

Rpt. 13.

No. 10,451

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

[4 SEP 1930]

Date of writing Report

19

When handed in at Local Office

3-9-1030

Port of

Belfast

No. in Survey held at

Belfast.

Date, First Survey 2<sup>nd</sup> June

Last Survey 12<sup>th</sup> August 1930

Reg. Book.

on the MV "TAYBANK."

(Number of Visits.....)

Tons { Gross  
Net

Built at

Belfast.

By whom built

Workman, blank (1928) Ltd. Yard No. 512.

When built 1930.

Owners

Bank Line Ltd.

Port belonging to

Belfast.

Electric Light Installation fitted by

The Sunderland Forge & Eng. Co. Ltd.

Contract No.

When fitted 1930.

Is the Vessel fitted for carrying Petroleum in bulk

No.

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

Main 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, port aft, middle grating.

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

Triple pole circuit breakers for Main Generator.  
Double Pole switches and fuses for each feeder circuit

Instruments on main switchboard

3

ammeter

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

damps connected

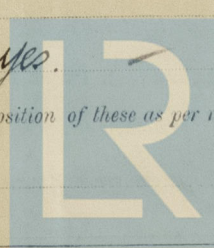
to earth through switch and fuse on each pole.

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

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 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 Lead covered & braided cables in galvanized iron pipe in tween decks and clipped to steel trays in machinery space.

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 VIII 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 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 armoured 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

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 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 Yes

Fittings, are all fittings on weather decks, in storerooms 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 Yes

how are the cables led

where are the controlling switches situated Yes

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

Arc 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 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

Totally enclosed, 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 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 Yes

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

## PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	135	220	615	310	Flat Diesel Engines		
AUXILIARY	1	65	220	295	400	Bellevue/Maxon Steam 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	0.003	37	0.093	613	613	70	V. Cambric	Lead covered & Braided
EQUALISER CONNECTIONS	1	0.003	37	0.093	306	309	35	do	do
AUXILIARY GENERATOR	1	0.003	37	0.093	295	309	140	do	do
EMERGENCY GENERATOR									
ROTARY TRANSFORMER	2	0.006	3	0.036	13	24	50	Rubber	do
ENGINE ROOM									
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
Navigation, Saloon & Ward	1	0.002	7	0.044	7.8	31	330	do	do
Midship & aft Accom.	1	0.003	3	0.036	6.5	12	140	do	do
ACCOMMODATION									
Oil Heaters	1	0.002	19	0.083	109	118	60	do	do
WIRELESS	1	0.010	7	0.044	25	31	200	do	do
SEARCHLIGHT									
MASTHEAD LIGHT	1	0.002	3	0.029	1.8	7.8	880	do	do
SIDE LIGHTS	1	0.002	3	0.029	1.8	7.8	80	do	do
COMPASS LIGHTS	1	0.002	3	0.029	0.9	7.8	10	do	do
POOP LIGHTS									
CARGO LIGHTS	1	0.007	7	0.036	9	24	140	do	do
ARC LAMP HEATERS FORD	1	0.060	19	0.064	71.5	83	330	do	do
HEATERS MIDSHIP	1	0.060	19	0.064	77	83	140	do	do

## 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	0.002	19	0.083	102	118	200	Rubber	Lead Covered & Braided
MAIN BILGE LINE PUMPS	1	1	0.040	19	0.052	64	64	70	do	do
GENERAL SERVICE PUMP	1	1	0.040	19	0.052	64	64	220	do	do
EMERGENCY BILGE PUMP										
SAINTARY PUMP										
CIRC. SEA WATER PUMPS	2	1	0.200	37	0.083	179	184	100	do	do
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR	1	1	0.160	37	0.072	236	222	200	V. Cambric	do
FRESH WATER PUMP										
ENGINE TURNING GEAR	2	1	0.010	7	0.044	29	31	100	Rubber	do
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2	1	0.075	19	0.072	79	97	100	do	do
OIL FUEL TRANSFER PUMP	1	1	0.0225	7	0.068	39	46	200	do	do
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR	2	1	0.075	19	0.072	86	97	200	do	do
(b) MAIN MOTOR	1	1	0.007	7	0.036	21	24	110	do	do
WORKSHOP MOTOR										
VENTILATING FANS										
REFRIG. MACH.	6	1	0.2	37	0.083	179	184	180	do	do
PROVISION REFRIG.	1	1	0.01	7	0.044	115	31	400	do	do
OL PURIFIERS	5	1	0.01	7	0.044	32.5	31	150	do	do



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.

THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers.

Date 1st Sept. 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 -/8 Ampères 6 feet from standard compass - feet from steering compass.

A cable carrying -/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 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 course in the case of the steering compass.

PRO WORKMAN CLARK (1928) LIMITED.

F. Cunningham

Builder's Signature.

Date

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

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

This installation has been constructed under special survey. The materials & 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.

8/9/30.

Total Capacity of Generators 335. Kilowatts.

The amount of Fee ... £ 39 : 17 : 6

When applied for,  
3-9-30.

Travelling Expenses (if any) £ :

When received,

15-9-30 R.M.V.

John. K. Williams  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elec. Light



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