

Rpt. 13.

No. 10,488

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 15th Oct. 1930 When handed in at Local Office 20-10-1930 Port of Belfast Received at London Office 21 OCT 1930
No. in Survey held at Reg. Book. Date, First Survey 5th Aug Last Survey 29th Sept 1930
on the "TWEEDBANK." (Number of Visits 8)

Built at BELFAST SHIPYARD. By whom built WORKMAN CLARK & CO (1928) LTD. Yard No. 513. When built 1930.
Owners BANK LINE LTD. Port belonging to BELFAST.
Electric Light Installation fitted by SUNDERLAND FORGE & ENGR. CO LTD. Contract No. 513. When fitted 1930.
Is the Vessel fitted for carrying Petroleum in bulk

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 1 STARBOARD 2 PORT.
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.
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

I.P. CIRCUIT BREAKERS FOR EACH GENERATOR. D.P. SWITCH & D.P. FUSES FOR EACH FEEDER.

Instruments on main switchboard 3 ammeters 3 voltmeters synchronising device for paralleling purposes.

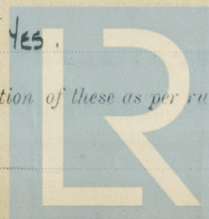
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

LAMPS CONNECTED TO EARTH THRO' SWITCH & FUSE ON EACH POLE.

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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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

LEAD COVERED ABRADED CABLES IN GALV. IRON PIPE IN TWEEN DECKS & CLIPPED TO STEEL TRAYS IN ENGINE ROOM.

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 & LEAD.

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 FIBRE & LEAD.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas NONE.

23, 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 NONE.

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 -

Fittings, are all fittings on weather decks, in stokeholds 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 -

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected -

-, how are the cables led

where are the controlling switches situated -

Searchlight Lamps, No. of -, 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	Flat Diesel Engine.		
AUXILIARY	1	65	220	295	400	Belliss & Morcom Engine.		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	2	5	37	.093	613	613	70	V.C.	L.C.B.
EQUALISER CONNECTIONS	1	.25	37	.093	306	309	35	"	"
AUXILIARY GENERATOR	1	.25	37	.093	295	309	140	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM									
BOILER ROOM	2	.006	3	.036	13	24	5	RUBBER	"
AUXILIARY SWITCHBOARDS									
Navy's Saloon Accommodation	1	.01	7	.044	7.8	31	330	"	"
MIDSHIP WARD Accommodation	1	.003	3	.036	6.5	12	140	"	"
ACCOMMODATION									
HEADERS FORD	1	.06	19	.064	71.5	83	330	"	"
" MIDSHIP	1	.06	19	.064	77	83	140	"	"
WIRELESS	1	.01	7	.044	25	31	200	"	"
SEARCHLIGHT									
MASTHEAD LIGHT	1	.002	3	.029	18	7.8	880	"	"
SIDE LIGHTS	1	.002	3	.029	18	7.8	80	"	"
COMPASS LIGHTS	1	.002	3	.029	9	7.8	10	"	"
POOP LIGHTS									
CARGO LIGHTS	1	.007	7	.036	9	24	140	"	"
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	.1	19	.083	102	118	200	RUBBER	L.C.B.
MAIN BILGE LINE PUMPS	1	1	.04	19	.052	64	64	70	"	"
GENERAL SERVICE PUMP	1	1	.04	19	.052	64	64	220	"	"
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS	2	1	.02	37	.083	179	184	100	"	"
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR	1	1	.15	37	.072	220	222	200	VAMP. CAM	"
FRESH WATER PUMP										
ENGINE TURNING GEAR	2	1	.01	7	.044	29	31	100	RUBBER	"
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2	1	.075	19	.072	77	97	100	"	"
OIL FUEL TRANSFER PUMP	1	1	.0225	7	.064	39	46	200	"	"
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	2	1	.075	19	.072	86	97	400	"	"
WORKSHOP MOTOR	1	1	.007	7	.036	21	24	110	"	"
VENTILATING FANS										
REFRIG. MACHINERY	6	1	.32	37	.083	179	194	150	"	"
PROV. REFRIG. MOTOR	1	1	.01	7	.044	11.5	31	400	"	"
OIL PURIFIERS	5	1	.01	7	.044	30	31	150	"	"
OIL HEATERS	-	1	.1	19	.093	69	118	60	"	"

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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 & ENGINEERING CO.LD. Electrical Engineers.

Date 15th Oct. 1930.

COMPASSES.

Distance between electric generators or motors and standard compass

140 FEET

Distance between electric generators or motors and steering compass

130 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 1.8 Ampères 6 feet from standard compass - feet from steering compass.

A cable carrying 1.8 Ampères - feet from standard compass 6 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 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.

J. Cunningham

Builder's Signature.

Date

Is this installation a duplicate of a previous case Yes. If so, state name of vessel

Yaybank

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
THE RECORD. Elec. Light.

27/10/30

Total Capacity of Generators 335 Kilowatts.

The amount of Fee ... £ 39 : 17 : 6

When applied for,

20th Oct. 30.

Travelling Expenses (if any) £

When received,

27.10.30

John. K. Williams

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elect.



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