

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office - 9 DEC 1936

Date of writing Report 23-11-1936 When handed in at Local Office 5.12.1936 Port of Glasgow.

No. in Survey held at Glasgow Date, First Survey 27.10.36 Last Survey 26-11-1936
Reg. Book. (Number of Visits 14)87729 on the S.S. "CROSSGAR" Tons { Gross 661
Net 287

Built at Glasgow. By whom built A.J. Inglis Ltd Yard No. 988P When built 1936

Owners John Kelly Ltd. Port belonging to Belfast.

Electric Light Installation fitted by Harland & Wolff Ltd Contract No. 988P When fitted 1936

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wire

Pressure of supply for Lighting 110 volts, Heating — volts, Power — volts.

Direct or Alternating Current, Lighting Switch ✓ Power —

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 temperature rise 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 —, is an adjustable regulating resistance fitted in

series with each shunt field Yes Have certificates of test results for machines under 100 kw. been submitted and

approved Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing —

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. 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 In engine room near generator.

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

is it of an approved type 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 Indanox. is the non-hygroscopic insulating material of an approved

type 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, temperature rise of

omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the

"off" position No are all screws and nuts securing connections effectively locked Yes are any fuses fitted on the live side of

switches No Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

D.P. switch fuses for generator. S.P. switch & D.P. fuses for each outgoing circuit. ✓

Are turbine driven generators fitted with emergency trip switch as per rule — Are cupboards or compartments containing switchboards composed of

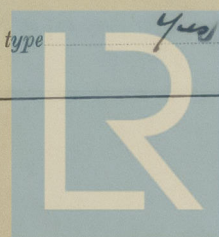
fire-resisting material or lined with approved material — Instruments on main switchboard 1 ✓ ammeters 1 ✓

voltage — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

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 are the fusible cutouts of an approved type Yes have the reversed



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current protection devices been tested under working conditions.

Joint Boxes, Section and Distribution Boards, is the

construction, protection, insulation, material, and position of these as per rule

Cables: Single, twin, concentric, or multicore. *Single & twin* are the cables insulated and protected as per Tables IV, V, X or XI of the Rules

If the cables are insulated otherwise than as per Rule, are they of an approved type

Fall of Pressure, state maximum between bus bars and

any point of the installation under maximum load

3.5 Volts

Cable Sockets, are the ends of all cables having a sectional

area of 0.04 square inch and above provided with soldering sockets. *all less than .04* Paper Insulated and Varnished Cambric Insulated Cables.

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound

or waterproof insulating tape. 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

Support and Protection of Cables, state how the cables are supported and protected. *Main. V.I.R. Wended in gals. tubing, Accommodation. R.C. Machy space. R.C.A. B.*

If cables are run in wood casings, are the casings and caps secured by screws

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements

Joints in Cables, state if any, and how made, insulated, and protected

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed

Earthing Connections, state what earthing connections are fitted and their respective sectional areas. *Lead covering & sanding of cables bonded & earthed*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven

Navigation Lamps, are these separately wired

are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight

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

are all fittings suitably ventilated

Heating and Cooking Appliances, are they constructed and fitted as per Rule

Searchlight Lamps, No. of

Are Lamps, other than searchlight lamps, No. of

Motors, are their working parts readily accessible

are the brushes, brush holders, terminals and lubricating arrangements as per Rule

inflammable gases cannot accumulate and clear of all inflammable material

water, steam or oil

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

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing

field and motor speed regulators, starters and controllers constructed and fitted as per Rule

are required, are these fitted as per Rule

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 self-contained, battery-fed type approved by the Home Office

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule

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	1	3.75	110	34	450	Steam Engine		
AUXILIARY								
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rate.			
MAIN GENERATOR	1	.0145	7	.052	34	37	12	Rubber	L.C.O.A.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	.003	3	.036	5.5	12	60	"	"
BOILER ROOM	1	.003	3	.036	5.5	12	60	"	"
AUXILIARY SWITCHBOARDS	1	.007	7	.036	12.4	24	246	"	"
MID + FOR LIGHTING D.B. No 2	1	.007	7	.036	12.4	24	246	"	"
AFT. LIGHTING D.B. No 3	1	.003	3	.036	5.5	12	60	"	"
NAVIGATION	1	.003	3	.036	2.9	12	246	"	"
ACCOMMODATION									
WIRELESS									
SEARCHLIGHT	1	.002	3	.029	36	7.8	80	"	V.I.R. & L.C.
MASTHEAD LIGHT	1	.002	3	.029	36	7.8	80	"	L.C.
SIDE LIGHTS	1	.002	3	.029	18	7.8	30	"	L.C.
COMPASS LIGHTS									
POOP LIGHTS									
CARGO LIGHTS									
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rate.			
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										

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

For HARLAND AND WOLFF, LIMITED

Electrical Engineers.

Date 30th November 1936

Ab

Govan Secretary

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

160 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 36 Ampères — feet from standard compass 24 in. feet from steering compass.

A cable carrying 2.9 Ampères — feet from standard compass 10 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 — degrees on — course in the case of the standard

compass, and 1/2 degrees on any. course in the case of the steering compass.

A. & J. HOLLIS, LIMITED

W. S. Milne

Manager.

Builder's Signature.

Date

3rd Dec 1936

Is this installation a duplicate of a previous case

No.

If so, state name of vessel

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

The electrical equipment of this

vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship were found good and sound.

5/12/36.

Noted

Rm

10.12.36

Total Capacity of Generators 3.75 Kilowatts.

The amount of Fee ... £ 5 : 0 :

When applied for, 7-DEC 1936

Travelling Expenses (if any) £ :

When received, 12.12.36

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 8-DEC 1936

Assigned SEE ACCOMPANYING MACHINERY REPORT.

2m. 5.34.—Transfer.
The Surveyors are requested not to write on or below the space for Committee's Minute.



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