

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 15210.

Port of **HAMBURG** Date of First Survey **19th July 22** Date of Last Survey **27th September 22** No. of Visits **9**.
 No. in Reg. Book **81004** on the **Iron** Steel **Twin** Sc. Motor **"TIRADENTES"** Port belonging to **TÖNSBERG**.
 Built at **HAMBURG** By whom **DEUTSCHE WERFT, A.G.** When built **1920**.
 Owners **Wilh. Wilhelmsen & Co.** Owners' Address **CHRISTIANIA**.
 Yard No. **102** Electric Light Installation fitted by **F. E. G. (Allgemeine Elektr. Ges.) - HAMBURG** When fitted **1922**.
in connection with the "Gulden"

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Motor - Generator F. E. G. running at 1470 revolutions per minute.

Capacity of Dynamo **60** Amperes at **110** Volts, whether continuous or alternating current **continuous**.
(city of connection)

Where is Dynamo fixed **Engine room.** Whether single or double wire system is used **single double in circuit**.

Position of Main Switch Board **Engine room.** having switches to groups **7. 40-L and 3 spare** lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each **1 in Fore ship with 4 switches, 1 in Captain's
 quarter with 6 switches, - one in Pub. Saloon passage with 5 switches, - one in the side
 Engineers Quarters with 11 switches - one aft in crew quarter - with 8 switches.**

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 **no**.

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 **25** 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 **209** arranged in the following groups:—

A Eng. room Fore & Stern 9 lights each of	25	candle power requiring a total current of	Amperes
B " " 56 ft Tunnel 10 lights each of	25	candle power requiring a total current of	Amperes
C " " 8 " " 8 lights each of	25	candle power requiring a total current of	Amperes
D Fore ship 7 lights each of	25	candle power requiring a total current of	Amperes
E Bridge 46 " " " " " " " " " " " "	25	candle power requiring a total current of	Amperes
F Mid ship 28 lights each of	25	candle power requiring a total current of	Amperes
G Aft 38 " " " " " " " " " " " "	25	candle power requiring a total current of	Amperes
H Mast head light with 2 lamps each of	32	candle power requiring a total current of	Amperes
I Side light with 2 lamps each of	32	candle power requiring a total current of	Amperes
J 24 Cargo lights of	25	candle power, whether incandescent or are lights	incandescent

If are lights, what protection is provided against fire, sparks, &c. **no air light**

Where are the switches controlling the masthead and side lights placed **Charthouse.**

DESCRIPTION OF CABLES.

Main cable carrying 60 Amperes, comprised of	7	wires, each	2.1 S.W.G. diameter,	25	square inches total sectional area
Branch cables carrying 45 Amperes, comprised of	7	wires, each	1.7 S.W.G. diameter,	16	square inches total sectional area
Branch cables carrying 30 Amperes, comprised of	7	wires, each	1.35 S.W.G. diameter,	10	square inches total sectional area
Branch cables carrying 28 Amperes, comprised of	1	wires, each	2.75 S.W.G. diameter,	6	square inches total sectional area
Branch cables carrying 21 Amperes, comprised of	1	wires, each	2.25 S.W.G. diameter,	4	square inches total sectional area
Leads to lamps carrying 14 Amperes, comprised of	1	wires, each	1.75 S.W.G. diameter,	2.5	square inches total sectional area
Cargo light cables carrying 14 Amperes, comprised of	50	wires, each	0.25 S.W.G. diameter,	2.5	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

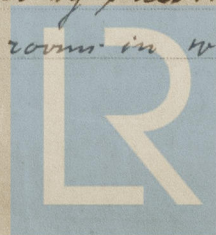
Main & Branch Cables & Lamp leads in Engine room: Copper lined, rubber insulated, lead covered
 and armoured. Lamp leads in accommodation rooms: Copper lined, rubber insu-
 lated, jute braided & impregnated.

Joints in cables, how made, insulated, and protected **water tight joint boxes - Lamp leads in accommodation
 rooms, soldered, covered with insulating jute tape.**

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances **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 **cables are carried open & protected by sheet iron flangers
 where they are exposed to mechanical risk - lamp leads in accomd. rooms in wood batten.**



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes with exception of the cables carried through bulkheads*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *armoured cables*

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 *armoured cables* through bulkheads, &c. *water tight glands*

How are cables carried through decks *deck ladder*

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

If so, how are they protected *by sheet iron casings (armoured cables)*

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

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 *portable* How fixed

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *new & brass washer*

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions *yes*

Is the installation supplied with a voltmeter *yes* and with an amperemeter *yes* fixed in *main switch board*

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 *500 M.Ω* 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.

Guilders are the

Electrical Engineers

Date *Alg. 28/10/22.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *15 m. 1 double wired in vicinity of com.*

Distance between dynamo or electric motors and steering compass *15 m. 1 pair.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>0.5</i>	<i>Amperes</i>	<i>close to</i>	<i>close to</i>
<i>Amperes</i>	<i>Amperes</i>	<i>feet from standard compass</i>	<i>feet from steering compass</i>
<i>Amperes</i>	<i>Amperes</i>	<i>feet from standard compass</i>	<i>feet from steering compass</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 *nil* course in the case of the standard compass and *nil* degrees on *nil* course in the case of the steering compass.

DEUTSCHE WERFT
AKTIENGESELLSCHAFT.

Builder's Signature.

Date *Alg. 28/10/22.*

GENERAL REMARKS.

The Electric Light Installation of this vessel is fitted in accordance with the approved plan of Society's Letter E. 28/8/22 and other wire in conformity with the requirements of the Rules eligible in my opinion for record 'Electr. Light'.

See: Please see attached report of Electr. Power Installation.

Friedrich Witt
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.