

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5200

Port of Copenhagen Date of First Survey 3rd May Date of Last Survey 24th June No. of Visits 8
 No. in Reg. Book 621 on the ~~Iron or Steel~~ Sk. Sn. 'Nordlys' Port belonging to Copenhagen
 Built at Copenhagen By whom Akt. Burmeister & Wain When built 1915-16
 Owners Dampskibsselskabet 'Nordlys' (P. Brown) Owners' Address Copenhagen
 Yard No. 305 Electric Light Installation fitted by Akt. Burmeister & Wain When fitted 1916

DESCRIPTION OF DYNAMO, ENGINE, ETC.

The dynamo is a compound wound dynamo directly coupled to a single cylinder steam engine.

Capacity of Dynamo 90 Amperes at 110 Volts, whether continuous or alternating current continuous

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

Position of Main Switch Board In engine room, near dynamo having switches to groups 4 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 forward with 2 switches, - 1 in the chart room with 7 switches, - 1 in the alleyway to saloon with 0 switches, - 1 in the engine room with 6 switches, - and 1 on the engine room top with 0 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 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 Edisons tools used.

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 144 arranged in the following groups:—

Total number of lights provided for				177	arranged in the following groups:		
A	19	lights each of	16 - 25 & 1000	candle power requiring a total current of	12	Amperes	
B	17	lights each of	16 - 25 - 32	candle power requiring a total current of	6	Amperes	
C	34	lights each of	16 - 25 - 500	candle power requiring a total current of	19	Amperes	
D	39	lights each of	16 - 25 - 1000	candle power requiring a total current of	25	Amperes	
E	35	lights each of	16 - 10	candle power requiring a total current of	22	Amperes	
	2	Mast head lights with	1 lamp each of	32	candle power requiring a total current of	2	Amperes
	2	Side lights with	1 lamp each of	32	candle power requiring a total current of	2	Amperes
	2	Cargo lights of	1000	candle power, whether incandescent or arc lights	incandescent.		
	1	"	500	"	incandescent.		
				to " lights.			

If arc lights, what protection is provided against fire, sparks, &c. No arc lights.

Where are the switches controlling the masthead and side lights placed In chart room.

DESCRIPTION OF CABLES.

Main cable carrying	84	Amperes, comprised of	19	wires, each	1.9	S.W.G. diameter,	50	square inches total sectional area
Branch cables carrying	12	Amperes, comprised of	7	wires, each	2.13	S.W.G. diameter,	25	square inches total sectional area
Branch cables carrying	25	Amperes, comprised of	7	wires, each	1.35	S.W.G. diameter,	10	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	6	Amperes, comprised of flexible		wires, each		S.W.G. diameter,	2.5	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

The copper wires are tinned - insulated with pure and vulcanized india rubber, taped and lead covered, - or insulated with pure and vulcanized india rubber, taped and lead covered, - then taped and armoured with galvanized wire or armoured with 2 layers of steel tape.

Joints in cables, how made, insulated, and protected In watertight junction boxes with screwed connections.

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 All accessible.

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 Secured by screwed clips and where necessary protected by iron tubes.

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 Lead covered and armoured cables used.

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

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

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

How are cables carried through beams Armoured cables used. watertight through bulkheads, &c. Watertight screwed glands used.

How are cables carried through decks Through iron 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 Yes.

If so, how are they protected Lead covered and armoured cables used and where necessary protected by iron tubes.

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

If so, how are the lamp fittings and cable terminals specially protected Lamps wire guarded, cable terminals covered up with strong metal covers.

Where are the main switches and fuses for these lights fitted Switches fitted where not exposed to damage, the fuses fitted outside these spaces.

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 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 ✓

Is the installation supplied with a voltmeter yes., and with an amperemeter yes, fixed On the 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 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 and safe working condition.

BURMEISTER & WAINSKIN- OG SKIBSBYGGERI

Electrical Engineers

Date

COMPASSES.

Distance between dynamo or electric motors and standard compass about 92 feet.

Distance between dynamo or electric motors and steering compass 96 feet.

The nearest cables to the compasses are, as follows:—

A cable carrying	Amperes	to lamps in the	feet from standard compass	and in the	feet from steering compass
0.5					
6		10	feet from standard compass	10	feet from steering compass
✓		✓	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 0 degrees on all course in the case of the standard compass and 0 degrees on all course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS. The whole electric lighting installation as above described is in accordance with the Rules, the workmanship and material are of good description in every respect.

Recommend the vessel to have notation of "Electric light" in the Register Book.

It is submitted that this vessel is eligible for

THE RECORD. Elec. light. AWD 25/10/16.

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

Committee's Minute

TUE 27 MAR. 1917