

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

18 AUG 1950

Date of writing Report 28.7.1950 When handed in at Local Office 3-8-1950 Port of Middlesbrough

No. in Survey held at Southbank-on-Tees Date, First Survey 9.5.50 Last Survey 20.7.1950  
Reg. Book. (No. of Visits 8)

67559 on the M. V. "Lumen." Tons Gross 10146.25 Net 5864.66

Built at Southbank-on-Tees By whom built Smith's Dock Co. Ltd. Yard No. 1197 When built 1950

Owners Lutrous S. S. Co. Ltd. (K. A. Moss &amp; Co.) Port belonging to Liverpool

Installation fitted by Campbell &amp; Sherwood. Co. Ltd. When fitted 1950

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 Voltage of Lighting 110

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

if not compound wound state distance between generators - and from switchboard - Are the generators arranged to run

in parallel Yes, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole

Negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing - Have certificates of

test for machines under 100 kw. been supplied Yes and the results found as per Rule Yes

Position of Generators Inboard &amp; Outboard, Port side forward on raised flat.

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 adjacent to shell,

facing starboard and near generators on generator flat.

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 Ebony finish, 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 Air Break Circuit Breaker with

Overloads and Time delays on two poles, Reverse current trip, and third

pole coupled to equaliser.

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 reversed current

protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided

Earth lamps coupled to Earth through switches and fuses.

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

make of fuses Siemens '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 reversed current protective devices operate 10%

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes

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 &lt; 6.6 v, are the ends of all cables having a sectional

area of 0.01 square inch and above provided with soldering sockets Yes 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 - Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit -

or of the "HR" type - State how the cables are supported or protected clipped to solid steel tray

plate under fore and aft gangway. Generator mains clipped to solid steel plate.

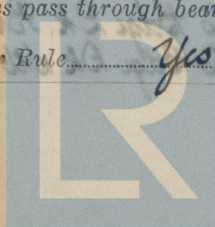
Pyrotinax cables in Engine Room clipped to perforated steel tray plate. Lead

covered cables in accommodation clated to wood grounds.

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





..... 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 and fitted as per Rule....., are they adequately ventilated.....  
state battery capacity in ampère hours.....

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

Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. Yes

if so, how are they protected. "Wigan" Flameproof fittings.

and where are the controlling switches fitted Officers Quarters Midships. Are all fittings suitably ventilated Yes.

Searchlight Lamps, 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.....

Control Gear and Resistances, are they constructed and fitted as per Rule.....Yes..... Lightning Conductors, where required are they fitted as per

Rule..... Ships carrying Oil having a Flash Point 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 the cables lead covered as per Rule Yes.....

E.S.D., if fitted state maker *Marconi* location of transmitter *Ten and E. R.* and receiver *Ten and E. R.*

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.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ... ..	2	Dunduland Forge.	50	110	454	500	Steam	P. Brotherhood Eng Nos. 11780A & B
	1	Dunduland Forge.	15	110	136.5	1000	Diesel	Ruston & Prosser No. 271020
EMERGENCY ...								
ROTARY								
TRANSFORMER								

## GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	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 ... ..	50	2	37/072	454	520	44	Vb.	L.b. & B.
" " EQUALISER ... ..	50	2	37/072	227	260	22	Vb	L.b. & B.
		2	37/072	454	520	48	Vb	L.b. & B.
		1	37/072	227	260	24	Vb.	L.b. & B.
	15	1	0.1	136.5	202.	200	Pyrolinax.	
EMERGENCY GENERATOR ... ..								
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR...								

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

DESCRIPTION.									
Main switchboard to Midships Sub. bd.	2	0.15	✓	150	260	600	Pyrolinax.		
Main switchboard to Eng. Room S.B. "A"	1	0.0145	✓	50	60	20	Pyrolinax		
Main switchboard to Popr. Dk. Port S.B. "D"	1	0.0145	✓	33.5	60	100	Pyrolinax.		
Main switchboard to Upper Dk. Port S.B. "Q"	1	0.0145	✓	38	60	100	Pyrolinax.		
Sub-switchboard to Upper Bridge Dk. Port S.B. "A"	1	✓	064	50	80	70	V.B.	L. 6. v 13.	
Sub-switchboard to Navigation Indicator	1	✓	036	5	24	130	V.I.R.	L. 6. v 13.	
Alternative supply to Navigation from "A1"	1	✓	036	5	24	16	V.I.R.	L. 6. v 13.	
S.B. "A" to Wheelhouse D.B. "A1"	1	✓	036	21	24	130	V.I.R.	L. 6. v 13.	
S.B. "A" to Wheelhouse D.B. "A2"	1	✓	036	10	24	130	V.I.R.	L. 6. v 13.	
S.B. "A" to Upper Bridge Deck D.B. "A3"	1	✓	036	19	24	6	V.I.R.	L. 6. v 13.	
Sub-switchboard to Bridge Dk. Port D.B. "B1"	1	✓	036	23	24	20	V.I.R.	L. 6. v 13.	
Sub-switchboard to Bridge Dk. Starboard D.B. "B2"	1	✓	036	20	24	20	V.I.R.	L. 6. v 13.	

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

[illegible]

## MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
Turning Bar.	1	7.5	1	0.0225	61	80	140	Pyrolinox	
Oil Pumps 1, 2, & 3.	3	2.5	1	0.007	23	30	100	Pyrolinox	
Oil Fuel Pump.	1	1.5	1	0.007	15	30	180	Pyrolinox	
Kipping Motor.	1	4.0	1	0.0145	35	60	260	Pyrolinox	
Salt Water Pump.	2	1.0	1	0.003	10	10	60	Pyrolinox	
Lathe	1	3.0	1	0.007	26	30	20	Pyrolinox	
Grinder	1	3.0	1	0.007	26	30	26	Pyrolinox	
Engine Room Vent Fans.	2	2.0	1	0.007	18	30	220/20	Pyrolinox	
Vent Unit	1	6.85	1	0.0225	58	80	220	Pyrolinox	
Galley Vent Fan.	1	0.5	1	0.002	5	5	100	Pyrolinox	
Grain Motor	1	3.0	1	0.007	26	30	100	Pyrolinox	
Pantry Vent Fan.	1	0.33	1	3/036	4	10	80	VR	L. G. & B.
Vent Unit	1	6.85	1	7/064	58	80	120	VR	L. G. & B.
Fresh Water Pump.	1	1.0	1	7/036	10	24	100	VR	L. G. & B.



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.

Electrical Contractors.

Date 17th Aug 1950

#### COMPASSES.

Have the compasses been adjusted under working conditions.

YES.

For SMITH'S DOCK CO. LTD.

C. E. Curlett

Builder's Signature.

Date 3-8-50.

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, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical equipment of 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 protective devices on the circuit breakers were adjusted and operated, and the insulation resistance 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.

Noted  
P.S. 30-8-50

Special Notation :- E.S.D., D.F., Gyro C., and Radar.

Total Capacity of Generators 115 Kilowatts.

The amount of Fee ... £ 57 : 5 :  
When applied for, 17-8-1950.  
When received, 19.

Travelling Expenses (if any) £ :

Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 1 SEP 1950

Assigned

See F.F. weekly rpt.



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