

SHINFU

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Rpt. 13.

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# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 9892.

Port of Leith Date of First Survey 2nd Oct. Date of Last Survey 19th Oct. No. of Visits 3  
 No. in Reg. Book on the Iron Steel S.S. "Rajah of Sarawak" Port belonging to Sarawak  
 Built at Leith By whom Ramage & Ferguson Ltd. When built 1901  
 Owners Borneo Co. Ltd. Owners Address Sarawak  
 Yard No. 178 Electric Light Installation fitted by Messrs King & Co When fitted 1901

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

King & Co. compound wound dynamo coupled to Ransomes Sun & Jeffries vertical open doubleacting engine, 6'2" x 6' 350 r.p.m.  
 Capacity of Dynamo 80 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Starboard side engine room  
 Position of Main Switch Board beside dynamo having switches to groups 5 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each  
5 distributing fuse boards, bridge pattern, (1) Eng. room (2) aft engine in (3) midships engine (4) forward engine (5)  
 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 no  
 If vessel 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 yes  
 Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of about 50% per cent over the normal current  
 Are all 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 no  
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 105 arranged in the following groups :-

A Engine room	12 lights each of	16	candle power requiring a total current of	7.2	Amperes
B Aft engine	24 lights each of	16	candle power requiring a total current of	19	Amperes
Midships	28 lights each of	16	candle power requiring a total current of	17	Amperes
Forward	17 lights each of	16	candle power requiring a total current of	14	Amperes
	24 lights each of	16	candle power requiring a total current of	14.4	Amperes
Mast head light with	1 lamps each of	32	candle power requiring a total current of	1.2	Amperes
2 Side lights with	1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
3 Cargo lights of		80	candle power, whether incandescent or are lights	incandescent	

If are lights, what protection is provided against fire, sparks, &c. none  
 Where are the switches controlling the masthead and side lights placed in cabin room upper deck.

## DESCRIPTION OF CABLES.

Main cable carrying 72 Amperes, comprised of 19 wires, each 15 L.S.G. diameter, .076 square inches total sectional area  
 Branch cables carrying 19 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .022 square inches total sectional area  
 Branch cables carrying ~ Amperes, comprised of ~ wires, each ~ L.S.G. diameter, ~ square inches total sectional area  
 Leads to lamps carrying 3 Amperes, comprised of 3 wires, each 20 L.S.G. diameter, .003 square inches total sectional area  
 Cargo light cables carrying 3 Amperes, comprised of 110 wires, each 38 L.S.G. diameter, ~ square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

India Rubber C. insulation with pure vulcanised rubber, taped, banded & compound.  
 Joints in cables, how made, insulated, and protected  
Twisted or spliced, soldered & insulated with pure rubber, w.p. tape & rubber solution.  
 Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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 no  
 How are the cables led through the ship, and how protected in wood casing with screwed on covering

No reduction in wires at lamp circuits.



**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 none

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat none

What special protection has been provided for the cables near boiler casings none

What special protection has been provided for the cables in engine room none

How are cables carried through beams in hard wood bushes through bulkheads, &c. in bushes or W. Tight glands

How are cables carried through decks W. T. glands

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 ~~~~~

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 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 double wire

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 yes supplied with a voltmeter and no an amperemeter, fixed in main switchboard

The copper used is guaranteed to have a 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.

Wright Co

Electrical Engineers

Date 18<sup>th</sup> Oct<sup>r</sup> 1901

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 35 ft

Distance between dynamo or electric motors and steering compass 28 ft

The nearest cables to the compasses are as follows:—

A cable carrying <u>15</u> Amperes	<u>14</u> feet from standard compass	<u>7</u> 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 nil degrees on all courses in the case of the standard compass and nil degrees on all course in the case of the steering compass.

Lamange & Ferguson Ltd  
Alex J. Ferguson  
Secy

Builder's Signature

Date

**GENERAL REMARKS.**

The above installation has been fitted in accordance with the Rules & in a satisfactory manner.

Thomas Field

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

It is submitted that this installation appears to meet the Rules requirements.

Lloyd's Register Foundation

25/10.01

DO NOT WRITE ACROSS THIS MARGIN.

THE SURVEYOR

REPORT FORM No. 13