

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 30 APR 1930

Date of writing Report **5-4-1930** When landed in at Local Office **28-4-1930** Port of **GLASGOW.**

No. in Survey held at **GLASGOW** Date, First Survey **3-2-30** Last Survey **10-4-1930**  
 Reg. Book. (Number of Visits.....8.....)

**41817** on the **S.S. "PRINCESS JOAN."** Tons { Gross **5251**  
 Net

Built at **GOVAN.** By whom built **FAIRFIELD S. & E. CO. LTD.** Yard No. **639** When built **1930.**

Owners **MESS<sup>RS</sup> THE CANADIAN PACIFIC R<sup>Y</sup> CO.** Port belonging to **VICTORIA.**

Electric Light Installation fitted by **MESS<sup>RS</sup> FAIRFIELD S. & E. CO. LTD.** Contract No. **639.** When fitted **1930.**

System of Distribution **TWO WIRE.**

Pressure of supply for Lighting **110** volts, Heating **110** volts, 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 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 **No.**, 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 **IN ENGINE ROOM, HOLD LEVEL, PORT & 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 Board, where placed **ON SWITCH BOARD PLATFORM IN 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 **IN SAME COMPARTMENT.**

Switchboard, 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 **—**,  
 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 **EACH GENERATOR HAS A 750 AMP. D.P. SWITCH & TWO 400 AMP FUSES IN PARALLEL ON EACH POLE, CONNECTED TO SEPARATE POSITIVE & COMMON**

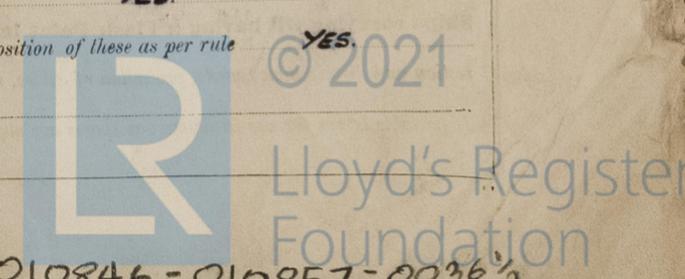
**NEGATIVE BUS-BARS, ONE OF THESE SWITCHES BEING A CHANGE-OVER-SWITCH FOR SHORE SUPPLY TO SWITCHBOARD. EACH OUTGOING CIRCUIT HAS A S.P.C.O. SWITCH & 2 S.P. HANDBOARD FUSES.**

Instruments on main switchboard **Two** ammeters **TWO** 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 **EARTH LAMPS WITH SWITCHES & FUSES.**

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.**



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 4.8.

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 NONE

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 MAIN CABLES:- LEAD COVERED, ARMoured & BRAIDED SUPPORTED ON SHEET IRON TRAYS OR BULKHEAD BY GALV. IRON CLIPS, BRANCH CABLES:- V.I.R. IN GALV. CONDUIT FOR ENGINE ROOM & BOILER ROOM, OTHER BRANCH CABLES V.I.R. IN CASING OR LEAD COVERED & BRAIDED SUPPORTED ON BEAMS OR SHEET IRON TRAYS BY BRASS CLIPS.  
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 unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed YES state the material of which the bushes are made SHEET LEAD.

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

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 GENERATOR.

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 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 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 ONE, whether fixed or portable FIXED, are their fittings as per Rule YES

Arc Lamps, other than searchlight lamps, No. of NONE, 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 ---, 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	75	110	682	500	2 CYLINDER COMPOUND	---	---
AUXILIARY						STEAM 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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	0.6000	91	.093	682	95	PURE RUBBER	LEAD COVERED & BRAIDED
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
10	BOILER ROOM	2	0.0750	19	.072	54.72	30	"	LEAD COVERED ARMoured & BRAIDED.
	L.P. CHARGING	2	0.0045	7	.029	5	50	"	"
	NAVIGATION LIGHTS	2	0.0045	7	.029	1.81	600	"	" & V.I.R.
11	POLICE LIGHTING	2	0.0225	7	.064	34.6	160	"	LEAD COVERED ARMoured & BRAIDED.
9	DINING SALOON, GALLEY & CREW	2	0.0750	19	.072	52.36	256	"	"
8	ENGINEERS & CAR SPACE AFT	2	0.0225	7	.064	30.1	160	"	"
7	CREW & CAR SPACE FORWARD	2	0.0225	7	.064	32.3	160	"	"
1	ACCOM. BOAT DECK PORT	2	0.0750	19	.072	96.4	200	"	"
2	" " " STARBOARD	2	0.0750	19	.072	93.8	170	"	"
3	" " " PORT	2	0.1000	19	.083	94.8	200	"	"
4	" " " STARBOARD	2	0.0750	19	.072	82.6	170	"	"
5	" " " PORT	2	0.1000	19	.083	110	180	"	"
6	" " " STARBOARD	2	0.2500	37	.093	143.16	135	"	"
	WIRELESS	2	0.0600	19	.052	30	495	"	" & V.I.R.
	SEARCHLIGHT	2	0.0600	19	.064	60	600	"	"
	MASTHEAD LIGHT								
	SIDE LIGHTS								
	COMPASS LIGHTS								
	POOP LIGHTS								
13	CARGO LIGHTS	2	0.0225	7	.064	13.09	160	"	LEAD COVERED ARMoured & BRAIDED.
12	HEATERS	2	0.2000	37	.093	228	135	"	"

MOTOR CONDUCTORS

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	ELEVATOR	1	0.2500	37	.093	194	490	PURE RUBBER	LEAD COVERED ARMoured & BRAIDED.
14	BOAT HOISTS FORWARD	2	0.2000	37	.083	160	160	"	"
15	BOAT HOISTS AFT	2	0.2000	37	.083	160	258	"	"
	STEERING GEAR								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								
16	VENTILATING FANS	12	0.0600	19	.064	64.15	160	"	"

0680-  
 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.

*Effkinnes* Electrical Engineer. Date *16<sup>th</sup> April 1930*

COMPASSES.

Distance between electric generators or motors and standard compass *32 FEET FROM W/T. ALTERNATOR.*  
 Distance between electric generators or motors and steering compass *32 " " " "*  
 The nearest cables to the compasses are as follows:—  
 A cable carrying *.27* Amperes *IN* feet from standard compass *IN* feet from steering compass.  
 A cable carrying *.27* Amperes *IN* feet from standard compass *IN* feet from steering compass.  
 A cable carrying \_\_\_\_\_ Amperes \_\_\_\_\_ 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 *any* course in the case of the standard compass, and *Nil* degrees on *any* course in the case of the steering compass.

For The Fairfield Shipbuilding & Engineering Co. Ltd. Builder's Signature. Date \_\_\_\_\_

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

General Remarks (State quality of workmanship, opinions as to class, &c.) *This installation has been fitted on board under special survey. Tested under full working conditions and found satisfactory. The materials and workmanship were found to be good and sound.*

*A.B.*  
*28/4/30*

It is submitted that  
 this vessel is eligible for  
 THE RECORD. *Elec. Light*  
*J.H.* *2/5/30*

Total Capacity of Generators *150* Kilowatts.

The amount of Fee ... .. £ *34.0.0* : *14.4.30.* When applied for.  
 Travelling Expenses (if any) £ : : *24.5.30* When received.

*J. Rankin*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 29 APR 1930* *JRH*

Assigned *Elec. Light.*

Im. 228.—Transfer.  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

