

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1224

Port of Antwerp Date of First Survey 3-11-20 Date of Last Survey 22-7-21 No. of Visits 9
 No. in on the Iron on Steel S.S. "UNION" Port belonging to Dunkirk
 Reg. Book 75002 Built at St. Nazaire By whom A. & C. de Penhoët When built 1921
 Owners Cie. Franc. d'Arm. et d'I. de h. de S. Owners' Address 11. B^e Malherbes - Paris
 Yard No. M^e Electric Light Installation fitted by the Builders When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1-15 k.w. turbo generator by Sautter-Harlé - 3000 revs. 25 HP. 110 V.
1-13 k.w. Simple cylinder engine by Harlé et Cie. 600 revs. 110 amps.
 Capacity of Dynamo 136 & 118 Amperes at 110 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed S. side E. R. on floor Whether single or double wire system is used Double
 Position of Main Switch Board S. side E. R. against staircase switches to groups 5 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Traverse 5 E. Room S. 17 E. Room P. 11 B. Room S. 11
Poop 22 - pantry 28 - fore-castle 18 - Bridge 12 - Bridge P. 12 - Bridge S. 6 - Upper Bridge S.
16 - Upper Bridge P. 12 - Galley 7 - Chart room 7 -

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 No

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

Total number of lights provided for 184 arranged in the following groups:—

A engine	33 lights each of	16	candle power requiring a total current of	7.0	Amperes
B boiler	11 lights each of	16	candle power requiring a total current of	2.4	Amperes
C accom ^y	133 lights each of	10	candle power requiring a total current of	18.6	Amperes
D wireless	lights each of		candle power requiring a total current of		Amperes
E chart room	2 lights each of	10	candle power requiring a total current of	.2	Amperes
	2 Mast head light with 1 lamp each of	33	candle power requiring a total current of	1.2	Amperes
	1 Stem light				
	2 Side light with 1 lamp each of	50 & 32	candle power requiring a total current of	.5	Amperes
	4 Cargo lights of	500 - 1/2 watt	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 in chart room

DESCRIPTION OF CABLES.

Main cable carrying	30 Amperes, comprised of	91 wires, each	10/10	S.W.G. diameter,	71.4	square inches total sectional area
Branch cables carrying	18 Amperes, comprised of	37 wires, each	6/10	S.W.G. diameter,	11.	square inches total sectional area
Branch cables carrying	7 Amperes, comprised of	16 wires, each	6/10	S.W.G. diameter,	5.	square inches total sectional area
Leads to lamps carrying	1 Amperes, comprised of	4 wires, each	5/10	S.W.G. diameter,	3.8	square inches total sectional area
Cargo light cables carrying	Amperes, comprised of	6 wires, each	5/10	S.W.G. diameter,	1.2	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber covered with braiding - lead covered in E & B.
Space - laid in wood flooring with wooden covers in
all sheltered parts -
 Joints in cables, how made, insulated, and protected none - junction boxes where necessary

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 in W.T. tubes with screwed sleeve joints, clipped under beams of upper deck

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes, except when loaded in 'tween decks.*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead lined Kiro' steel tubes made W.T. with screwed sleeve joints.*
 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 wiring Kiro' wood casing.*
 What special protection has been provided for the cables in engine room *ditto*
 How are cables carried through beams *None* through bulkheads, &c. *with W.T. glands*
 How are cables carried through decks *pipe about 3' high, flanged W.T. to deck.*
 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 *in steel tubes, as above*
 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 *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 ☒
 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 *M. Custer 13th*

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 *1200* 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.

COMPASSES.

Distance between dynamo or electric motors and standard compass *33 inches*
 Distance between dynamo or electric motors and steering compass *ditto*
 The nearest cables to the compasses are as follows:—
 A cable carrying *1* Amperes *lights the* feet from standard compass *and the* 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
 The maximum deviation due to electric currents, etc., was found to be degrees on course in the case of the standard compass and degrees on course in the case of the steering compass.

Builder's Signature Builder's Signature. Date *1 August 1921*
GENERAL REMARKS. *The material & workmanship of this installation are satisfactory & it has been satisfactorily tested under working conditions with the exception of the one dynamo which broke down & remains to be retested. (See letter dated 13-9-21)*
J. H. Mares Fee *£21-10s- = 1025 francs* *for reef and*
G. A. Laing Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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