

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office. **MAR 30 1939**

Date of writing Report. 23rd Mar. 1939 When handed in at Local Office. **29 MAR 1939** Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 7th February Last Survey 22nd March 1939
Reg. Book. Suppl. (Number of Visits. 2)

87308 on the S.S. "BRETWALDA" Tons {Gross... 4906
Net... 2766

Built at Sunderland By whom built J. L. Thompson & Smith Yard No. 591 When built 1939

Owners Hall Bros. S.S. Co. Ltd. Port belonging to Newcastle

Electrical Installation fitted by The Sunderland Eng. & Ing. Co. Ltd. Contract No. 591 When fitted 1939

Is vessel fitted for carrying Petroleum in bulk no Is vessel equipped with D.F. yes E.S.D. yes Gy.C. no Sub.Sig. no

Have plans been submitted and approved yes System of Distribution double wire Voltage of supply for Lighting 110

Heating Power 110 Direct or Alternating Current, Lighting yes Power yes If Alternating Current state frequency Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off yes Are turbine emergency governors fitted with a trip switch as per Rule

Generators, are they compound wound yes, are they level compounded under working conditions yes, if not compound wound state distance between generators and from switchboard

Where more than one generator is fitted are they arranged to run in parallel , are shunt field regulators provided yes

Is the compound winding connected to the negative or positive pole Positive

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Have certificates of test for machines under 100 kw. been supplied yes and the results found as per rule yes

Are the lubricating arrangements and the construction of the generators as per rule yes Position of Generators Engine room starboard side aft

is the ventilation in way of generators satisfactory yes are they clear of inflammable material yes, if situated near unprotected combustible material state distance from same horizontally and vertically

are the generators protected from mechanical injury and damage from water, steam and oil yes, are the bedplates and frames earthed yes

and the prime movers and generators in metallic contact yes Switchboards, where are main switchboards placed Engine room starboard side on aft bulkhead

are they in accessible positions, free from inflammable gases and acid fumes yes, are they protected from mechanical injury and damage from water, steam and oil yes

if situated near unprotected combustible material state distance from same horizontally and vertically , what insulation material is used for the panels Slate

if of synthetic insulating material is it an Approved Type , if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule yes

Is the frame effectually earthed yes Is the construction as per Rule yes, including accessibility of parts yes

absence of fuses on the back of the board yes, individual fuses to pilot and earth lamps, voltmeters, etc. yes

locking of screws and nuts yes, labelling of apparatus and fuses yes, fuses on the "dead" side of switches yes

Description of Main Switchgear for each generator and arrangement of equaliser switches Double pole Knife switch and double pole fuse.

and for each outgoing circuit Single pole knife switch and double pole fuse

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Instruments on main switchboard One

ammeters One voltmeters synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection

Earth Testing, state means provided Edamps coupled to E through two fuses

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an approved type Yes, are all fuses labelled as per Rule Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Yes. Cables, are they insulated and protected as per the appropriate Tables of the Rules Yes, if otherwise than as per Rule are they of an approved type Yes, state maximum fall of pressure between bus bars and any point under maximum load less than 1/3 inch, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Yes with insulating compound Yes or waterproof insulating tape Yes. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes, are cables laid under machines or floorplates Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected L.C.A.B. cables clipped to surface in machinery spaces; V.I.R. cables run in galvanized screwed pipe in two decks; L.C.A.B. cables clipped to wood grounds or to surface in accom. Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes. Refrigerated chambers, are the cables and fittings as per Rule Yes. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed Yes and with what material Lead & zinc. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Yes and method of control Yes.

Navigation Lamps, are they separately wired Yes controlled by separate double pole switches Yes and fuses Yes. Are the switches and fuses in a position accessible only to the officers on watch Yes, is an automatic indicator fitted Yes. Secondary Batteries, are they constructed and fitted as per Rule Yes, are they adequately ventilated Yes. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present Yes, if so, how are they protected Yes.

and where are the controlling switches fitted Yes, are all fittings suitably ventilated Yes. are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of Yes, whether fixed or portable Yes, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes. are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. Motors, are all motors constructed and installed as per Rule Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Yes, if situated near unprotected combustible material state minimum distance from same horizontally Yes and vertically Yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Yes. Control Gear and Resistances, are they constructed and fitted as per Rule Yes. Lightning Conductors, where required are they fitted as per Rule Yes. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with Yes, are all fuses of the cartridge type Yes. are they of an approved type Yes. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type Yes. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Yes, are they suitably stored in dry situations Yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory Yes.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	15	110	137	550	Single cyl. steam engine		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX LENGTH (lead plus return lead).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	15	1	19/072	137	157	44	V.C.	L.C.A.B. in pipe
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus return lead).	INSULATED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS						
Cargo Qty. Section Board	1	7/044	17	31	140	V.I.R. In galv. pipe
Trickshop Qty. Section Board	1	7/044	30	31	140	V.I.R. In galv. pipe

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus return lead).	INSULATED WITH.	HOW PROTECTED.
WIRELESS		1	7/036	15/20	24	360 V.I.R. In pipe & L.C.A.B.
NAVIGATION LIGHTS		1	3/036	4	12	360 V.I.R. In pipe & L.C.A.B.
LIGHTING AND HEATING						
Saloon & Prod. Cargo Qty. D.B. (1)	1	7/044	6+5	31	260+20	V.I.R. In galv. pipe
Aft. Cargo Qty. D.B.	1	7/029	6	18.2	200	V.I.R. In galv. pipe
Aft. Assom. Qty. D.B.	1	7/036	8	24	300	V.I.R. In galv. pipe
Engin. Assom. Qty. D.B.	1	3/036	10	12	60	V.I.R. L.C.A.B.
Saloon Qty. D.B.	1	7/029	12	18.2	260	V.I.R. In galv. pipe
Connection for searchlight *	1	7/044	-	31	96	V.I.R. L.C.A.B.

* Note: 2nd from cargo lighting S.B. with C.O. switch, making either cargo lighting D.B. or searchlight to be supplied.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus return lead).	INSULATED WITH.	HOW PROTECTED.
Repairing Machine	1	3	7/044	27	31	400	V.I.R. In galv. pipe
Workshop motor	1	1	7/036	9	24	42	V.I.R. In galv. pipe

W11-0080(2/2)

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.
 All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.
 The foregoing is a correct description.

16 *Sunderland Torgerby Co Ltd.* Electrical Engineers. Date *25. 3. 1939*
A.S. Gurney

COMPASSES.

Minimum distance between electric generators or motors and standard compass *180 feet*

Minimum distance between electric generators or motors and steering compass *176 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.14* Ampères *on the* feet from standard compass *12* feet from steering compass.

A cable carrying *.14* Ampères *12* feet from standard compass *on the* 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 *his* degrees on *every* course in the case of the

standard compass, and *his* degrees on *FOR AND ON BEHALF OF JOSEPH THOMPSON & SONS, LIMITED.* course in the case of the steering compass.

FOR AND ON BEHALF OF
 JOSEPH THOMPSON & SONS, LIMITED.

R.S. Thompson Builder's Signature. Date

Managing Director,

Is this installation a duplicate of a previous case *No* If so, state name of vessel

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.) *The electrical equipment of this vessel has been installed under special survey. The materials used and the workmanship are good. On completion the equipment was run under working conditions, the governing, compounding and regulation of the generating set was tested and the insulation resistance of all circuits was measured. This equipment is, in my opinion, suitable for a classed vessel.*

Noted
L.S.
4/4/39

Total Capacity of Generators *15* Kilowatts.

The amount of Fee ... £ *15* : — : *29 MAR 1939*

Travelling Expenses (if any) £ : : *14. 4. 1939*

Stantonson

Surveyor to Lloyd's Register of Shipping.

WEC 12 APR 1939

Committee's Minute

Assigned *See Old. 78 32601*

2m.10.38.—Transfer. (MADE IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

