

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

17 SEP 1928
Received at London Office

Date of writing Report 13-9-1928 When handed in at Local Office 15-9-1928 Port of Malmö

No. in Survey held at Malmö Date, First Survey 6th Aug. Last Survey 8th Sept. 1928.
 (Number of Visits...16...)

Reg. Book No. 91568 on the Steel Twin Screw M/s "POLLUX" Tons { Gross 8741.23
 Net 4894.40

Built at Malmö By whom built Kockums M.V. Aktief. Yard No. 156 When built 1928

Owners Trelleborgs Angf. Nya Aktief. Port belonging to Trelleborg

Electric Light Installation fitted by Kockums M.V. Aktief. Contract No. When fitted 1928

System of Distribution Two wire system

Pressure of supply for Lighting 110 volts, **Heating** **Power** 110 volts.

Direct or Alternating Current, Lighting Direct **Power** Direct

If alternating current system, state frequency of periods per second

Has the **Automatic Governor** been tested and found efficient when the whole load is suddenly thrown on or off Yes

Generators, do they comply with the requirements regarding overload Yes, are they compound wound Yes
 are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator

Where more than one generator is fitted are they arranged to run in parallel Yes, is an adjustable regulating resistance fitted in series with each shunt field Yes

Are all terminals accessible and clearly marked Yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited Yes

Position of Generators Are the lubricating arrangements of the generators as per Rule Yes
In the after part of the motor space.
 is the ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes
 if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators and are the generators protected from mechanical injury and damage from water, steam or oil Yes
 are their axis of rotation fore and aft Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and their respective generators in metallic contact Yes

Main Switch Boards, where placed On a platform above and forward of the generators
 If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes
 are they protected from mechanical injury and damage from water, steam or oil Yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards and
 are they constructed wholly of durable, incombustible non-absorbent materials Iron, is all insulation of high dielectric strength and of permanently high insulation resistance Yes, if semi-insulating material is used, are all conducting parts connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework Insulation 5-10000V fitted, and is the frame effectively earthed Yes

Are the following fittings as per Rule, viz.:— spacing or shielding of live parts Yes
 accessibility of all parts Yes, absence of fuses on back of board proportion of omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches For each generator:— A double pole circuit breaker with overload and reversed-current trips and a single pole equalizer switch. For each outgoing circuit:— A double pole linked switch and a fuse on each pole.

Instruments on main switchboard 9 ammeters 2 voltmeters synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Ohm-meter with earthing indicator for both poles.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes

Insulation of Cables, state type of cables, single or twin *Both* are the cables insulated and protected as per Tables III or IV of the Rules *Yes*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *1V + 3%*

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.007 square inch and above provided with soldering sockets *Yes*

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *Yes*

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage *Yes*

Support and Protection of Cables, state how the cables are supported and protected *Supported by metal clips. Armoured cables except in cabins where they are lead covered. Where required protected by steel sheets or pipes.*
If cables are run in wood casings, are the casings and caps secured by screws *Yes*, are the cap screws of brass *Yes*, are the cables run in separate grooves *Yes*. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI *Yes*

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *Yes*

Joints in Cables, state if any, and how made, insulated, and protected *No joints in main cables. Joints in sections cables made by means of joining boxes.*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *Yes*

Bushes in Beams and Non-watertight Positions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *Yes* state the material of which the bushes are made *Lead bushes. Armoured cables*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Yes*, are their connections made as per Rule *Yes*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule *Yes*

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *Yes*

Navigation Lamps, are these separately wired *Yes*, controlled by separate switch and separate fuses *Yes*
are the fuses double pole *Yes*, are the switches and fuses grouped in a position accessible only to the officers on watch *Yes*
has each navigation lamp an automatic indicator as per Rule *Yes*, are separate screens provided for the use of oil and electric side lights *No*
are separate oil lanterns provided for the mast head lights and side lights *Yes*

Fittings, are all fittings on weather decks, in stowholds and engine rooms and wherever exposed to drip or condensed moisture, watertight *Yes*
are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected *Yes*
are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *Lamps contained in gaslight fittings in gaslight berths.*
where are the controlling switches situated *Outside the dangerous space.*

Searchlight Lamps, No. of *Yes*, whether fixed or portable *Yes*, are their fittings as per Rule *Yes*

Are Lamps, other than searchlight lamps, No. of *Yes*, are their live parts insulated from the frame or case *Yes*, are their fittings as per Rule *Yes*

Motors, are their working parts readily accessible *Yes*, are the coils self-contained and readily removable for replacement *Yes*
are the brushes, brush holders, terminals and lubricating arrangements as per Rule *Yes*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *Yes*
are they protected from mechanical injury and damage from water, steam or oil *Yes* are their axis of rotation fore and aft *Yes*
if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type *Yes*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *Yes* and *Yes*

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed as per Rule *Yes*

Lighting Conductors, where lightning conductors are required, are these fitted as per Rule *Yes*

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings *Yes*
If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *No lamps employed to be allowed.*

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No of	RATED AT			DRIVEN BY.	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		Insulated with	HOW PROTECTED.
		Kilowatts.	Volts.	Ampères.		Revs. per Min.	Fuel Used.		
MAIN	2	95 each	110	682	350	3 cyl. Diesel Engines	Special Oil	Above 150° F	
AUXILIARY									
EMERGENCY									
ROTARY TRANSFORMER	1		110	150	1200				

LIGHTING AND HEATING CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor, Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current, Ampères.	Approximate Length, (Lead and Return.) Meters.	Insulated with	HOW PROTECTED.
				No.	Diameter, mm.				
	MAIN GENERATOR		3 x 185	39	2.52	2-700	20	Rubber	Lead covered and steel armoured
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	1	25	7	2.13	40	8	"	"
	Boiler Room	14	2-15	7	0.52	6	30	"	"
	dist. instr. board A	1	70	19	2.17	120	270	"	Lead covered and steel armoured except in cabins.
	" " B	1	25	7	2.13	40	180	"	"
	" " C	1	16	7	1.71	24	35	"	"
	" " D	1	16	7	1.71	24	35	"	"
	WIRELESS	1	2-16	7	1.35	30	200	Rubber	Lead covered and steel armoured.
	SEARCHLIGHT								
	MASTHEAD LIGHT	1	15	7	0.52	15	100-120	"	"
	SIDE LIGHTS	1	15	7	0.52	15	40	"	"
	COMPASS LIGHTS	1	15	7	0.52	15	10	"	"
	POOP LIGHTS	1	15	7	0.52	15	220	"	"
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor, Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current, Ampères.	Approximate Length, (Lead and Return.) Meters.	Insulated with	HOW PROTECTED.
				No.	Diameter, mm.				
	BALLAST PUMP	1	95	19	2.52	130	30	Rubber	Lead covered and steel armoured.
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	Emergency Bilge Pump	2	16	7	1.71	48	26	"	"
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR	1	3 x 240	61	2.24	800	32	"	"
	FRESH WATER PUMP	1	25	7	0.67	3	6	"	"
	ENGINE TURNING GEAR	2	16	7	1.71	48	10	"	"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS & Cooling water pumps	2	2 x 120	37	2.03	320	16-30	"	"
	OIL & FUEL TRANSFER PUMP	1	16	7	1.71	38	24	"	"
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR (motor gen.)	1	120	37	2.03	150	70	"	"
	WORKSHOP MOTOR	1	2-10	7	1.35	23	20	"	"
	VENTILATING FANS								
	oil separator's motor	1	50	19	1.83	105	12	"	"
	" " " "	1	50	19	1.83	105	24	"	"
	Refrigerator	1	25	7	2.13	60	20	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7.
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
 The foregoing is a correct description.

W. B. Thompson Electrical Engineers. Date _____

COMPASSES.

Distance between electric generators or motors and standard compass Engine room to bridge
 Distance between electric generators or motors and steering compass — " " "

The nearest cables to the compasses are as follows :—
 A cable carrying _____ Ampères _____ feet from standard compass _____ feet from steering compass.
 A cable carrying _____ Ampères _____ feet from standard compass _____ feet from steering compass.
 A cable carrying _____ Ampères _____ feet from standard compass _____ feet from steering compass.
 Have the compasses been adjusted with and without the electric installation at work at full power _____
 Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted _____
 The maximum deviation due to electric currents 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.

KOCKUMS MEKANISKA VERKSTADS
 AKTIE-BOLAG
G. Ahrot Builder's Signature. Date _____

Is this installation a duplicate of a previous case Yes If so, state name of vessel M/S "CASTOR"

General Remarks (State quality of workmanship, opinions as to class, &c.)
The above described electric installation has been fitted onboard this vessel under my inspection and has been tested and found satisfactory. All the Rule requirements have been complied with. The workmanship is good.

It is submitted that this vessel is eligible for THE RECORD.
Chas. Light
 19/9/28

50, 1243.—Transfer. (The Surveys are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators 150 Kilowatts

The amount of Fee ... £ 618.80 When applied for, 15-9-28
 Travelling Expenses (if any) £ _____ When received, 30-10-28
Chas. Light
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 28 SEP 1928
 Assigned Chas. Light