

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

FEB 15 1938

Received at London Office

Date of writing Report 19 When handed in at Local Office 9/21 1938 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Hewcastle Date, First Survey 5 Nov 1937 Last Survey 3<sup>rd</sup> Feb 1938  
 Reg. Book. Suff. (Number of Visits 8)

39204 on the M.V. "Mytongate" Tons { Gross 410  
 Net 215

Built at Hewcastle By whom built Belando (Successors) Yard No. 36 When built 1937

Owners Hull Gates Shipping Co Ltd Port belonging to Hull

Electric Light Installation fitted by Campbell Isenwood & Co Ltd Contract No. 36 When fitted 1937

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Double wire

Pressure of supply for Lighting 110 volts, Heating — 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 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 No, 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 (4 in 10) 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 Engine room port side, 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 side

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 Yes, 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 S.P.S. & O.P. fuses for dynamos. S.P.S. & O.P. fuses on all outgoing circuits, lighting & power

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 2 ammeters 2 voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection Yes

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Elamps coupled to E through switches & fuses. 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

Yes

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

Yes

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 5.0K lighting, 3.4K power

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

area of 0.04 square inch and above provided with soldering sockets

Yes

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

Yes

Yes

Support and Protection of Cables, state how the cables are supported and protected V.I.R. in conduit in machinery spaces, holds + exposed parts of wood. L.C. in acc.

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

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

home made

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

lead

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

are their connections made as per Rule

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

Navigation Lamps, are these separately wired

Yes

controlled by separate switch and separate fuses

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

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

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

Yes

Yes

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

Yes

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

Yes

are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material

Yes

Yes

are they protected from mechanical injury and damage from water, steam or oil

Yes

Yes

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

Yes

Yes

if not of this type, state distance of the combustible material horizontally or vertically above the motors

and

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

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

are all fuses of the filled cartridge type

are they of an approved type

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

Yes

## 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	15	110	136	1000	Oil engine		
AUXILIARY	1	3	110	27	900	do		
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.	Rule.			
MAIN GENERATOR	1	15	37	.072	136	152	36	V.I.R.	L.C.B.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	0.145	7	.052	27	37	45	V.I.R.	do
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	.007	7	.036	3.0	24	20	do	in heavy gauge conduit
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION	1	.007	7	.036	12.4	24	50	do	do
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	1	.002	3	.029	.4	4.8	200	do	do
SIDE LIGHTS	1	.002	3	.029	.4	4.8	3.0	do	L.C.
COMPASS LIGHTS	1	.002	3	.029	.25	7.8	15	do	do
STOW LIGHTS	1	.002	3	.029	.4	7.8	45	do	do
CARGO LIGHTS	1	.0017	40	.0045	3	5.0	120	do	Lat type
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.	Rule.			
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	1	1	.06	19	.064	66	83	225	V.I.R.	in heavy gauge conduit
WINCHES, AFT	1	1	.06	19	.064	66	83	60	do	do
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										



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Lloyd's Register  
Foundation



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.

CAMPBELL & ISHERWOOD, LTD,

PER

*John Meade*

Electrical Engineers.

Date *15 Feb 1938*

#### COMPASSES.

Distance between electric generators or motors and standard compass *30 feet*

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying *25* Amperes *on the* feet from standard compass. — feet from steering compass.

A cable carrying Amperes feet from standard compass. 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* *Do the filled in after adjustment of compasses*

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.

FOR AND ON BEHALF OF

CLELANDS (SUCCESSORS) LIMITED.

*David Dawson*

DIRECTOR.

Builder's Signature.

Date *3/2/38*

Is this installation a duplicate of a previous case *yes*. If so, state name of vessel *M.V. "Hullgate"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The above inst<sup>n</sup> has been fitted out under special survey. The materials used & workmanship are good. The insulation resistance is satisfactory. The dynamo, governors main board, aux machinery & the whole installation has been examined & tested under working conditions & found satisfactory*

Noted.

*W. T. Badger*

*16.2.38*

Total Capacity of Generators *18* Kilowatts.

The amount of Fee ... £ *16 : 10* :

When applied for,

*14 FEB 1938*

When received.

Travelling Expenses (if any) £ : :

*16.3.38*

*W. T. Badger*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

**FRI. 18 FEB 1938**

Assigned *See other F.E. report*