



Rpt. 13.

No. 25047

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 10.10. 19 61. When handed in at Local Office 24.10. 19 61. Port of LEITH

No. in Survey held at Leith Date, First Survey 23.3.61. Last Survey 6.10.19.61.

Reg. Book. (No. of Visits 12.)

41556. on the Motorship "TORO" Tons { Gross 512  
Net 255

Built at Leith By whom built Henry Robb Ltd. Yard No. 481. When built 1961.

Owners Union Lighterage Co. Ltd. Port belonging to London

Installation fitted by Henry Robb Ltd. When fitted 1961.

Is vessel equipped for carrying Heavy Oil with FP. above 150° F. Yes Is vessel equipped with D.F. No E.S.D. No Gy.C. No Sub.Sig. No Radar No

Plans, have they been submitted and approved Yes System of Distribution DC 2 Wire insulated. Voltage of Lighting 110

Heating 110 Power 110 D.C. or A.C., Lighting DC Power DC If A.C. state frequency -

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fitted with a trip switch - Generators, are they compound wound Yes, and level compounded under working conditions Yes

Are the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole Negative

Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing None Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule Yes Position of Generators In Engine Room on floor level (2 - Port side and 1 - Starboard side).

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil Yes Switchboards, where are main switchboards placed In Engine Room on floor level, starboard side.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes, what insulation is used for the panels PIERRITE "B", if of synthetic insulating material is it an Approved Type Yes, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule - Is the construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgear for each generator and arrangement of equaliser switches T.P.H.O. Air-break Circuit Breaker. 3rd pole as equaliser switch to make first and break last.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit D.P.H.O. Knife switches and fuses - open type.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 6 ammeters 4 voltmeters - synchronising devices. For compound machines in parallel are the ammeters and reverse current protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided 2 lamps in series-mid point earthed. Preference Tripping, state if provided -, and tested -

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses "ARTIC" moulded, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 150%, and at what current do the reverse current protective devices operate Approx. 15% Cables, are they insulated and protected as per Rule Yes if otherwise than as per Rule are they of an Approved Type -, state maximum fall of pressure between bus bars and any point under maximum load 4.26 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends 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 any cables laid under machines or floorplates No, if so, are they adequately protected - State type of cables (if in conduit this should also be stated) in machinery spaces VCLC & VRILC, galleys VCLC & VRILC and laundries - State how the cables are supported or protected supported on perforated cable trays and protected with sheet metal where liable to damage.

Are all lead sheaths, armouring and conduits effectually bonded and earthed 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 Refrigerated chambers, are the cables and fittings as per Rule -

Have refrigeration fan motors been constructed under survey - and test certificates supplied -

Are the motors accessible for maintenance at all times -



014887 - 014898 - 0376 1/2

Alternative Lighting, are the groups of lights in the engine ~~and boiler~~ room arranged as per Rule. Yes. Emergency Supply, state position in battery Room on Raised quarter deck within Engine Room Casing stn. 25 - 27 (Centre line)

Navigation Lamps, are they separately wired. Yes controlled by separate double pole switches 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. Is an alternative supply provided. Yes

Secondary Batteries, are they constructed, fitted and adequately ventilated as per Rule. Yes, state battery capacity in ampere hours. 140. Where required to do so does it comply with 1948 International Convention. -

Lighting, is fluorescent lighting fitted. -. If so, state nominal lamp voltage. - and compartments where lamps are fitted. -

Fittings, are all fittings on weather decks, ~~in stowholds~~ and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. Yes

Searchlights, No. of -, whether fixed or portable. -, are they of the carbon arc or of the filament type. -

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. Oil Filled Electric Radiators. Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil. Yes

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment. -. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. None

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule. Yes

Lightning Conductors, where required are they fitted as per Rule. -

Ships carrying Oil having a Flash Point of less than 150° F. Have all the special requirements of the Rules for such ships been complied with. -, are all fuses of an Approved Cartridge Type. -, make of fuse. -. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships. -. Are all cables lead covered as per Rule. -

E.S.D., if fitted state maker. - location of transmitter and receiver. -

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations. Yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory. Yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kw. per Generator.	Volts.	Amps.	R.P.M.	TYPE.	MAKER.
MAIN No. 1 & 2	2	Sunderland Forge	35	110	318	1000	Diesel	Russell Newberry
No. 3	1	Lancashire Dynamo & Crypto Ltd.	10	110	91	1250	Diesel	Deutz
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. In Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR No. 1 & 2	2	35	1	37/093	318	✓ 363	99	V.C.	Lead Sheathed
" " EQUALISER No. 1 & 2	-	-	1	19/083	-	✓ 202	-	V.C.	Lead Sheathed
" " No. 3	1	10	1	19/052	91	✓ 110	78	V.C.	Lead Sheathed
" " Equalr. (No. 3)	-	-	1	19/052	-	✓ 110	-	V.C.	Lead Sheathed
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR									
" " GENERATOR									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

DESCRIPTION.	No. of	Kw.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
Supply to Auto Steam Boiler	1		7/052	N.F.L. 25 ✓ 60	84	V.C.	Lead Sheathed
Supply to Electric Cooker (Galley)	1		7/064	67.2 ✓ 80	90	V.C.	Lead Sheathed

DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.).

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
'P1' Eng. Rm. Auxiliaries	1	7/044	17.1	✓ 45	120	V.C.	Lead Sheathed
"H1" Electric Cabin Heating	1	19/052	88.4	✓ 120	60	V.C.	Lead Sheathed
'I1' Engine Rm. & Aft lgt.	1	7/044	26.5	✓ 31	60	V.R.I.	Lead Sheathed
'I2' Accomodation lgt.	1	7/036	19.8	✓ 24	84	V.R.I.	Lead Sheathed
Navigation & Instrument lgt.	1	7/036	8.8	✓ 24	204	V.R.I.	Lead Sheathed
'P2' H.W. Calorifier	1	7/044	36.4	✓ 45	90	V.C.	Lead Sheathed

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
Steering Gear Motor	1	4.0	7/044	35 ✓ 45	57	V.C.	Lead Sheathed
Capstan	1	12.0	19/052	95.5 ✓ 110	72	V.C.	Lead Sheathed
Windlass	1	11.0	19/064	87.5 ✓ 143	300	V.C.	Lead Sheathed
Bilge Pump	1	2.5	7/036	22.4 ✓ 24	93	V.R.I.	Lead Sheathed
Eng. Rm. Vent. Fan	1	1.15	7/029	11.4 ✓ 15	30	V.R.I.	Lead Sheathed
Feed Water Transfer Pump	1	0.5	3/036	5.7 ✓ 10	60	V.R.I.	Lead Sheathed
F.W. Pump (Pressure Set)	1	0.25	3/036	3.2 ✓ 10	90	V.R.I.	Lead Sheathed

G.P.P.  
8.11.61

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.

*Kenneth C. Bell*

Electrical Contractors.

Date 20. 10. 61

COMPASSES.

Have the compasses been adjusted under working conditions. Yes

*Kenneth C. Bell*

Builder's Signature.

Date 26. 10. 61

Have the foregoing descriptions and schedules been verified and found correct. Yes

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

Plans. Are approved plans forwarded herewith. Yes If not, state date of approval -

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith. Yes

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.)

This installation has been efficiently fitted on board in accordance with the Rules and approved plans. The materials and workmanship are good.

On completion the installation was found satisfactory under full working conditions.

Total Capacity of Generators 80 Kilowatts.

The amount of Fee	£ 54	:	-	:	When applied for,
Leith A/C.	£ 27	:	-	:	23/10/1961
Glas. A/C.	£ 27	:	-	:	
					When received,
Travelling Expenses (if any)	£ -	:	15	:	19

*Thomas Denacovich*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

SEE ACCY

\* BMS  
7.11.61

500,650 - Transfer. (MADE AND PRINTED IN ENGLAND)  
(The Surveyors are requested not to write on or below the space for Committee Minute.)



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