

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report *5th Jan 1928* When handed in at Local Office *10* Port of *Brimin* Received at London Office *16 FEB 1928*

No. in Survey held at *Brimin* Date, First Survey *21st Nov.* Last Survey *1st Febr.* 19 *28*
Reg. Book. (Number of Visits *11*)

40275 on the *STEEL TWIN SC "C.O. STILLMAN"* Tons { Gross *16436*
Net *9643*

Built at *Ugswade* By whom built *Kramer Hullman* Yard No. *646* When built *1928*

Owners *International Petroleum Co. Ltd.* Port belonging to *Toronto*

Electric Light Installation fitted by *Schiffman Electricities Ltd.* Contract No. When fitted *1927/28.*

System of Distribution *Two wire two conductors* ✓

Pressure of supply for Lighting *110* ✓ volts, Heating *-* volts, Power *220* ✓ 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 *no*, 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* Are the lubricating arrangements of the generators as per Rule *yes*

Position of Generators *in engine 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 *in engine space*

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 *yes*, 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 *yes*, 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 *yes*, proportion of omnibus bars *yes*, individual fuses to voltmeter, pilot or earth lamp *yes*, connections of switches *yes*

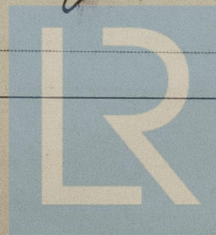
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches *each generator and each outgoing circuit is controlled by four and double pole linked switches.*

Instruments on main switchboard *3* ammeters *3* 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 *one voltmeter and earth lamp*

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*



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

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *5%*

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 *Yn*

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 *Yn*

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 *Yn*

Support and Protection of Cables, state how the cables are supported and protected *metal clips and suit iron plating*

If cables are run in wood casings, are the casings and caps secured by screws *Yn*, are the cap screws of brass *Yn*, are the cables run in separate grooves *Yn*. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI *Yn*

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

Joints in Cables, state if any, and how made, insulated, and protected *by watertight joint boxes*

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

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

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *The generators and frame of switchboard are earthed, area of earthing connection about 25 mm.*

are their connections made as per Rule *Yn*

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

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *steam driven generator in engine room.*

Navigation Lamps, are these separately wired *Yn*, controlled by separate switch and separate fuses *Yn*

are the fuses double pole *Yn*, are the switches and fuses grouped in a position accessible only to the officers on watch *Yn*

has each navigation lamp an automatic indicator as per Rule *Yn*, are separate screens provided for the use of oil and electric side lights *Yn*

are separate oil lanterns provided for the mast head lights and side lights *Yn*

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight *Yn*

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 *Yn*

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 gas tight fittings*

enclosed in gas tight tubing

where are the controlling switches situated *on deck*

Searchlight Lamps, No. of *2*, whether fixed or portable *fixed*, are their fittings as per Rule *Yn*

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

Motors, are their working parts readily accessible *Yn*, are the coils self-contained and readily removable for replacement *Yn*

are the brushes, brush holders, terminals and lubricating arrangements as per Rule *Yn*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *Yn*

are they protected from mechanical injury and damage from water, steam or oil *Yn* are their axis of rotation fore and aft *Yn*

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 *Yn*

if not of this type, state distance of the combustible material horizontally or vertically above the motors *Yn* and *Yn*

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

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule *Yn*

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 *Yn*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *Yn*

The oil engine set removed & replaced by 3 turbine drive sets (1 turbo 125KW + 1 nat + 1 steam 60KW)

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY.	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	100 each	230	450	300	Steam engine	Gas oil	about 150° F
AUXILIARY	1	50	230	225	300	"		
EMERGENCY	1	15	200	65	400	Steam engine		
ROTARY TRANSFORMER	2	25 each	115	220	1550	Electric motor		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor.	COMPOSITION OF STRAND.		Total Maximum Current.	Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	240	91	1.84	450	25	Rubber	Lead covered & armoured
	AUXILIARY GENERATOR	1	185	61	1.97	225	30	"	"
	EMERGENCY GENERATOR	1	35	19	1.53	65	30	"	"
	ROTARY TRANSFORMER...	1	150	61	1.77	220	15	"	"
	AUXILIARY SWITCHBOARDS	1	95	37	1.81	120	50	"	"
	ENGINE ROOM								
	BOILER ROOM								
	WIRELESS	1	16.0	19	1.04	35	70	"	"
	SEARCHLIGHT	1	2.5	19	1.30	40	10	"	"
	MASTHEAD LIGHT...	1	1.5	1	1.38	2	60	"	"
	SIDE LIGHTS...	1	1.5	1	1.38	2	15	"	"
	COMPASS LIGHTS	1	1.5	1	1.38	2	10	"	"
	POOP LIGHTS	1	1.5	1	1.38	2	100	"	"
	CARGO LIGHTS	1	2.5	1	1.78	4	80	"	"
	ARC LAMPS								
	HEATERS	1	70	37	1.55	100	40	"	"

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor.	COMPOSITION OF STRAND.		Total Maximum Current.	Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP	1	70	37	1.55	120	15	Rubber	Lead covered & armoured
	EMERGENCY BILGE PUMP	2	16	19	1.04	each 60	each 15	"	"
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS	1	70	37	1.55	100	15	"	"
	CIRC. FRESH WATER PUMPS	1	70	37	1.55	128	15	"	"
	AIR COMPRESSOR	1	6	11	.64	28	30	"	"
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	16	19	1.04	each 40	each 20	"	"
	OIL FUEL TRANSFER PUMP	1	240	91	1.84	400	200	"	"
	WINDLASS	2	50	19	1.83	each 140	each 30	"	"
	WINCHES, FORWARD	1	50	19	1.83	140	30	"	"
	WINCHES, AFT	2	70	37	1.55	each 140	each 60	"	"
	STEERING GEAR	5	50	19	1.83	80	30	"	"
	WORKSHOP MOTOR	1	4	19	.52	24	15	"	"
	VENTILATING FANS	3	50	19	1.83	each 140	each 30	"	"
	Boiler feed pump	2	70	37	1.55	" 100	" 15	"	"
	Low Oil Separator	1	4	19	.52	20	20	"	"
	Low Oil Separator	1	1.5	1	1.38	75	20	"	"
	Fans	2	2.5	1	1.78	each 16	" 20	"	"
	Fans	2	16	19	1.04	" 40	" 30	"	"
	"	1	1.5	1	1.38	6	15	"	"
	Oil fuel pump	1	1.5	1	1.38	7.5	15	"	"
	Ref. pump	1	4	19	.52	24	25	"	"

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.

SCHIFFSUNION
Elektrische Maschinen- und Kesselbau-Gesellschaft
Zweibüro Bremen

Electrical Engineers.

Date

Bremen
9. Febr. 1928

COMPASSES.

Distance between electric generators or motors and standard compass *about 20 meters*

Distance between electric generators or motors and steering compass *about 20 meters*

The nearest cables to the compasses are as follows:—

A cable carrying *1* Ampères *3* feet from standard compass *2 meters* feet from steering compass.

A cable carrying *1/2* Ampères *2.5* feet from standard compass *1.5 meters* 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 *yes*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted *yes*

The maximum deviation due to electric currents 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.

BREMER VULKAN
Schiffbau und Maschinenfabrik.

Builder's Signature.

Date *9. Febr. 1928*

Is this installation a duplicate of a previous case *no* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)

This electric installation has been fitted in conformity with the approved plans, the Secretary's letters and the requirements of the Rules, tried under working conditions and was found in order. The materials used in the construction and the workmanship are good.

It is submitted that
this vessel is eligible for
THE RECORD. Elec. light.

Total Capacity of Generators *2600* Kilowatts

The amount of Fee ... £ *38 : 3* : *14/2 28*

Travelling Expenses (if any) £ *2 : 0* : *5 3 28*

Committee's Minute

TUES. 6 MAR 1928

Assigned

Elec. light

G. H. C. Käm

Surveyor to Lloyd's Register of Shipping.