

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 22 NOV 1956

Date of writing Report 24<sup>th</sup> Oct. 1956 When handed in at Local Office 31. Oct. 1956 Port of Liverpool

No. in Survey held at Belfast Reg. Book. Date, First Survey 4-7-1956 Last Survey 24 Oct 1956 (No. of Visits 18)

90331 on the m.v. "Onda" Tons { Gross 5485 Net 2780

Built at Belfast By whom built Harland & Wolff, Ltd Yard No. 554 When built 1956

Owners Elder Dempster Lines, Ltd. Port belonging to Liverpool

Installation fitted by Harland & Wolff, Ltd. When fitted 1956

Is vessel equipped for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. No Radar Yes

Plans, have they been submitted and approved Yes System of Distribution Two Wire Voltage of Lighting 220

Heating 220 Power 220 D.C. or A.C., Lighting D.C. Power D.C. 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 Yes Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule - Position of Generators In Engine Room

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 Near Generators

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 Sindanyo, 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 Triple Pole Circuit Breaker with Overload and Reverse Current Trips.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Double Pole Circuit Breaker or Double Pole Switch and Fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 33

ammeters 2 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 Lamps

Preference Tripping, state if provided Yes, and tested Yes

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes

make of fuses Artic, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 50% Overload, and at what current do the reverse current protective devices operate 10% Full Load.

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 7 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 Yes, if so, are they adequately protected Yes State type of cables (if in conduit this should also be stated) in machinery spaces H.R., galleys H.R., and laundries H.R.

State how the cables are supported or protected Clipped to Steelwork Woodwork or Cable Tray Protected by Sheet Steel Where Necessary

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 Yes

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

Are the motors accessible for maintenance at all times Yes



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule... Yes Emergency Supply, state position

Batteries Main Switch Board Platform

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... state battery capacity in ampere hours... Where required to do so does it comply with 1948 International Convention...

Lighting, is fluorescent lighting fitted... No If so, state nominal lamp voltage... and compartments where lamps are fitted...

Fittings, are all fittings on weather decks, in stokeholds 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... 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... Yes Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing...

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... Yes

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... Relatin Hughes location of transmitter and receiver... FR 105-106

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				TYPE.	PRIME MOVER.
			Kw. per Generator.	Volts.	Amps.	Revs. per Min.		
MAIN	4	W. H. Allen	125	225	555	500	IC	W. H. Allen
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	4	125	2	61/103	555	✓ 664	336	VIR	HR
" " EQUALISER			1	91/103	-	✓ 461	87	VIR	HR
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR									

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

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.	
Winch Control Panel (Fore)	1		91/103	497 ✓ 461	585	VIR	HR
" " (Aft)	1		91/103	✓ 461	585	VIR	HR
Winch Control Panel (Aft)	1		61/103	370 ✓ 332	540	"	"
" " (Ventilation)	1		61/103	✓ 332	540	"	"
Midship Master Board (Stg.)	1		37/093	158 ✓ 214	204	"	"
" " (Ventilation)	1		37/072	117 ✓ 152	162	"	"
Wireless Subd to C.C.B.	1		19/072	12 ✓ 97	324	"	"
" C.C.B. to Radio Rm.	1		"	12 ✓ 97	105	VIR	LCB
Radar	1		7/064	9 ✓ 46	498	"	HR & LCB
Cargo Stg. No 13	1		19/052	27 ✓ 64	570	"	HR
" " No 21	1		19/052	29 ✓ 64	540	"	"
No 7 Boxes Nos. 14 & 15	1		19/052	45 ✓ 64	288	"	"
Midship Masterboard (Galley & Pantry)	1		91/103	362 ✓ 461	586	"	"
Refrig. May Panel	1		61/103	276 ✓ 332	150	"	"

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

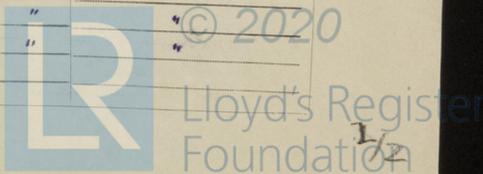
DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
S&F Box No 18 (Eng. Rm. Motors)	1	37/072	105	✓ 152	162	VIR	HR
S&F Box No 17	1	19/083	67	✓ 118	114	"	"
S&F Box No 19	1	19/083	65	✓ 118	210	"	"
S&F Box No 16A (E.R. Vent Fans)	1	19/064	63	✓ 83	114	"	"
Hot Press 3KW	1	7/036	13.5	✓ 24	180	"	"
Hot Press 1.5KW	1	7/029	6.75	✓ 15	75	"	"
Motor 2 KW	1	7/029	9	✓ 15	180	"	"
S&F Box No 1 (Floodlighting)	1	19/052	33	✓ 64	510	"	HR & LCB
S&F Box No 16 (Workshop Motors)	1	19/052	25	✓ 64	315	"	HR
S&F Box No 1 (Navigation)	1	7/064	24	✓ 46	510	"	HR & LCB
Dist Box Nos 2 & 3	1	7/064	24	✓ 46	300	"	HR
" " No 7 & 11	1	7/064	30	✓ 46	525	"	"
" " No 8	1	7/064	15	✓ 46	660	"	"
Native Galley Equipment	1	19/052	57.6	✓ 64	654	"	"
Cooking Range	1	19/052	58	✓ 64	90	"	"
" " "	1	19/052	58	✓ 64	90	"	"
Steaming Oven	1	7/052	27	✓ 37	60	"	"
Dist Box No 9	1	7/052	30	✓ 37	180	"	"
Dist Box No 10	1	7/044	23	✓ 31	48	"	"
Dist Box No 5 (Drying Rm. Heaters)	1	7/036	13.5	✓ 24	195	"	"
Dist Box No 4	1	7/036	19	✓ 24	216	"	"
Dist Box No 12	1	7/029	10	✓ 15	480	"	"
S&F Box No 20	1	7/029	10	✓ 15	48	"	"
Bakers Oven	1	7/052	29.25	✓ 37	135	"	"
Griddle Plate	1	7/029	11.25	✓ 15	180	"	"
Bread Prover	1	7/029	9	✓ 15	150	"	"

ALL IMPORTANT MOTORS TO BE ENUMERATED.

MOTOR CABLES.

DESCRIPTION.	No.	B.H.P.	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.			
Sub Oil Pump	2	66	1	61/093	250	✓ 288	225	VIR	HR
Windlass	1	56	1	37/103	213	✓ 283	450	"	"
Compressor	2	47	1	37/093	177	✓ 214	258	"	"
Warping Winch	1	42	1	37/083	166	✓ 204	276	"	"
Winches	14	42	1	37/072	166	✓ 191	153	"	"
Steering Gear	1	35	1	37/072	136	✓ 152	489	"	"
Refrig. Compressors	2	30	1	37/072	118	✓ 152	75	"	"
Ballast Pump	1	26	1	19/083	101	✓ 118	120	"	"
SW Circ.	1	18	1	19/064	70	✓ 83	102	"	"
Fire Bilge	1	18	1	19/064	70	✓ 83	300	"	"
Sanitary	1	18	1	19/064	70	✓ 83	102	"	"
D.F. Transfer	1	17	1	19/064	67	✓ 83	267	"	"
FW Circ.	2	12	1	19/052	48	✓ 64	75	"	"
TG Motor	1	12	1	19/052	48	✓ 64	210	"	"
Purifier	2	7.5	1	7/064	30	✓ 46	105	"	"
Clarifier	1	7.5	1	7/064	30	✓ 46	90	"	"
Auxy SW Circ.	1	5	1	7/036	20	✓ 24	90	"	"
D.F. Transfer	1	5	1	7/036	21	✓ 24	270	"	"
Exhaust Fan No 1	1	5	1	7/044	20	✓ 31	285	"	"
Pleno Unit P2	1	5	1	7/044	20	✓ 31	294	"	"
Vap. Ext. Fan	1	5	1	7/044	20	✓ 31	240	"	"
Dom. FW	2	4.5	1	7/036	19.3	✓ 24	195	"	"
Supply Fan No 1	1	4.4	1	7/044	18.0	✓ 31	306	"	"
Pleno Unit P1	1	4.25	1	7/044	17.0	✓ 31	324	"	"
Diase Oil Purifier	1	4	1	7/036	16.0	✓ 24	110	"	"
E.R. Vent Fan	2	3.5	1	7/036	15.0	✓ 24	354	"	"
E.R. Crane	1	3	1	7/029	13.0	✓ 15	40	"	"
Pleno Unit P3	1	2.8	1	7/036	12.0	✓ 24	480	"	"
Brine Pump	3	2.5	1	7/029	11.3	✓ 15	60	"	"
Refrig. SW	1	2.5	1	7/029	11.3	✓ 15	75	"	"
Sub Oil Purifier	1	2.5	1	7/029	11.3	✓ 15	80	"	"
Fans	2	2.25	1	7/029	11	✓ 15	282	"	"
FO Service	2	1.75	1	3/036	8	✓ 10	54	"	"
Fuel Valve Cooling	2	1.5	1	3/036	7.8	✓ 10	90	"	"

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.



004300-004307-0162

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.

HARLAND & WOLFF  
LIMITED  
25 OCT 1956  
Electrical Engineers  
BELFAST

Electrical Contractors. Date Oct 25th 1956

COMPASSES.

Have the compasses been adjusted under working conditions.

HARLAND & WOLFF  
LIMITED  
25 OCT 1956  
Electrical Engineers  
BELFAST

Builder's Signature. Date

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

Is this installation a duplicate of a previous case Yes If so, state name of vessel MV. "Oti"

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.) The electrical equipment of this vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. Materials and workmanship are good.

Total Capacity of Generators 500 Kilowatts.

The amount of Fee ... £ 117 : - :  
When applied for, 19-11-1956,  
BELFAST, £93.12.0.  
LONDON, £23.8.0.  
When received,  
Travelling Expenses (if any) £ - : - : 19

R. I. Hurchison  
Surveyor to Lloyd's Register of Shipping.

FRIDAY 28 DEC 1956

Committee's Minute

Assigned See Rpt. 1.

3m.1251.—Transfer. (MADE AND PRINTED IN ENGLAND.)  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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