G. diameter,	.007	square inches total sectional area
To lamps carrying	1.2	Amperes, comprised of	1	wires, each	18	S.W.G. diameter,	.0018	square inches total sectional area
Light cables carrying	2.8	Amperes, comprised of	7	wires, each	.036	S.W.G. diameter,	.007	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Are lead covered or armoured cables in engine room, main running forward no
 Are V.I.R. cable in pipe, cabins V.I.R. in wood casing, crew's quarters lead covered no

Are cables, how made, insulated, and protected none made

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances no 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
 Are there any joints in or branches from the cable leading from dynamo to main switch board no
 Are the cables led through the ship, and how protected through iron pipe clipped to beams



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 V.I.R. cables run in steel conduit with screened connections

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

What special protection has been provided for the cables near boiler casings 50

What special protection has been provided for the cables in engine room 50

How are cables carried through beams flushed holes through bulkheads, &c. water tight glands

How are cables carried through decks water tight deck pipes

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 V.I.R. cable run in steel conduit with steel connections

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 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 in connect boxes How fixed fixed lead clipped

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 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 1000 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.

CAMPBELL & ISHERWOOD, LTD.
Thomas Meade
 PER _____

Electrical Engineers

Date 4th June 1920

COMPASSES.

Distance between dynamo or electric motors and standard compass 80 feet

Distance between dynamo or electric motors and steering compass 75 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>2.4</u>	Amperes	<u>10</u>	feet from standard compass	<u>15</u>	feet from steering compass
A cable carrying	<u>7.0</u>	Amperes	<u>8</u>	feet from standard compass	<u>13</u>	feet from steering compass
A cable carrying	<u>100</u>	Amperes	<u>250</u>	feet from standard compass	<u>18</u>	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.

FOR THE NORTHUMBERLAND SHIPBUILDING COMPANY, LIMITED.

Thomas Gellie Builder's Signature.

Date 16/7/20

GENERAL REMARKS.

The above installation is in accordance with the Society's Rules. It has been tested & found satisfactory

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

JWD
22/7/20

W.T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

