

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

1 FEB 1928

Received at London Office

Date of writing Report 12.1. 1928 When handed in at Local Office 28.1. 1928 Port of GLASSGOW.

No. in Survey held at GLASSGOW. Date, First Survey 26.10.27 Last Survey 16.1. 1928  
Reg. Book.10010 on the S. S. BEAVERFORD. Tons { Gross 10042  
Net

Built at GLASSGOW. By whom built BARCLAY CURLE &amp; CO. Yard No. 617 When built 1928

Owners THE CANADIAN PACIFIC RY CO. Port belonging to LONDON.

Electric Light Installation fitted by MESSRS ALEX. ANDERSON &amp; CO. Contract No. 617 When fitted 1928.

## System of Distribution

Two Wire

Pressure of supply for Lighting 110 volts, Heating none volts, Power 110 volts.

Direct or Alternating Current, Lighting Direct Current Power Direct Current

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

## Position of Generators

Engine Room 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

No Woodwork 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 near generators.

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

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 micaite 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

450 amp. Double Pole Switch and Double Pole Fuses

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 Earth Lamps

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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Lloyd's Register  
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 2 volts  
**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 In holds single lead covered armoured braided on steel trays and steel plate covers in engine room steel trays in accommodation lead covered and braided on battens  
 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 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 lead  
**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas all armoured and lead bonded by brass strip 3/4" broad and glands at fittings, are their connections made as per Rule yes  
**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule None  
**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 None  
**Fittings,** are all fittings on weather decks, in storerooms and engine rooms and where 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 Cattle Deck Type and fittings with hinged covers and double pole switch on Deck  
 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 None  
**Searchlight Lamps, No. of** None, whether fixed or portable None, are their fittings as per Rule —  
**Are Lamps,** other than searchlight lamps, No. of None are their live parts insulated from the frame or case None 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.	R.P.M.		Fuel Used.	Flash Point of Fuel.	
MAIN ...	3	50	110	455	500	Steam Engine			
AUXILIARY ...	—	—	—	—	—	—			
EMERGENCY ...	—	—	—	—	—	—			
ROTARY TRANSFORMER	—	—	—	—	—	—			

  

LIGHTING AND HEATING CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRANDS.		Total Maximum Current Am. res.	Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
3	MAIN GENERATOR...	2	85	12	.093	455	126	V.I.R.	Lead covered armoured braided
	EQUALISER CONNECTIONS...	—	—	—	—	—	—	—	—
	AUXILIARY GENERATOR...	—	—	—	—	—	—	—	—
	EMERGENCY GENERATOR...	—	—	—	—	—	—	—	—
	ROTARY TRANSFORMER...	—	—	—	—	—	—	—	—
	AUXILIARY SWITCHBOARDS...	—	—	—	—	—	—	—	—
	ENGINE ROOM...	2	.03	19	.044	43	40	V.I.R.	Lead covered armoured braided
	BOILER ROOM...	2	.15	34	.042	103	180	V.I.R.	Lead covered armoured braided
	ACCOMMODATION...	2	.06	19	.064	60	700	V.I.R.	Lead covered armoured braided
	WIRELESS...	2	.004	4	.036	13.5	200	V.I.R.	Lead covered armoured braided
	SEARCHLIGHT...	2	.002	3	.029	5	600	V.I.R.	Lead covered armoured braided
	MASTHEAD LIGHT...	2	.002	3	.029	5	60	—	—
	SIDE LIGHTS...	2	.002	3	.029	5	500	—	—
	COMPASS LIGHTS...	2	.002	3	.029	5	60	—	—
	POOL LIGHTS...	2	.06	19	.064	60	400	—	—
	CARGO LIGHTS...	2	.06	19	.064	60	400	—	—
	ARC LAMPS...	—	—	—	—	—	—	—	—
	HEATERS...	—	—	—	—	—	—	—	—

  

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRANDS.		Total Maximum Current Am. res.	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...	—	—	—	—	—	—	—	—
	WINDLASS...	—	—	—	—	—	—	—	—
	WINCHES, FORWARD...	—	—	—	—	—	—	—	—
	WINCHES, AFT...	—	—	—	—	—	—	—	—
	STEERING GEAR...	—	—	—	—	—	—	—	—
	(a) MOTOR GENERATOR...	—	—	—	—	—	—	—	—
	(b) MAIN MOTOR...	—	—	—	—	—	—	—	—
	WORKSHOP MOTOR...	—	—	—	—	—	—	—	—
	VENTILATING FANS Holds...	6	.1	19	.083	25 ea	420 ft	V.I.R.	Lead covered armoured braided
	Mechanical Stokers...	4	.1	19	.083	26/62 ea	248	V.I.R.	Lead covered armoured braided
	Induced Draught Fan...	2	.15	34	.042	155 ea	260	V.I.R.	Lead covered armoured braided
	Forced Draught Fan...	1	.1	19	.083	110 ea	200 ft	V.I.R.	Lead covered armoured braided
	Refrig. Cooling Fans...	2	.1	19	.083	51 ea	210	V.I.R.	Lead covered armoured braided
	Sounding Machine...	1	.004	4	.036	23	50	V.I.R.	Lead covered armoured braided



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.

For ALEXANDER ANDERSON, Ltd,

*J.M. Weber*

Secretary

Electrical Engineers.

Date 13<sup>th</sup> Jan. 1928

COMPASSES.

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

Distance between electric generators or motors and steering compass 145 " " "

The nearest cables to the compasses are as follows:—

A cable carrying 14 Ampères 3 ft feet from standard compass 3 feet from steering compass.

A cable carrying 95 Ampères 10 feet from standard compass 10 feet from steering compass.

A cable carrying 25 Ampères in feet from standard compass in 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 Builder's Signature

*H. Scully*

Builder's Signature.

Date 23/1/28

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

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.*

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

*J.D.*  
2/2/28

Total Capacity of Generators 150. Kilowatts.

The amount of Fee ... £ 34:0:0

When applied for,

2/1/28

Travelling Expenses (if any) £

When received,

3.2.28

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

Committee's Minute GLASGOW 31 JAN 1928

Assigned

*Elec. Light.*

*W.M.*



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