Rpt. 13.

Received at London Office SAT. 17 SEP. 1921

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 74744.

Port of NEWCASTLE ON TYNE Date of First Survey 2/8/21 Date of Last Survey 10/8/21 No. of Visits 5

No. in Reg. Book 24764 on the ~~Iron or~~ Steel "Montferland" Port belonging to Amsterdam

Built at Newcastle. By whom Swan Hunter & Wigham Richardson When built 1921

Owners Konink Hollandsche Lloyd. Owners' Address

Yard No. 1153. Electric Light Installation fitted by Swan Hunter & Wigham Richardson When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 in No. multipolar, compound wound dynamos coupled direct to vertical open type steam engines

Capacity of Dynamos. 92 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed engine room starboard side Whether single or double wire system is used double.

Position of Main Switch Board engine room stabd side having switches to groups 7. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each —

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-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 ✓

Total number of lights provided for 248. arranged in the following groups :—

A Officers + engs accs 96 lights each of 20 watts candle power requiring a total current of 17·5 Amperes

B Crew + offrs accs 35 lights each of 33@20 watts, 2-8 candle power requiring a total current of 7.0 Amperes

C Cargo 29 lights each of 24-40 watt, 5@100 ~~watts~~ candle power requiring a total current of 54·0 Amperes

D Bridge + navigation 32 lights each of 14@20W, 6-6cp, 4-32cp, 8-16 candle power requiring a total current of 8.0 Amperes

F Wireless " " " " " 16·0 "

E Engine + Boiler rooms 56. lights each of 7@100W, 37@30W, 10-16 candle power requiring a total current of 22·0 Amperes

G Workshop Motor " " " " " 43·0 "

2 Mast head light with 1 lamps each of 32 candle power requiring a total current of 1·12 Amperes

2 Side light with 1 lamps each of 32 candle power requiring a total current of 1·12 Amperes

— Cargo lights of — 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 Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying 92 Amperes, comprised of 19 wires, each ·083. S.W.G. diameter, ·1 ✓ square inches total sectional area

Branch cables carrying 15 Amperes, comprised of 7 wires, each ·044 S.W.G. diameter, ·01 ✓ square inches total sectional area

Branch cables carrying 54 Amperes, comprised of 19 wires, each ·052 S.W.G. diameter, ·04 ✓ square inches total sectional area

Leads to lamps carrying 2·0 Amperes, comprised of 1 wires, each ·044 S.W.G. diameter, ·0015 ✓ square inches total sectional area

Cargo light cables carrying 1·4 Amperes, comprised of 70 wires, each ·0076 S.W.G. diameter, ·003. ✓ square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables in engine room, stokehold galley etc are lead covered + armoured. Cables in tween decks, outside lights are V.I.R in conduit. Cabins + accommodation lead covered

Joints in 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 — 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 no

How are the cables led through the ship, and how protected V.I.R in conduit. clipped to underside of deck or beams with metal clips

W104-0223

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 in conduit

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

What special protection has been provided for the cables near boiler casings lead covered tarmoused.

What special protection has been provided for the cables in engine room lead covered tarmoused.

How are cables carried through beams holes bushed with lead *through bulkheads, &c.* bulkhead glands

How are cables carried through decks watertight deck tubes

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

If so, how are they protected V.I.R in 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 ——

Cargo light cables, whether portable or permanently fixed flexible from watertight boxes *How fixed* clipped to bulkhead.

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* 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 600 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.

FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. *Electrical Engineers* *Date* 24th Augst 1921

COMPASSES.

Distance between dynamo or electric motors and standard compass 140 feet

Distance between dynamo or electric motors and steering compass 160 feet.

The nearest cables to the compasses are as follows:—

A cable carrying .28 *Amperes* on the [redacted] *standard compass* 6:6" *feet from steering compass*

A cable carrying .28 *Amperes* 6:6" *feet from standard compass* on the [redacted] *steering compass*

A cable carrying 8 *Amperes* 20 *feet from standard compass* 28. *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 *courses in the case of the steering compass.*

FOR SWAN, HUNTER & WIGHAM RICHARDSON, LTD. Alplaughton *Builder's Signature.* *Date* 24th Augst 1921

GENERAL REMARKS. The above installation is in accordance with the Societys Rules. The vessel is eligible in my opinion for notation elec light, Wireless

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

Fee £17.10.0 Paid 25/8/21. 19/9/21

W. T. Badger.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 27SEP. 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

2an.11.21.—Transfer.