

1 JUL 1960

Rpt. 13.

No. 15215

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 20th June 1960 When handed in at Local Office 19 Port of TRIESTE

No. in Survey held at Monfalcone Date, First Survey 19 Last Survey 19  
Reg. Book. (No. of Visits 1)

on the "ESSO DUBLIN" Tons }  
Gross  
Net

Built at Monfalcone By whom built C.R.D. Adriatico Yard No. 1849 When built 1960

Owners Esso Petroleum Co., London Port belonging to London

Installation fitted by C.R.D. Adriatico When fitted 1960

Is vessel equipped for carrying Petroleum in bulk yes Is vessel equipped with D.F. yes E.S.D. yes Gy.C. yes Sub.Sig. yes Radar yes

Plans, have they been submitted and approved yes System of Distribution 3 wire insulated Voltage of Lighting 115 V.

Heating Thermo vent Power 440 D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency 60

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 yes 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 yes Position of Generators abreast starbd. side of engine room manoeuvring platform

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 starbd. side forward of 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 dead front type, 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 - 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 three pole linked circuit breakers with overcurrent and short circuit protection, reverse power relays and low voltage protection set to operate at 100 volts

and the switch and fuse gear (or circuit breakers) for each outgoing circuit two or three pole circuit breakers with overcurrent and short circuit protection on each pole.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 9 ammeters 7 voltmeters 1 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 yes earth lamps Preference Tripping, state if provided no, and tested -

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 12% overload, and at what power do the reverse power protective devices operate 40 KW - 6 secs. 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 2 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 Insulated cable, lead covered steel braided and armoured, run in conduit where required

Rules. Steel braided or armoured run in conduit or fabricated steel channels as and where required. State how the cables are supported or protected cables supported and protected as per Rules.

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 effectually bushed yes Refrigerated chambers, are the cables and fittings as per Rule Domestic. yes

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

Are the motors accessible for maintenance at all times -



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes Emergency Supply, state position emergency generator (upper deckhouse aft)

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 40 Amps/hr. Where required to do so does it comply with 1948 International Convention yes

Lighting, is fluorescent lighting fitted yes If so, state nominal lamp voltage 115 V. and compartments where lamps are fitted engine room, boiler room and accommodation spaces

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 1, whether fixed or portable fixed, are they of the carbon arc or of the filament type filament

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 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 yes

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 yes, are all fuses of an Approved Cartridge Type yes, make of fuse Artic London Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships yes Are all cables lead covered as per Rule yes

E.S.D., if fitted state maker Marconi location of transmitter and receiver frames 113/114 S.S

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.	KV <sub>A</sub> per Generator.	RATED AT			PRIME MOVER.	
				Volts.	Amps.	Revs. per Min.	TYPE.	MAKER.
MAIN	2	C.R.D.A.-Monfalcone	938	450	1220	1200	Steam	TOSI Westinghouse
Exciter	2	do	KW 18	110	164	1200	turbine	
EMERGENCY	1	do	187.5	450	241	1200	Diesel	Sudddeutsche Bremen A.G.
EMERGENCY TRANSFORMER Exciter	1	do	KW 7	45	61	1200		M.W.M.

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH IN METERS.	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 GENERATORS	2	750	8	3 x 160	1220	1704	12	V.I.R.	Lead covered steel braided
EQUALISER	2	18	1	2 x 1 x 63	164	226		do	do
EMERGENCY GENERATOR	1	150	2	3 x 100	241	310	10	do	do
EMERGENCY TRANSFORMER Exciter	1	7	1	2 x 1 x 20	61	110		do	do

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

DESCRIPTION.	No. of	Kw.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH IN METERS.	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.	
E.S. Emergency switchboard conn.	2		2	3 X 100	241	310	55 V.I.R. Lead covered & steel braided or armoured
MDP Midship distribution panel	1		1	3 X 100	112	155	130 do do
S.C. Shore connection	2		2	3 X 160	400	426	75 do do
BPI Boiler room power panel	1		1	3 X 80	96	137	40 do do
BP2 Boiler room power panel	1		1	3 X 100	124	155	35 do do
BP1 Boiler room emergency panel	1		1	1 X 3 X 16	22.6	49	50 do do
BRL1 Boiler room lighting	1		1	3 X 6.3	9.7	30	40 do do
BRL2 Boiler room lighting	1		1	3 X 6.3	8.3	30	30 do do
BF Boiler room fans	1		1	3 X 63	106.5	113	25 do do
EP1 Engine room power panel	1		1	3 X 100	44.5	155	30 do do
EP2 Engine room power panel	1		1	3 X 63	53.2	113	40 do do
ERL1 Engine room lighting	1		1	3 X 16	12.1	49	25 do do
ERL2 Engine room lighting	1		1	3 X 16	12.6	49	15 do do
E.F. Engine room fans	1		1	3 X 40	75.7	85	10 do do
EML2 Emergency lighting	1		1	1 X 3 X 10	16.5	38	70 do do
EL2 Exterior lighting	1		1	3 X 10	20	38	20 do do
EL1 Exterior lighting	1		1	3 X 10	26.8	38	30 do do

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 IN METERS.	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
DL1 Deck lighting	1	3 X 10	6.3	38	75	V.I.R.	Lead covered & steel braided or armoured
DL2 do	1	3 X 10	16.8	38	60	do	do
DL3 do	1	3 X 6.3	13.5	30	50	do	do
DL4 do	1	3 X 10	16.6	38	50	do	do
DL5 do	1	3 X 10	14.6	38	20	do	do
DL6 do	1	3 X 6.3	10	30	50	do	do
DL7 do	1	3 X 10	15.9	38	20	do	do
DL8 do	1	3 X 10	17.7	38	30	do	do
AV1 Accommodation ventilation	1	3 X 32	48.2	73	190	do	do
AV2 do	1	3 X 32	48.2	73	190	do	do
MP3 Misc. deck power panel	1	3 X 32	65	73	35	do	do
MP4 do	1	3 X 32	60	73	60	do	do
MP1 do	1	3 X 25	45	63	20	do	do
MP2 do	1	3 X 25	50	63	20	do	do
CP Conditioning plant panel	1	3 X 80	112	137	50	do	do
IC Eng. & Blr. room signal panel	1	1 X 3 X 6.3	15	30	50	do	do
RP Refrig. plant panel	1	3 X 16	30	49	70	do	do
WS Workshop power panel	1	3 X 10	21	38	50	do	do
GP Galley power	1	3 X 160	196	212	60	do	do
BW1 Boat winch panel	1	3 X 10	22.4	38	40	do	do
BW2 do	1	3 X 10	22.4	38	40	do	do
T/1 Transformers 440/115 V.	1	3 X 63	104	113	20	do	do
T/2 do 440/220 V.	1	3 X 63	104	113	40	do	do
T/3 do 440/115 V.	1	1 X 3 X 16	43	49	40	do	do

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH IN METERS.	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.	
FDF1/2/3 Force draught fans	3	110/30	1	3 X 125	134/415	180	48 V.I.R. Lead covered & steel braided or armoured
MC Main circ. pump	1	145/70	1	3 X 160	177	213	35 do do
AC Aux. circ. pump	1	46	1	3 X 32	62	65	35 do do
MME 1/2 Main condensate	2	38	1	3 X 20	48.5	56	27 do do
ACC Aux. condenser	1	27	1	3 X 16	37	49	20 do do
FO1/2 Fuel oil pump	2	14/7	1	3 X 6.3	18.7/11	30	25 do do
LO1/2 Lub. oil circ.	2	32	1	3 X 16	42.3	49	42 do do
SG1/2 Steering gear	2	80	1	3 X 80	135	109	70 do do
F.P. Fire pump	1	50	1	1 X 3 X 32	63	73	55 do do
B.P. Bilge pump	1	8	1	3 X 6.3	11.5	30	30 do do
Sanitary /fire pump	1	40	1	3 X 20	52	56	30 do do
ER & B.R. fans	8	13/2	1	3 X 6.3	17.5	30	30 do do
Combustion control	3	15	1	3 X 20	21	48.5	40 do do

NOTE.—Use Rpt. 43 Continuation Sheet if the above space is insufficient.

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

CANTIERI RIUNITI DELL'ADRIATICO  
CANTIERE NAVALE MONFALCONE

Electrical Contractors.

Date

23 GIU. 1960

COMPASSES.

Have the compasses been adjusted under working conditions

CANTIERI RIUNITI DELL'ADRIATICO  
CANTIERE NAVALE MONFALCONE

Builder's Signature.

Date

23 GIU. 1960

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

Is this installation a duplicate of a previous case yes If so, state name of vessel "ESSO LIVERPOOL" Yard N°. 1841

Plans. Are approved plans forwarded herewith Yes/As built copies If not, state date of approval July, 1957

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 installation has been constructed and installed under special survey in accordance with the Secretary's letters, approved plans and Rule requirements.

The materials and workmanship are good.

On completion the installation was tested under full load and normal working conditions to Rule requirements and found satisfactory.

The insulation resistance and voltage drop was found to comply with the Rules.

The electrical equipment and installation in my opinion is suitable for a classed vessel having the

Notation: "Carrying Petroleum in Bulk."

ob	ob	25	25	2.84	05 X 2	1	86	S
ob	ob	30	30	3.10	05 X 2	1	87	S
ob	ob	35	35	3.36	05 X 2	1	88	S
ob	ob	40	40	3.62	05 X 2	1	89	S
ob	ob	45	45	3.88	05 X 2	1	90	S
ob	ob	50	50	4.14	05 X 2	1	91	S
ob	ob	55	55	4.40	05 X 2	1	92	S
ob	ob	60	60	4.66	05 X 2	1	93	S
ob	ob	65	65	4.92	05 X 2	1	94	S
ob	ob	70	70	5.18	05 X 2	1	95	S
ob	ob	75	75	5.44	05 X 2	1	96	S
ob	ob	80	80	5.70	05 X 2	1	97	S
ob	ob	85	85	5.96	05 X 2	1	98	S
ob	ob	90	90	6.22	05 X 2	1	99	S
ob	ob	95	95	6.48	05 X 2	1	100	S

Total Capacity of Generators 1650 Kilowatts.

The amount of Fee (15%) £ 268.17.0 When applied for, 19

Travelling Expenses (if any) £ See Rpt. 1. When received, 19

Acc. 23 JUL 1960  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIDAY 26 AUG 1960

Assigned See Rpt. 1.

5m. 6.56 - Transfer. (MADE AND PRINTED IN ENGLAND)  
(The Surveyors are requested not to write on or below the space for Committee Minutes.)

12.7.60