

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8493.

Port of DUNDEE Date of First Survey 9-5-1924 Date of Last Survey 11-9-1924 No. of Visits 14  
 No. in on the ~~Iron~~ Steel T.S.S. "Khoen Hoea" Port belonging to Pontianak.  
 Reg. Book Built at Caledon Shipyard By whom Caledon Shipbldg. & Engr. Co. When built 1924  
 Owners The Thong Ek Steamship Company Owners' Address Pontianak, Dutch Borneo.  
 Yard No. 289 Electric Light Installation fitted by Caledon Shipbldg. & Engr. Co. Ltd. When fitted August 1924.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single Cylinder Belliss & Morcom Steam Generating Set, Cylinders  $6\frac{1}{2}$ " dia. x 4" stroke coupled to a Crompton Compound Wound Dynamo  $12\frac{1}{2}$  K.W. 105 Volts 500 R.P.M.

Capacity of Dynamo 120 ✓ Amperes at 105 ✓ Volts, whether continuous or alternating current Continuous Current.

Where is Dynamo fixed Starboard Side of Engine Room. Whether single or double wire system is used - Double ✓

Position of Main Switch Board After Bulkhead, Engine Room, Starbd. Side. having switches to groups 6 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each None. Except switches for cargo lights  
near Starboard door of engine room. Three switches each controlling four lights.

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 Yes

Are the fuses of non-oxidisable metal Yes and constructed to fuse at an excess of 20 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 202 Lights  
17 Fans arranged in the following groups :-

A	16	lights each of	5 at 100 W.	candle power requiring a total current of	8	Amperes
B	39	lights each of	11 at 30 W.	candle power requiring a total current of	14	Amperes
C	53	lights each of		candle power requiring a total current of	20	Amperes
D	37	lights each of		candle power requiring a total current of	14	Amperes
E	54	lights each of		candle power requiring a total current of	20	Amperes
F	17 Fans		60 Watts		9	Amperes
2	Mast head light with	1	lamps each of 100 W.	candle power requiring a total current of	1	Amperes
2	Side light with	1	lamps each of 100 W.	candle power requiring a total current of	2	Amperes
12	Cargo lights of		16	candle power, whether incandescent or arc lights	Incandescent	

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

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

## DESCRIPTION OF CABLES.

Main cable carrying	85	Amperes, comprised of	37	wires, each	14	S.W.G. diameter, <u>186</u>	square inches total sectional area
Branch cables carrying		Amperes, comprised of		wires, each		S.W.G. diameter,	square inches total sectional area
Branch cables carrying		Amperes, comprised of		wires, each		S.W.G. diameter,	square inches total sectional area
Leads to lamps carrying		Amperes, comprised of		wires, each		S.W.G. diameter,	square inches total sectional area
Cargo light cables carrying		Amperes, comprised of		wires, each		S.W.G. diameter,	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered and armoured in Tween Decks, Holds, Forecastle and Engine and Stokehold.

Lead covered in Crew's Quarters Aft, 2nd Class Accommodation, 1st Class Accommodation.

Joints in cables, how made, insulated, and protected

No Joints. Vulcanized Rubber, Lead Covered and Armoured.

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 None

How are the cables led through the ship, and how protected Through Beams and on Wood Grounds in Accommodation



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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 in Galvanized Tube

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

What special protection has been provided for the cables near boiler casings No Cables near Boiler Casing

What special protection has been provided for the cables in engine room Armoured & Lead Covered

How are cables carried through beams Lead Bushes through bulkheads, &c. Watertight Glands

How are cables carried through decks Galvanized Deck Tubes

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

If so, how are they protected In Bunker by 3/8" Steel Plate Covering, elsewhere Armoured & Lead Covered

Are any lamps fitted in ~~coal bunkers~~ or spaces which may at times be used for cargo, coals, or baggage In Holds only

If so, how are the lamp fittings and cable terminals specially protected Heavy Cast Iron Guards

Where are the main switches and fuses for these lights fitted Engine Room Entrance, Starboard Side

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 Permanent How fixed Secured to Deck

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 in Engine Room

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° 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.

*W. M. Gillanders*

Electrical Engineers

Date 17th September '24

COMPASSES.

Distance between dynamo or electric motors and standard compass Approximately 108 ft.

Distance between dynamo or electric motors and steering compass " 100 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	.5	Amperes	two	feet from standard compass	two	feet from steering compass
A cable carrying	.5	Amperes	two	feet from standard compass	=	feet from steering compass
A cable carrying	.5	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 nil degrees on any course in the case of the steering compass.

FOR THE CALEDON SHIPBUILDING & ENGINEERING CO. LTD.

*R. W. Hunter*

Builder's Signature.

Date 17th Sept. 1924

GENERAL REMARKS.

This Installation has been fitted on board in an efficient manner and in accordance with the Rules. The materials and workmanship are sound and good, on completion it was tried under working conditions and found satisfactory in all respects.

See L 12-0-0.

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

*J. S. Sells*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Im 14—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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