

Rpt. 13.

No. 19748.

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

22 OCT 1952

Date of writing Report

When handed in at Local Office 20th Oct 1952. Port of Middlesbrough.

No. in Survey held at Southbank-on-Tus. Date, First Survey 19.3.52 Last Survey 10.9.1952.

Reg. Book. (No. of Visits) 15.

67721 on the M.Y. "LUCERNA"

Built at Southbank-on-Tus. By whom built Smiths Dock Co. Ltd. Yard No. 1215 When built 1952.

Owners 16. E. Moss & Co. Tankers (Holdings) Ltd. Port belonging to Liverpool.

Installation fitted by Campbell & Sherwood.

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. - Radar: Yes.

Plans, have they been submitted and approved Yes. System of Distribution Two wire insulated. Tons Gross Net.

Heating 110 Power 110 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 - Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule Yes.

Position of Generators Port and Starboard on generator flat above Engine Room starting platform forward.

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 on generator flat, midships, athwartships and facing aft.

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 Simonds

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 Air Break Circuit Breaker with Overloads and time delays on two poles, Runn current trip, and third pole coupled to equaliser connection.

Double Pole Double Throw Knife Switch and Double Pole Air Break Circuit Breaker with Overloads on both poles.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Double Pole Double Throw Quick Break

Knife Switch and Double Pole Fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes. Instruments on main switchboard 3

ammeters 3 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 Earth lamps

coupled to E' this switch and fuses. 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 Simons 'Z' are all fuses labelled Yes. If circuit breakers are provided for the generators, at what

overload do they operate 10% and at what current do the reverse current protective

devices operate 15% Cables, are they insulated and protected as per Rule 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 < 6.6 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 Pyrotinax & L.O. & B. galleys L.O. & B.

and laundries L.O. & B. State how the cables are supported or protected Forward mains, Pyrotinax

clipped to solid steel plate along fore and aft gangway. Engine and Bath Rooms Pyrotinax and

L.O. & B. paths chafed to pyrotinax steel plate. L.O. & B. cables in accommodation chafed

to wood ground.

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

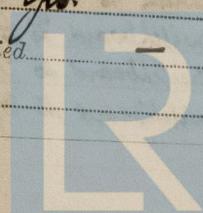
effectively bushed Yes. Refrigerated chambers, are the cables and fittings as per Rule Yes.

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

Are the motors accessible for maintenance at all times.

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Lloyd's Register
Foundation

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. —, state battery capacity in ampere hours. — 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 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. — 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. Yes. —, are all fuses of an Approved Cartridge Type. Yes. —, make of fuse. Siemens 'Z'. 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. Haughey. M.S. 21. location of transmitter and receiver. Frame. 45/44 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.	Volt. Ampères. Revs. per Min.	Type. MAKER.
MAIN ...	2	Scandinav. Eng. Co. Nos. 41572 & 3.	50	110 454 500	Siem. Pelz Brotherhood. No. 11780 E+F.
EMERGENCY ROTARY TRANSFORMER	1	Scandinav. Eng. Co.	15	110 136.5 1000	Diesel Ruston Hornsby.

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead pins return feet).	INSULAT. RUL.	PROTECTIVE COVERING.
MAIN GENERATOR ...	1	50	2 34/042	454, 520	50	V.I.R. 1.6. + B.	
" EQUALISER ...	1	50	2 34/042	224, 260	25	V.I.R. 1.6. + B.	
" "	1	50	2 34/042	454, 520	50	V.I.R. 1.6. + B.	
" "	1	15	1 34/042	224, 260	25	V.I.R. 1.6. + B.	
" "	1	15	1 19/064	136.5, 143	80	V.I.R. 1.6. + B.	
EMERGENCY GENERATOR ...							
ROTARY TRANSFORMER: MOTOR ...							
" " GENERATOR ...							

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

DESCRIPTION.	1	0.15	62	330	500	Pyroline.
Main switchboard to Midships switchboard.	1	0.15	252	330	500	Pyroline.
Midships switchboard to Whithouse S.B. 'A'	1	7/064	30	80	100	V.I.R. 1.6. + B.
S.B. 'A' to Whithouse. D.B. 'A1'	1	7/036	10	24	50	V.I.R. 1.6. + B.
S.B. 'A' to Bridge. D.B. 'A2'	1	7/036	10	24	30	V.I.R. 1.6. + B.
S.B. 'A' to Flying Bridge Lighting. D.B. 'A5'	1	7/036	10	24	30	V.I.R. 1.6. + B.
D.B. 'A1' to Navigation C.O. Switch	1	7/036	2	24	5	V.I.R. 1.6. + B.
Midships switchboard to Navigation C.O. Switch	1	7/036	2	24	150	V.I.R. 1.6. + B.
Navigation C.O. Switch to Navigation Indicator	1	7/036	2	24	5	V.I.R. 1.6. + B.
Midships switchboard to Sung D.P. Switch	1	7/064	40	80	150	V.I.R. 1.6. + B.
Sung D.P. Switch to Sung Canal Projector	1	7/064	40	110	420	Pyroline.
Midships switchboard to Sunbeam	1	0.0225	10	45	150	V.I.R. 1.6. + B.
Midships switchboard to Sunbeam	1	7/064	30	80	120	V.I.R. 1.6. + B.
Midships switchboard to Offshore Accm D.B. 'A4'	1	7/036	21	24	90	V.I.R. 1.6. + B.

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. In. or sq. mm.	In the Circuit. Rule.		
Midships switchboard to Radar.	1	7/064	10	80	V.I.R. 1.6. + B.
Midships switchboard to Engines Acc. P. D/B 'B1'	1	7/036	19	24	V.I.R. 1.6. + B.
Midships switchboard to Engines Acc. S. D.B. 'B2'	1	7/036	19	24	V.I.R. 1.6. + B.
Midships switchboard to Anticathode Projector. D.B. 'B3'	1	7/044	16	81	V.I.R. 1.6. + B.
Midships switchboard to Doncaster Lighting. D.B. 'C'	1	7/044	7	31/70	V.I.R. 1.6. + B.
Midships switchboard to Pantry Pow. S.B. 'F'	1	7/052	57	60	V.I.R. 1.6. + B.
S.B. 'F' to Pantry Stret. Outfit (2)	1	7/036	15	24	V.I.R. 1.6. + B.
S.B. 'F' to Domestic Refrig	1	7/036	5	24	V.I.R. 1.6. + B.
Midships switchboard to Range Board Lights. D.B. 'E'	1	7/036	15	24	V.I.R. 1.6. + B.
Main switchboard to Engine Casing. S.B. 'K'	1	0.01	36	70	Pyroline.
Main switchboard to Engine Room Vent. S.B. 'G'	1	0.01	34	70	Pyroline.
Main switchboard to Port Pass Aft. S.B. 'D'	1	0.0145	52	90	Pyroline.
S.B. 'D' to Port Passage Upper Deck. D.B. 'P1'	1	7/044	15	31	V.I.R. 1.6. + B.
S.B. 'P' to Port Passage Port Deck. D.B. 'P2'	1	7/036	21	24	V.I.R. 1.6. + B.
S.B. 'P' to Port Passage Upper Deck. D.B. 'P3'	1	7/044	16	31	V.I.R. 1.6. + B.
Main switchboard to Stbd Pass Upper Dk. S.B. 'Q'	1	0.01	48	70	Pyroline.
S.B. 'Q' to Stbd Pass. Upper Deck. D.B. 'Q1'	1	7/044	23	31	V.I.R. 1.6. + B.
S.B. 'Q' to Stbd Pass. Upper Dk. Aft. D.B. 'Q2'	1	7/036	15	24	V.I.R. 1.6. + B.
S.B. 'Q' to Steering Gear Compr. D.B. 'Q3'	1	7/036	10	24	V.I.R. 1.6. + B.
Main switchboard to Relying Mech. Space. S.B. 'L'	1	0.0225	35	110	Pyroline.
Main switchboard to Workshop Mech. S.B. 'J'	1	0.0225	78	110	Pyroline.
Main switchboard to Eng. Room + Boilus. S.B. 'N'	1	0.0145	55	90	Pyroline.
Main switchboard to Engine Room. S.B. 'M'	1	0.01	40	70	Pyroline.
Main switchboard to Engine Room. S.B. 'H'	1	0.01	46	70	Pyroline.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	NO. B.H.P.				
Oil Purifiers.	3	7.5	1	0.01	61
Fwd. Water Cooling Pumps.	2	2.5	1	0.007	23
Turning Gear Motor.	1	18	1	0.04	144
Sea Water Pump.	1	1.5	1	0.007	15
Fwd. Water Pump.	1	1.5	1	0.007	15
Refrig. Sea Water Pump.	1	1.0	1	0.0045	10
Cool. Fwd. Pump.	1	1.5	1	0.004	15
Lath.	1	3.0	1	0.007	26
Grinder.	1	3.0	1	0.007	26
Crane.	1	3.0	1	0.007	26
Refrig. Compressor.	1	4.0	1	0.007	26
Gating Blowers.	2	10	1	0.01	35
Gating Fan.	1	1/3	1	7/029	2
Boiler Room Vent Fan.	1	2.0	1	0.007	18
Engine Room Vent Fans.	2	2.0	1	0.007	18
Engine Room Vent Fans.	2	2.0	1	7/036	18
Air Heat Unit.	1	6.85	1	0.0145	58
Air Heat Unit.	1	6.85	1	7/064	56
Panty Fan.	1	1.2	1	7/086	2

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.

CAMPBELL & ISHERWOOD, LTD.

PER

H. Meade

Electrical Contractors.

Date 22-9-52

COMPASSES.

Have the compasses been adjusted under working conditions

YES.

FOR SMITH'S BUCK COMPANY LIMITED

B. E. Hunter.

Builder's Signature.

Date 19-9-52.

Shipyard Manager

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.) The electrical equipment on this vessel has been installed under special survey and the arrangements are in accordance with or equivalent to those shown on the approved plans and the Rules for Electrical Equipment.

The materials used are of good quality and the workmanship is good.

On completion, the equipment was operated under working conditions, the various protection devices were adjusted and operated, and the insulation resistances of all circuits measured and found good.

This installation is in my opinion suitable for a classed vessel intended for the carriage of petroleum in bulk.

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Natal 10/11/11-52

Total Capacity of Generators 115 Kilowatts.

The amount of Fee ... £ 59 : 5 : When applied for,

21.10.52.

When received,

19.

Travelling Expenses (if any) £ : :

Surveyor to Lloyd's Register of Shipping.

P.W. Hills.

Committee's Minute

TUES. 30 DEC 1952

Assigned

Sir F.E. McIvy, M.P.