

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 23 MAY 1930

Date of writing Report

19

When handed in at Local Office

22 - 5 - 1930 Port of Belfast.

No. in Survey held at

Belfast.

Date, First Survey

11th April

Last Survey

8th May

1930

Reg. Book.

(Number of Visits.....7...)

on the *Steel Tug Sc "IRIS BANK"*

Tons { Gross

Net

Built at

Belfast.

By whom built

Workman, Clark (1928) Ltd. Yard No. 510.

When built 1930.

Owners

Bank Line Ltd.

Port belonging to

Belfast.

Electric Light Installation fitted by

Sunderland Forge & Eng Co Ltd.

Contract No.

When fitted 1930.

System of Distribution

DOUBLE WIRE.

Pressure of supply for Lighting

220

volts, Heating

220

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 rating

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, clearly marked, and furnished with sockets

Yes.

, are they so spaced or shielded that they cannot be accidentally earthed,

short circuited, or touched

Yes.

Are the lubricating arrangements of the generators as per Rule

Yes.

Position of Generators

ENGINE ROOM 2 PORT 1 STARBOARD

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 axes 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

ENGINE ROOM PORT SIDE

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, non-ignitable 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 insulated from the slab

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework

Yes.

and is the frame effectively earthed

Yes.

Are the fittings as per Rule regarding: — 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

T.P. CIRCUIT BREAKERS FOR MAIN GENERATORS D.P. SWITCHES & D.P. FUSES FOR FEEDER CIRCUITS.

Instruments on main switchboard

5

ammeters

5

volts

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

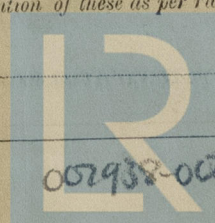
EARTH LAMPS AND SWITCH & FUSE ON EACH POLE CONNECTED TO EARTH.

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

Yes.

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

Yes.



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Foundation

Cables: Single, twin, concentric, or multicore SINGLE are the cables insulated and protected as per Tables IV or V of the Rules YES.
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5.0 V.D.
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 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 -

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 L.C.B. CABLES RUN IN STRONG GALV. IRON PIPES IN TWEEN DECKS & CLIPPED TO STEEL TRAYS IN ENG. & BOILER ROOMS.

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

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

Joints in Cables, state if any, and how made, insulated, and protected NONE.

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 Partitions, 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 FORE & LEAD.

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

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 NO EMERGENCY INSTALLATION.

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.

Secondary Batteries, are they constructed and fitted as per Rule NONE.

Fittings, are all fittings on weather decks, in aloft holds 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 NONE.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected NONE, how are the cables led -.

where are the controlling switches situated -.

Searchlight Lamps, No. of NONE, whether fixed or portable -, are their fittings as per Rule -.

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

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 axes 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 - and -.

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule YES.

Lightning 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. -

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

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	135	220	613	310	FIAT DIESEL ENGINE.		
AUXILIARY ...	1	65	220	295	400	BELLIS & MORESON ENGINE		
EMERGENCY ...								
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	4	2.25	37	.093	613	70	VARN. CAMBRIC.	LEAD COVERED & BRAID.
	EQUALISER CONNECTIONS ...	1	.25	37	.093	306	36	"	"
	AUXILIARY GENERATOR ...	2	.25	37	.093	295	140	"	"
	EMERGENCY GENERATOR ...								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS ...								
	ENGINE ROOM ...								
	BOILER ROOM ...	2	2.003	3	.036	13	50	RUBBER	"
	ACCOMMODATION ...								
	NAV. SALOON & FORD. ACC.	2	.01	7	.044	7.8	330	"	"
	MIDSHIP & FWD. ACC.	2	.003	3	.036	6.5	140	"	"
	OIL HEATERS	2	.1	19	.083	109	60	"	"
	WIRELESS ...	2	.01	7	.044	25	200	"	"
	SEARCHLIGHT ...								
	MASTHEAD LIGHT...	2	.002	3	.029	.18	880	"	"
	SIDE LIGHTS ...	2	.002	3	.029	.18	80	"	"
	COMPASS LIGHTS ...	2	.002	3	.029	.09	10	"	"
	POOP LIGHTS ...								
	CARGO LIGHTS ...	2	.007	7	.036	9	140	"	"
	ARC LAMP HEATERS FORD.	2	.06	19	.064	71.5	330	"	"
	HEATERS MIDSHIP.	2	.06	19	.064	77	140	"	"

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP ...	1	.1	19	.083	102	200	RUBBER	L.C.B.
	MAIN BILGE LINE PUMPS ...	1	.04	19	.052	64	70	"	"
	GENERAL SERVICE PUMP ...	1	.04	19	.052	64	220	"	"
	EMERGENCY BILGE PUMP ...								
	SANITARY PUMP ...								
	CIRC. SEA WATER PUMPS ...	2	.02	37	.083	179	100	"	"
	CIRC. FRESH WATER PUMPS ...								
	AIR COMPRESSOR ...	1	.15	37	.072	226	200	VARN. CAMBRIC.	"
	FRESH WATER PUMP ...								
	ENGINE TURNING GEAR ...	2	.01	7	.044	29	100	RUBBER	"
	ENGINE REVERSING GEAR ...								
	LUBRICATING OIL PUMPS ...	2	.075	19	.072	77	100	"	"
	OIL FUEL TRANSFER PUMP ...	1	.0225	7	.064	39	200	"	"
	WINDLASS ...								
	WINCHES, FORWARD ...								
	WINCHES, AFT ...								
	STEERING GEAR—								
	(a) MOTOR GENERATOR ...								
	(b) MAIN MOTOR ...	2	.075	19	.072	96	400	"	"
	WORKSHOP MOTOR ...	1	.007	7	.036	21	110	"	"
	VENTILATING FANS ...								
	REFRIG. MACHINERY ...	6	.2	37	.093	179	150	"	"
	PROV. REFRIG. MOTOR ...	1	.01	7	.044	11.5	400	"	"
	OIL PURIFIERS, ETC. ...	5	.01	7	.044	32.5	150	"	"

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.

p. pro. THE SUNDERLAND FORGE & ENG. CO. LTD.,

Electrical Engineers.

Date 16.5.30.

Thos Thompson

COMPASSES.

Distance between electric generators or motors and standard compass 140 FEET.

Distance between electric generators or motors and steering compass 140 FEET.

The nearest cables to the compasses are as follows:—

A cable carrying 2.2 Ampères 10 feet from standard compass 6 feet from steering compass.

A cable carrying 2 Ampères - feet from standard compass 6 feet from steering compass.

A cable carrying 2 Ampères 6 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 nil degrees on all courses in the case of the standard compass, and nil degrees on all courses in the case of the steering compass.

FED WORKMAN CLARK (1928) LIMITED

W. H. Clark

SECRETARY

Builder's Signature.

Date

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 installation has been constructed under special survey. The materials and workmanship are sound and good. It has been tried under working conditions with satisfactory results. In my opinion the vessel is eligible for notation "Electric light."

It is submitted that
this vessel is eligible for
NOTATION.

Elec light

J. K. Williams

Total Capacity of Generators 335 Kilowatts.

The amount of Fee ... £ 39 : 17 : 6

When applied for,
22 May 1930

Travelling Expenses (if any) £

When received,
5.6.1930

John K. Williams

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elec Lt



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