Rpt. 13.

Received at London Office 19

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1501

Port of Bremerhaven Date of First Survey 22nd Sept. Date of Last Survey 12th Octr. No. of Visits six

No. in Reg. Book 18 in Sept. on the ~~Iron or~~ Steel S.S. Pagenturm Port belonging to Bremen

Built at Geestemünde By whom Fa. H. Tecklenborg A.G. When built 1909

Owners D. D. Gesellschaft „Hansa" Owners' Address Bremen

Yard No. 233 Electric Light Installation fitted by Allgemeine Elektrizitäts Gesellschaft Berlin When fitted 1909

DESCRIPTION OF DYNAMO, ENGINE, ETC. Dynamo: direct current generator, Type M Pik 250, shunt wound, 13,5 Kilowatt, 8 poles, 300 revolutions per minute.

Capacity of Dynamo 123 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed main engine room Whether single or double wire system is used double wire

Position of Main Switch Board close to the dynamo having switches to groups A, B, C, D, E of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 switch board in the forecastle with 6 switches, 1 in the cardhouse on the bridge with 4 switches, 1 in the officer-rooms below the bridge with 8 switches, 1 close to the engineer rooms with 8 switches, 1 in the poop with 4 switches, 1 switch for searchlight in the cardhouse.

If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits ~~except~~ including lamp circuits yes Lamp circuit switches are of single pole type

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 138 incandescent lamps arranged in the following groups :—

A	21	lights each of	16	candle power requiring a total current of	ca 10,5 Amperes
B	42	lights each of	16	candle power requiring a total current of	„ 21,0 Amperes
C	26	lights each of	16	candle power requiring a total current of	„ 13,0 Amperes
D	12	lights each of	16	candle power requiring a total current of	„ 6,0 Amperes
E	33	lights each of	16	candle power requiring a total current of	„ 16,5 Amperes
2	Mast head light with 1	lamp each of	25 HK	candle power requiring a total current of	„ 1,6 Amperes
2	Side light with 1	lamp each of	25 HK	candle power requiring a total current of	„ 1,6 Amperes
[8	Cargo lights of	each with 5 lamps of incandescent lamps	16 HK	candle power, ~~whether incandescent or~~ and 2 arc lights	each 15 ampères]

If arc lights, what protection is provided against fire, sparks, &c. Provided with hexagon-Lanterns with panes of glass

Where are the switches controlling the masthead and side lights placed in the cardhouse on the bridge

DESCRIPTION OF CABLES.

Main cable carrying	ca 10,5 Amperes, comprised of	wires, each	L.S.G. diameter,	16	6.8 mm square ~~inches~~ total sectional area
Branch cables carrying	ca 34 Amperes, comprised of	wires, each	L.S.G. diameter,	35	21.8 mm square ~~inches~~ total sectional area
Branch cables carrying	ca 32 Amperes, comprised of	wires, each	L.S.G. diameter,	16	21.6 mm square ~~inches~~ total sectional area
Leads to lamps carrying	ca 12 Amperes, comprised of	wires, each	L.S.G. diameter,	6	7.75 mm square ~~inches~~ total sectional area
Search- ~~Cargo~~ light cables carrying	35 Amperes, comprised of	wires, each	L.S.G. diameter,	16	22.5 mm square ~~inches~~ total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables are armoured, lead covered, rubber-cable, all wires best rubber-covered rubber cdire.

Joints in cables, how made, insulated, and protected all joints and connections are made in watertight boxes

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 The cables on the free deck are lying in Libosilo-channels, in the engine- and boiler room they are fixed free at the iron walls, the cables at the masts are protected by iron pipes.

DESCRIPTION OF INSUSATION, 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 , double iron (band) armoured, ✓ seamless lead covered, seamless rubber ✓

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

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

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

How are cables carried through beams with stuffing boxes ✓ *through bulkheads, &c.* with stuffing boxes ✓

How are cables carried through decks iron pipes, filled with chatterton compound ✓

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 no ✓

If so, how are the lamp fittings and cable terminals specially protected ~~no~~

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 vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of 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 —

The installation is .... *supplied with a voltmeter and* .... *an amperemeter, fixed* on main switch board ✓

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 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~~ to resist an alternating current of 2000 Volts 700 ✓ 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.

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT ABTEILUNG J. S. Schmidt *Electrical Engineers* Date 4. Oktober 1909

COMPASSES.

Distance between dynamo or electric motors and standard compass 108'-0 ✓

Distance between dynamo or electric motors and steering compass 116'-0 ✓

The nearest cables to the compasses are as follows:—

A main *cable carrying* ca 5,7 *Amperes* 20'-0 *feet from standard compass* 20'-0 *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 no ✓ *degrees on* any ✓ *course in the case of the standard compass and* no ✓ *degrees on* any ✓ *course in the case of the steering compass.*

JOH. C. TECKLENBORG A.-G. Schiffswerft und Maschinenfabrik. [signature] *Builder's Signature.* Date 14th Oktober 1909

GENERAL REMARKS. This Installation has been tried on a twelve hours trial trip found to work well causing no deviation of the compasses so that in my opinion the notation Electric lighted might be added to the steamers class

It is submitted that this vessel is eligible for THE RECORD. Elec. light. JWD 26/10/09

F. Thomsen.

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

Committee's Minute ....

REPORT FORM No. 13.—2m.3.4.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.