

FRI. MAR 29 1901

Received at London Office

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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41437

Port of **NEWCASTLE-ON-TYNE** Date of First Survey **Feb 26** Date of Last Survey **March 15** No. of Visits **6**
 No. in **55** on the Iron or Steel **PINNA** Port belonging to **London**
 Built at **Newcastle** By whom **Armstrong, Whitworth & Co.** When built **3-1901**
 Owners **Shell Transport & Trading Co. Ltd.** Owners Address **London**
 No. **705** Electric Light Installation fitted by **Mr. Clarke Chapman** When fitted **3-1901**

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder Double acting Engine of the Vertical Type Coupled Direct to a compound Wound continuous current Dynamo.
 Capacity of Dynamo **135** Amperes at **65** Volts, whether continuous or alternating current **continuous**
 Where is Dynamo fixed **on starting platform in main Engine Room**
 Position of Main Switch Board **near Dynamo** having switches to groups **A. B. C. D.** of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each **each light is provided with its own switch fitted near the light**
 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 **yes**
 Are the cut outs of non-oxidizable metal **yes** and constructed to fuse at an excess of **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 **yes**
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases **yes**

Total number of lights provided for **105-16CP** arranged in the following groups:-

Group	Description	Number of lights	Candle power	Amperes
A	1-20' protection 1-15 ampere			
B	lights each of	16	34.4	Amperes
C	lights each of	16	30.5	Amperes
D	lights each of	16	38.4	Amperes
E	lights each of			Amperes
1	Mast head light with 2 lamps each of	16	2	Amperes
2	Side light with 4 lamps each of	16	4	Amperes
Two	Cargo lights of 8-16 C.P.		candle power, whether incandescent or are lights	incandescent

If arc lights, what protection is provided against fire, sparks, &c. **1-15 ampere are lamps with hexagonal lantern.**

Where are the switches controlling the masthead and side lights placed **in wheel house.**

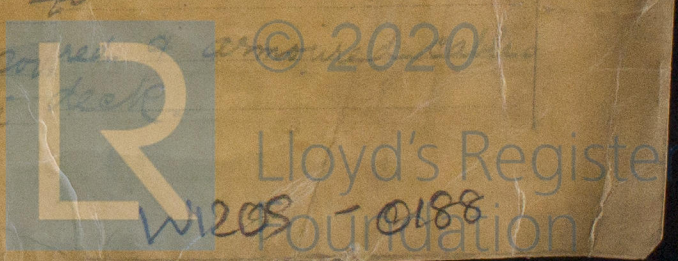
DESCRIPTION OF CABLES.

Cable Type	Amperes	Wires	L.S.G. Diameter	Area
Main cable carrying	135	34	15	1.074 square inches total sectional area
Branch cables carrying	55	4	4	0.335 square inches total sectional area
Branch cables carrying	18	4	18	0.14 square inches total sectional area
Leads to lamps carrying	1	1	18	0.018 square inches total sectional area
Cargo light cables carrying	8	300, 40	0.053, 0.11	0.12 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised rubber taped & braided & lead covered in addition, lead covered & armoured in exposed positions
 Joints in cables, how made, insulated, and protected **No joints except mechanical ones**

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, 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 **lead covered & lead covered & armoured & secured by brass clips fixed above up to the deck**



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *except in Bunkers, Yes* (Cable carried through bunkers in *galvanized iron pipes, also lead covered and armoured clipped up.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *lead covered in*

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

What special protection has been provided for the cables near boiler casings *lead covered and armoured*

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

How are cables carried through beams *in lead bushes* through bulkheads, &c. *in glands*

How are cables carried through decks *in galvanized iron water tight- deck tubes*

Are any cables run through coal bunkers *Yes* or cargo spaces *no* or spaces which may be used for carrying cargo, stores, or baggage *no*

If so, how are they protected *in galvanized iron Pipes*

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 *no*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *in cast iron watertight boxes*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *this vessel double wire system*

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 *Yes*

Are any switches, cut outs, or joints of cables fitted in the pump room or companion *no*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *in watertight fittings*

The installation is *now* supplied with a voltmeter and *also* an amperemeter, fixed *on main switch*

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 *1000* 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.

COMPASSES.

Distance between dynamo or electric motors and standard compass *140 feet*

Distance between dynamo or electric motors and steering compass *140 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Ampere	feet from standard compass	feet from steering compass
<i>8</i>	<i>8</i>	<i>6</i>	<i>6</i>
<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>
<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>

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 *N & W & S* course in the case of the standard compass and *all* degrees on *all* course in the case of the steering compass.

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules & found satisfactory.

Builder's Signature *Robert Haig* Date *27th March 1901*

Surveyor to Lloyd's Register of British and Foreign Shipping

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

No more