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Rpt. 13.

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 647

Port of Vancouver, B.C. Date of First Survey 1st March Date of Last Survey 22nd June 1918 No. of Visits 10

No. in Reg. Book 1st entry on the ~~Iron~~ Steel Screw Steamer, Alaska Port belonging to Norway

Built at Vancouver, B.C. By whom J. Coughlan & Sons When built 1918.

Owners Knut Knutsen Owners' Address Norway.

Yard No. 1 Electric Light Installation fitted by J. Coughlan & Son, Vancr B.C. When fitted 1918.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Four Pole General Electric Direct Current, Single Cylinder Enclosed Type Freed Lubricating direct connected 15 K.W. Sets.

Capacity of Dynamo (Each) 136 Amperes at 110 Volts, whether continuous or alternating current Continuous.

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

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

Positions of auxiliary switch boards and numbers of switches on each Six circuit in Wheel House, Eight circuit in Officers quarters, Stbd Six circuit in crews quarters, poop Starboard Twelve circuit in engine room Starboard.

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 5 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 170 arranged in the following groups :—

A	7	lights each of	200	candle power requiring a total current of	14	Amperes
B	6	lights each of	50	candle power requiring a total current of	3	Amperes
C	4	lights each of	32	candle power requiring a total current of	4	Amperes
D	153	lights each of	25	candle power requiring a total current of	33	Amperes
E	Search light	lights each of	1	candle power requiring a total current of	35	Amperes
1	Mast head light with	1	lamps each of	32	candle power requiring a total current of	2 Amperes
2	Side lights with	1	lamps each of	32	candle power requiring a total current of	2 Amperes
8	Cargo lights of	80	candle power, whether incandescent or arc lights	Incandescent		

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

Where are the switches controlling the masthead and side lights placed Wheelhouse.

DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of #00 wires, each #00 S.W.G. diameter, Circular Mills .0850 ~~square inches total sectional area~~

Branch cables carrying 17 Amperes, comprised of #7 wires, each No 8 S.W.G. diameter, .0260 16800 ~~square inches total sectional area~~

Branch cables carrying 33 Amperes, comprised of #2 wires, each No 8 S.W.G. diameter, .0260 16800 ~~square inches total sectional area~~

Leads to lamps carrying 2 Amperes, comprised of #2 wires, each No 18 S.W.G. diameter, .0101 7150 ~~square inches~~ total sectional area

Cargo light cables carrying 3 Amperes, comprised of #7 wires, each No 10 S.W.G. diameter, .0160 11400 ~~square inches total sectional area~~

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conduit throughout ship with the exception of Captains Quarters, Officers Quarters and Crews Quarters, where wood moulding is used.

Joints in cables, how made, insulated, and protected Joints are Soldered, taped with rubber and friction tape and painted with P & B paint.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 Yes

How are the cables led through the ship, and how protected In Conduit.

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 W. T. Fittings. Armoured Cable

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Asbestos covered wire.

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

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

How are cables carried through beams Conduit *through bulkheads, &c.* Conduit

How are cables carried through decks Conduit

Are any cables run through coal bunkers ____ *or cargo spaces* ____ *or spaces which may be used for carrying cargo, stores, or baggage* Yes

If so, how are they protected Conduit

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 No

Cargo light cables, whether portable or permanently fixed Portable *How fixed* Plug.

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 (2), *fixed* 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 2500 *megohms per statute mile at 60° Farhenheit 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.

J Coughlan & Sons H B Taylor Chief Engr. *Electrical Engineers* *Date* June 29th 1918

COMPASSES.

Distance between dynamo or electric motors and standard compass 40 feet

Distance between dynamo or electric motors and steering compass 70 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	✓	*Amperes*	✓	*feet from standard compass*	✓	*feet from steering compass*
A cable carrying	✓	*Amperes*	✓	*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 ✓ *degrees on* ✓ *course in the case of the standard compass and* ✓ *degrees on* ✓ *course in the case of the steering compass.*

J Coughlan & Sons H B Taylor, Chief Engr. *Builder's Signature.* *Date* June 29th 1918.

GENERAL REMARKS.

The Electric Light Installation of good quality and workmanship tested under working conditions and found satisfactory

Eligible in my opinion to be noted Electric Light in Register Book 7-18.

It is submitted that this vessel is eligible for THE RECORD. ELEC. LIGHT 11-9-18

James Murdoch.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 17 SEP 1918

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

15—1,10—Transfer.