

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 4-4-1961 When handed in at Local Office 19 APR. 1961 19 1961 Port of SUNDERLANDNo. in Survey held at SUNDERLAND Date, First Survey 21st OCTOBER 1960 Last Survey 21st MARCH 1961
Reg. Book (No. of Visits 12)92212 on the M.V. "MONTROSE" Tons Gross 4993
Net 2646Built at SUNDERLAND By whom built BARTRAM & SONS LTD Yard No. 386 When built 1961Owners MONTSHIP LINES LTD. Port belonging to LONDONInstallation fitted by BARTRAM & SONS LTD AND THE SUNDERLAND FORGE & ENG. CO. LTD When fitted 1961Is 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 YESPlans, have they been submitted and approved Yes System of Distribution Two wire Voltage of Lighting 220Heating 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 YesAre the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole negativeHave 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 Starboard side of Engine Room, floor level.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 Off end of Engine Room on special platform.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 Insulation, 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 breakers with overload, reverse current and pressure tripsand the switch and fuse gear (or circuit breakers) for each outgoing circuit Double pole circuit breakers 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 — ammeters — 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 —Carroll Lamps. Preference Tripping, state if provided Yes, and tested YesSwitches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yesmake of fuses Antis, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 25% overload with time lag. and at what current do the reverse current protective devices operate 150 amps Cables, are they insulated and protected as per Rule Yesif 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 less than 6% volts. Are all ~~paper insulated and~~ varnished cambric insulated cables sealed at the ends YesAre 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 V.C.L.B. or Biphillets P.C.P. & Galleys. Self Rubber P.C.P.B.and laundries — State how the cables are supported or protected main cable run in cargo spaces supported on steel plates & protected by sheet steel covers. All other cables supported on steel plates, ways, wood grounds or secured direct to structure. All cables are adequately protected.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 YesHave refrigeration fan motors been constructed under survey No - was list certificate accepted and test certificates supplied YesAre 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

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 60 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 Wing 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 -

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 Submarine Signal Co. Location of transmitter and receiver Deck Bottom Port side A. 135/137

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	3	Thomas B. Thwing	275	220	1250	600	Oil Engine	Blackstone Co. Ltd.
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	3	275	4	37/093	1250	1452	42/114/26	V.C.	L.C.B.
" " EQUALISER	2			37/093		726	2/51/63		
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	
Forward Watch Panel	1		37/103	230	326	660	Bulfil Rubber P.C.P.-B.
Watch Stand Panel	1		37/103	235	326	480	"
Left Watch Panel	1		37/072	155	204	390	"
Cargo Refrig Panel	2		37/072	247	408	240	"
Watch Stand Fans Section Board H	1		19/052	47.7	88	60	"
" " Dist. Bd H1	1		7/052	15.9	48	390	"
" " " " H2	1		19/052	31.8	88	480	"
Accommodation Vent Fans " V.	1		19/064	45.5	115	210	"
Radars	1		7/044	6	31	270	V.I.R.
Gyro Compass Dist. Bd G	1		7/036	5	24	270	"
Wireless	1		19/044	15	72	270	Bulfil Rubber
Lighting Section Board A	1		19/083	103	161	180	"
" " " " B	1		19/044	45	72	270	"
" " " " C	1		19/064	51	115	480	"
Lighting Dist. Board. New = Bridge Dist. Bd A1	1		7/044	18	31	60	V.I.R.

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			
Lighting Dist. Board. Boat Deck A2	1	7/044	14	31	30	V.I.R.	P.C.P.-B.
Bridge Deck Post A3	1	7/044	19	31	60	"	"
Bridge Deck Stais A4	1	7/044	18	31	60	"	"
Upper Deck Post B1	1	7/044	14	31	160	"	"
Upper Deck Stais B2	1	7/044	20	31	50	"	"
Secare Deck Post B3	1	7/036	4	24	200	"	"
Secare Deck Stais B4	1	7/036	7	24	70	"	"
Cargo Lighting Post C1	1	7/064	27	61	270	Bulfil Rubber	"
Cargo Lighting Mast C2	1	7/064	24	61	10	"	"
Cargo Lighting Off C3	1	7/064	25	61	390	"	"
Engine Room Post E1	1	7/064	20	61	120	"	"
Engine Room Stais E2	1	7/064	20	61	120	"	"
Domestic Refrig Section Board R	1	7/052	25	48	240	"	"
Head Water Pumps Dist. Board F	1	7/036	13.2	24	180	V.I.R.	"
Galley - Pastry Accessories Section Board P	1	19/083	122	161	120	Bulfil Rubber	"
" " " " Dist. Board P1	1	7/036	7.5	24	10	V.I.R.	"
Pastry Accessories " " P2	1	7/052	25.8	48	180	Bulfil Rubber	"
Saloon Pastry " " P3	1	7/064	50.8	61	170	"	"
Navigation Aids " " N	1	7/044	20	31	270	V.I.R.	"
Navigation Indicator " " I	1	3/036	1	10	10	"	"
Hydraulic Hatch Pump Section Bd K	1	37/072	140	204	480	Bulfil Rubber	"
Slow Combustion Box " " L	1	37/103	26	326	270	"	"
Suez Canal Propeller (only) " " M	1	19/044	34	46	180	V.I.R.	L.C.B.
Engine Room Ventilation Section Board N	1	19/044	78	92	170	V.C.	"
Washing Machine Section Board O	1	19/044	45.2	92	170	V.C.	"
Oil Burning Plant Section Board P	1	7/064	38.4	46	130	V.C.	"
Head Water Generator Plant Dist. Bd Q	1	7/064	20.5	46	150	"	"
Fuel Valve Cooling Pumps " " R	1	7/036	6.4	24	80	"	"
Engine Light & Alarm " " S	1	7/036	15	24	130	"	"
Engine Room Miscellaneous Pumps " " T	1	7/044	26	31	200	"	"

MOTOR CABLES

ALL IMPORTANT MOTORS TO BE ENUMERATED	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			
Air Compressor	2	63	1	37/072	226	260	110	V.C.	L.C.B.
Water Cooling Pump	2	50	1	19/083	185	202	110	"	"
S.W. Circulating Pump	1	32	1	19/064	122	143	160	"	"
Ballast Pump	1	32	1	19/064	122	143	140	"	"
F.W. Circulating Pump	2	27	1	19/064	102	143	170	"	"
General Service - Fire Pump	1	20	1	19/044	78	92	110	"	"
Bilge - Fire Pump	1	20	1	19/044	78	92	110	"	"
H.O. Transfer Pump	1	12.5	1	19/044	47	92	160	"	"
Deer Oil Transfer Pump	1	12.5	1	19/044	47	92	160	"	"
Tearing Gear	1	12	1	19/044	48	92	90	"	"
Purifiers	5	3.5	1	7/036	14.3	24	100	V.I.R.	"
Purifier Sludge Pump	1	1.0	1	3/036	4.3	10	90	"	"
Engine Room Vent Fan	2	4	1	7/036	15	24	120	"	"
Purifier Space Vent Fan	1	0.36	1	3/036	1.6	10	180	"	"
Oil Burning Plant Vent Fan	2	2	1	7/036	9	24	70	"	"
" " Blower Motor	1	2	1	7/044	10	31	80	"	"
H.O. Supply Pump	1	2	1	7/036	10	24	170	"	"
Deer Generator F.W. Pump	1	4	1	7/036	16	24	20	"	"
Fuel Valve Cooling Pump	2	0.75	1	3/036	3.2	10	70	"	"
F.W. Generator Vacuum Pump	1	1.5	1	3/036	6.8	10	50	"	"
" " Blower Pump	1	1.5	1	3/036	6.8	10	80	"	"
" " Condensate Pump	1	1.5	1	3/036	6.8	10	40	"	"
Wireless	1	58	1	37/093	215	287	220	Bulfil Rubber	P.C.P.-B. or similar
Cargo Winches	10	25	1	19/083	97	161	60/280	"	"
Washing Winch	4	42	1	37/072	160	204	60	"	"
Slowing Gear	1	25	1	19/083	97	161	80	"	"
Refrig Compressor	2	12	1	19/044	45	72	390	"	"
" S.W. Pumps	3	17.5	1	19/064	67	115	45	"	"
" Fans	2	3	1	7/036	12	24	120	V.I.R.	"
" Fans	4	0.88	1	7/036	4.5	24	90/150	"	"
Watch Stand Fans	9	1.4	1	7/036	5.3	24	100/300	"	"
Accommodation Vent Fans	2	5.5	1	7/044	22	31	20	"	"
" " " " " "	1	0.25	1	3/036	1.4	10	120	"	"
Tallow Pump	1	15	1	19/083	58	161	60	Bulfil Rubber	"
Hydraulic Hatch Pumps	2	18	1	19/052	70	88	20	"	"

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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD.

BY AND ON BEHALF OF
 BARTRAM and SONS LTD.

R. M. O'Clare

G. Bartram Electrical Contractors.
 DIRECTOR

Date *14-4-61*

COMPASSES

Have the compasses been adjusted under working conditions... *Yes*

BARTRAM and SONS LTD.

G. Bartram

Builder's Signature.

Date *17-4-61*

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 electrical equipment has been installed under special survey in accordance with the approved plans & the Society's Rules for Electrical Equipment. The installation has been tested under working conditions and found satisfactory. The materials and workmanship are good. In my opinion this electrical equipment is eligible to be accepted for classification.*

Total Capacity of Generators... *825* Kilowatts.

The amount of Fee ... £ *143: 5* : When applied for, 27 APR 1961 19

Travelling Expenses (if any) £ : : When received, 19

A. Haffner
 Surveyor to Lloyd's Register of Shipping

Committee's Minute

FRIDAY 23 JUN 1961

Assigned

3m.5.60—Transfer. (MADE AND PRINTED IN ENGLAND) (The Surveyors are requested not to write on or below the space for Committee Minute.)

**: RMS
 8.5.61.*



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