

Rpt. 13.

No. 32593

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

MAR 13 1939
MAR 13 1939

Date of writing Report. 14 Mar. 1939 When handed in at Local Office. 10 MAR 1939 Port of. Sunderland

No. in Survey held at. Sunderland and Date, First Survey. 13th Dec. 1938 Last Survey. 3rd March, 1939
Reg. Book. Suppl. Newcastle (Number of Visits. 2)90021 on the S.S. "SILVERLAUREL" Tons { Gross. 4,142
Net. 3,817

Built at. Sunderland By whom built. J. Thompson & Co. Ltd. Yard No. 588 When built. 1939

Owners. Silver Line Ltd. Port belonging to. London

Electrical Installation fitted by. The Sunderland Eng. Co. Ltd. Contract No. 588 When fitted. 1939

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

Have plans been submitted and approved. Yes System of Distribution. Double wire Voltage of supply for Lighting. 110

Heating. 110 Power. 220 Direct or Alternating Current, Lighting. Direct Power. Direct If Alternating Current state frequency. Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off. Yes Are turbine emergency governors fitted with a

trip switch as per Rule. Generators, are they compound wound. Yes, are they level compounded under working conditions. Yes

if not compound wound state distance between generators. and from switchboard. Where more than one generator is fitted are they

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

Positive 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 Are the lubricating arrangements and the construction

of the generators as per rule. Yes Position of Generators. Engine room starboard side.

is the ventilation in way of generators satisfactory. Yes are they clear of inflammable material. Yes, if situated

near unprotected combustible material state distance from same horizontally. and vertically. are the generators protected from mechanical

injury and damage from water, steam and oil. Yes are the bedplates and frames earthed. Yes and the prime movers and generators in metallic

contact. Yes Switchboards, where are main switchboards placed. Engine room starboard side on

raised platform over generating sets.

are they in accessible positions, free from inflammable gases and acid fumes. Yes, are they protected from mechanical injury and damage from water, steam

and oil. Yes, if situated near unprotected combustible material state distance from same horizontally. and vertically. what insulation

material is used for the panels. Slate, 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. Yes Is the frame effectually earthed. Yes

Is the construction as per Rule. Yes, including accessibility of parts. Yes, absence of fuses on the back of the board. Yes, individual fuses

to pilot and earth lamps, voltmeters, etc. Yes locking of screws and nuts. Yes, labelling of apparatus and fuses. Yes, fuses on the "dead"

side of switches. Yes Description of Main Switchgear for each generator and arrangement of equaliser switches. 3 pole C.B.'s with off

trips on 2 poles + R/C trip - one pole used for equaliser - fitted on

each generator main including generation of main generator set

and for each outgoing circuit. Double pole knife switches and double pole

carriage fuses.

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

ammeters. Five voltmeters. synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection. Yes Earth Testing, state means provided. E lamps coupled to E through cws. fuses

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an approved type Yes, are all fuses labelled as per Rule Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Yes. Cables, are they insulated and protected as per the appropriate Tables of the Rules 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 5.3 volts are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Yes with insulating compound Yes or waterproof insulating tape 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 cables laid under machines or floorplates Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected L.C. & L.A. B. cables clipped on surface in machinery spaces; V.I.R. cables run in galvanized pipes in 'twendeck space; L.C. cables clipped on wood grounds in accommodation. Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes. Refrigerated chambers, are the cables and fittings as per Rule 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 and with what material Lead and fibre. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Yes and method of control Yes.

Navigation Lamps, are they separately wired Yes controlled by separate single pole switches Yes 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. Secondary Batteries, are they constructed and fitted as per Rule Yes, are they adequately ventilated Yes. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are 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 Yes.

and where are the controlling switches fitted Yes, are all fittings suitably ventilated Yes. are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of Yes, whether fixed or portable Yes, are their fittings as per Rule Yes. 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 Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Yes, if situated near unprotected combustible material state minimum distance from same horizontally Yes and vertically 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 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 Yes. 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 the cartridge type Yes.

are they of an approved type Yes. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type Yes. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Yes, are they suitably stored in dry situations Yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory Yes.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	60	220	273	500	3-cyl. Diesel engines	Pure Oil	Above 150° F
M/G. SET	2	25	110	227	640	1-cyl. Diesel engines		
	1	30	110	273	1300	220 V. H. M. A. C.		
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands, Sq. Ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATORS (220 V. H. T.)	60	1	37/0.83	273	296	444	V.C.	L.C. A. B.
" " EQUALISER		1	19/0.72	—	157	22	V.C.	L.C. A. B.
110 V. H. T. GENERATORS	25	1	37/0.72	227	246	444	V.C.	L.C. A. B.
" " EQUALISER		1	19/0.64	—	135	22	V.C.	L.C. A. B.
EMERGENCY GENERATOR		1	37/0.83	180	296	244	V.C.	L.C. A. B.
ROTARY TRANSFORMER: MOTOR	30	2	37/0.83	273	248	544	V.I.R.	L.C. A. B.
" " GENERATOR		1	37/0.83	—	184	27	V.I.R.	L.C. A. B.

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...							
FWD. ACCUM. AND CARGO S.B. FEED (I)	1	19/0.64	68.5	135	360	V.C.	L.C.A.B.
AFT. ACCUM. AND CARGO S.B. FEED (II)	1	7/0.64	59.5	75	140	V.C.	L.C.A.B.
ENG. RM. AUXILIARIES S.B. FEED (III)	1	7/0.86	20.5	24	40	V.I.R.	L.C.A.B.
REFRIG. FANS S.B. FEED (IV)	1	19/0.64	78.5	87	360	V.C.	L.C.A.B.
ENGINE ROOM LTA. D.B.	1	7/0.64	20.5	46	80	V.I.R.	L.C.A.B.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/036	15	24	280	V.I.R.	L.C. A.B.
NAVIGATION LIGHTS	1	7/029	6.3	18.2	280	V.I.R.	L.C. A.B.
LIGHTING AND HEATING							
S.B. FEEDS:- AFT. D.B. AND AFT. CARGO D.B. @ 1	7/064	10.15	31	380	V.I.R.	In galv. pipes	
ENG. D.B. AND OFFICE D.B. @ 1	7/036	10.12.5	24	X	V.I.R.	L.C.	
KETTLE AND TOASTER @ 1	1/064	4.28	12.9	360	V.I.R.	L.C.	
S.B. FEEDS:- CAPT. D.B. AND PASSENGER D.B. @ 1	7/036	18.21	24	X	V.I.R.	L.C.	
FORWARD CARGO D.B.	1	7/052	15.5	37	310	V.I.R.	In galv. pipes
TOASTER AND DOM. REFRIG. @ 1	1/064	8.6	12.9	360	V.I.R.	L.C.	

NOTE X MAINS LED TO SEPARATE FUSES AT EACH CABIN.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
NO. 1. REFRIG. COMPRESSOR	1	42	1	19/0.83	168	191	257	V.C.
NO. 2. " "	1	42	1	19/0.83	168	191	257	V.C.
NO. 1. EXTRACTOR PUMP	1	6/9	1	7/0.64	52/75	75	240	V.C.
NO. 2. " "	1	6/9	1	7/0.64	52/75	75	240	V.C.
NO. 1. BLOWER BLOWER	1	6/5	1	7/0.64	58.5	75	230	V.C.
NO. 2. " "	1	6/5	1	7/0.64	58.5	75	230	V.C.
AIR COMPRESSOR	1	3	1	7/0.64	28	31	80	V.I.R.
DOMESTIC REFRIG. M/C	1	5	1	7/0.64	42.5	75	64	V.C.
NO. 1. REFRIG. BRINE PUMP	1	4	1	7/0.64	20	31	290	V.I.R.
NO. 2. " "	1	4	1	7/0.64	20	31	290	V.I.R.
REFRIG. CIRC. PUMP	1	5	1	7/0.64	25.5	31	180	V.I.R.
OIL PURIFIER (FED FROM III)	1	1	1	1/0.64	9	12.9	120	V.I.R.
BRUSHING M/C (FED FROM III)	1	1	1	1/0.64	9	12.9	120	V.I.R.
REFRIG. VENT FANS (FED FROM IV)	4	4.5	1	7/0.36	18	24	85	V.I.R.
REFRIG. FAN (FED FROM IV)	1	1.6	1	3/0.36	6.5	12	70	V.I.R.
WORKSHOP MOTOR	1	3	1	7/0.64	27	31	60	V.I.R.

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.

James *Sunderland Forge & Eng Co Ltd*
A. J. Garney

Electrical Engineers.

Date *6-2-1939*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *62 feet*

Minimum distance between electric generators or motors and steering compass *60 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.14* Ampères *12* feet from standard compass *on the* ~~feet from~~ steering compass.

A cable carrying *.14* Ampères *on the* ~~feet from~~ standard compass *12* feet from steering compass.

A cable carrying *.* Ampères *.* feet from standard compass *.* feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power *Yes*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted *Yes*

The maximum deviation due to electric currents was found to be *Nil* degrees on *Every* course in the case of the standard compass, and *Nil* degrees on *Every* course in the case of the steering compass.

R. N. Thompson

Builder's Signature.

Date *7-3-39*

Chairman

Is this installation a duplicate of a previous case *No*

If so, state name of vessel

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 fitted under special survey. The materials used and the workmanship are good. On completion the equipment was operated under working conditions and the overboard and reversed current trip mechanisms of the circuit breakers were adjusted and tested. The insulation resistance of all circuits was measured. This equipment is in my opinion suitable for a classed vessel.

Notes
14/3/39

Total Capacity of Generators *170* Kilowatts.

The amount of Fee ... £ *39: 10: 0*

When applied for

10 MAR 1939

Travelling Expenses (if any) £

When received

20: 3: 19: 39

Santerson

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 21 MAR 1939

Assigned

See Std. J.C. 32593