

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 27 JAN 1930

Received at London Office

Date of writing Report

19

When handed in at Local Office

24-1

1930 Port of

Belfast

No. in Survey held at

Belfast

Date, First Survey

Last Survey

21 Jan 1930

Reg. Book.

(Number of Visits)

23180 on the

STEEL TWIN SC.

HIGHLAND HOPE

Tons

Gross

Net

Built at

Glasgow

By whom built

Harland & Wolff Ltd.

Yard No. 813 G.

When built 1930

Owners Nelson & Co. Ltd. (N. & W. Nelson, Ltd. Mgrs.)

Port belonging to

Belfast

Electric Light Installation fitted by

Harland & Wolff Ltd.

Contract No. 813 G.

When fitted 1930

System of Distribution Two wire direct current to distributing boxes.

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 generators in motor room port & star. Emergency generators in house on boat deck.

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

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 On switchboard platform. Fore end of motor 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

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

breakers with reverse current, time limits & interlocked equalizer switch for each generator.

D.P. overload circuit breaker or D.P. switch & fuses for each outgoing circuit.

Instruments on main switchboard

7

ammeters

2

voltmeters arranged

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

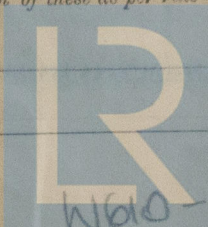
Earth lamps.

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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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 *10*
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 cables run on plating in accommodation & in steel troughing filled with bitumastic cement on open decks.*
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 *Junction boxes used for all joints.*
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 metal portable fittings not fitted to steelwork of ship are earthed with connection equivalent to working conductor.* 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 *Emergency dynamo house Boat Deck - controlled from Emergency Switch board in same house. Generators direct coupled to diesel engines.*
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 *—* 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 *best iron guarded fittings* 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 except vertical motors* 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 *—*
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	4	200	220	910	225	Diesel Engines			
AUXILIARY						"			
EMERGENCY	2	50	220	227	400	"			
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 GENERATORS, Ford	8	0.6	91	.093	910	100	Rubber	Lead covered (8 gauges)
	MAIN GENERATOR, Aft.	2	0.6	91	.093	910	150	Rubber	
	EMERGENCY GENERATOR	2	0.3	37	.103	227	51	"	
	ROTARY TRANSFORMER	1	0.1	19	.083	114	25	"	
	AUXILIARY SWITCHBOARDS	2	0.25	37	.093	217	750	"	
	ENGINE ROOM	—	—	—	—	—	—	—	
	BOILER ROOM	—	—	—	—	—	—	—	
	ACCOMMODATION	—	—	—	—	—	—	—	
	WIRELESS	2	0.01	7	.044	15	780	Rubber	Lead Covered
	SEARCHLIGHT	2	0.003	3	.036	.5	200	Rubber	Lead Covered
	MASTHEAD LIGHT	2	"	"	"	"	55	"	"
	SIDE LIGHTS	2	"	"	"	"	30	"	"
	COMPASS LIGHTS	2	"	"	"	"	—	—	—
	POOP LIGHTS	—	—	—	—	—	—	—	—
	CARGO LIGHTS	2	0.007	7	.036	15.5	30	"	"
	ARC LAMPS	—	—	—	—	—	—	—	—
	HEATERS	—	—	—	—	—	—	—	—

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	1	0.06	19	.064	77	108	Rubber	Lead Covered
	MAIN BILGE LINE PUMPS	2	0.04	19	.052	51	177	"	"
	GENERAL SERVICE PUMP	—	—	—	—	—	—	—	—
	EMERGENCY BILGE PUMP	1	0.075	19	.072	88	591	"	"
	SANITARY PUMP	1	0.1	19	.083	111	180	"	"
	CIRC. SEA WATER PUMPS	4	0.12	37	.064	122	110	"	"
	CIRC. FRESH WATER PUMPS	2	0.06	19	.064	68	330	"	"
	AIR COMPRESSOR	—	—	—	—	—	—	—	—
	FRESH WATER PUMP	1	0.007	7	.036	15.5	189	"	"
	ENGINE TURNING GEAR	2	0.04	19	.052	58	300	"	"
	ENGINE REVERSING GEAR	—	—	—	—	—	—	—	—
	LUBRICATING OIL PUMPS	4	0.25	37	.093	190	450	"	"
	OIL FUEL TRANSFER PUMPS	2	0.04	19	.052	48	240	"	"
	WINDLASS	1	0.3	37	.103	330	315	"	"
	WINCHES, FORWARD 1, 2, 3	3	0.1	19	.083	130	170	"	"
	WINCHES, 4, 5, 6, 7, 8, 9	6	0.06	19	.064	94	210	"	"
	STEERING GEAR	2	0.3	37	.103	230	750	"	"
	(a) MOTOR GENERATOR	—	—	—	—	—	—	—	—
	(b) MAIN MOTOR	—	—	—	—	—	—	—	—
	WORKSHOP MOTOR	5	0.003	3	.036	10	50	"	"
	VENTILATING FANS	4	0.01	7	.044	28	180	"	"
	WINCHES, 10, 11 & 12	3	0.06	19	.064	94	450	"	"
	" 13, 14 & 15	3	0.06	19	.064	94	210	"	"
	" 16, 17 & 18	3	0.06	19	.064	94	570	"	"
	VENTILATION FANS	2	0.04	19	.052	57	210	"	"
	"	4	0.003	3	.036	10	120	"	"

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



Electrical Engineers.

Date

22/1/30

COMPASSES.

Distance between electric generators or motors and standard compass 160 feet to generators 22 feet to nearest motor.

Distance between electric generators or motors and steering compass 156 feet to generators 18 feet to nearest motor.

The nearest cables to the compasses are as follows:—

A cable carrying 39 Ampères 16 feet from standard compass 14 feet from steering compass.

A cable carrying 32 Ampères 16 feet from standard compass 14 feet from steering compass.

A cable carrying Ampères 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 course in the case of the standard compass, and Nil degrees on all course in the case of the steering compass.



Builder's Signature.

Date 21-1-30.

Is this installation a duplicate of a previous case? Yes If so, state name of vessel Highland Monarch &c

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

This work has been done under Special Survey. The materials and workmanship are sound and good. The installation has been tried out under full 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

29/1/30

Total Capacity of Generators 900 Kilowatts.

The amount of Fee ... £ 54: - : When applied for, 25-1-19-30

Travelling Expenses (if any) £ : : When received, 17-2-19-30

Committee's Minute

FRI. 31 JAN 1930

Assigned

R. Lee Ames.

Surveyor to Lloyd's Register of Shipping.



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