

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 3 NOV 1941

Date of writing Report... 25<sup>th</sup> October 1941... When handed in at Local Office... 10:11:41... Port of... Glasgow.

No. in Survey held at... Glasgow... Date, First Survey... 1:4:41... Last Survey... 5<sup>th</sup> Sept. 1941... (Number of Visits... 23...)

Reg. Book. 23259 on the M.V. 'EMPIRE PRIDE' Tons {Gross... 9248 Net...}

Built at... Glasgow... By whom built... Barclay Curle... Yard No... 680... When built... 1941.

Owners... His Majesty represented by The Minister of War Transport... Port belonging to... Glasgow.

Electrical Installation fitted by... The Sunderland Forge & Eng. Co. Ltd... Contract No... 680... When fitted... 1941.

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

Have plans been submitted and approved... System of Distribution... two wire... Voltage of supply for Lighting... 220.

Heating... Power... 220... Direct or Alternating Current, Lighting... Dc... Power... Dc... 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... Are turbine emergency governors fitted with a

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

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... are shunt field regulators provided... 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... and the results, found as per rule... Are the lubricating arrangements and the construction

of the generators as per rule... Position of Generators... in engine room

is the ventilation in way of generators satisfactory... are they clear of inflammable material... 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... are the bedplates and frames earthed... and the prime movers and generators in metallic

contact... Switchboards, where are main switchboards placed... special platform in engine room.

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

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

material is used for the panels... Sindan fo... 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 frame effectually earthed...

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

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

side of switches... Description of Main Switchgear for each generator and arrangement of equaliser switches... Triple pole C.B. with

2. o/c Time Lag. & R.I. Trip Third. pole acting as equalizer with preference trips relay & aux'l

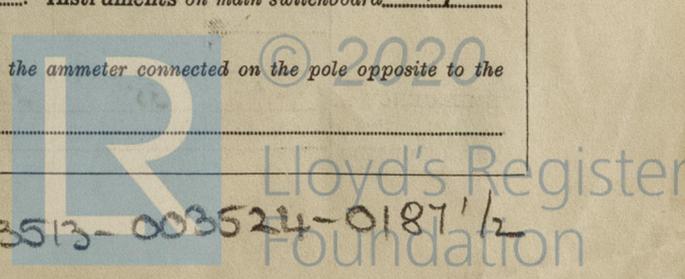
contacts.

and for each outgoing circuit... D.P. C.B. with o/c. Time Lag. & Shunt Trips or D.P. Switch and fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Instruments on main switchboard... 4

ammeters... 4... voltmeters... synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection... Earth Testing, state means provided... earth lamps.



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Switches, Circuit Breakers and Fuses, are they as per Rule L, are the fuses an approved type L, are all fuses labelled as per Rule L, are the reversed current protection devices connected on the pole opposite to the equaliser connection L, have they been tested under working conditions L. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule L. Cables, are they insulated and protected as per the appropriate Tables of the Rules L, 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 8-3 Volt 1/2", the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets L. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends L with insulating compound - or waterproof insulating tape L. 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 L, are cables laid under machines or floorplates -, if so, are they adequately protected -. Are cables in machinery spaces, galleys, laundries, etc., lead covered L or run in conduit -. State how the cables are supported and protected Main L.C. clipped to wood grounds protected where necessary. Machinery space L.C. clipped to steel tray. Accommodation L.C. clipped. Are all lead sheaths, armouring and conduits effectually bonded and earthed L. Refrigerated chambers, are the cables and fittings as per Rule -. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands L, where unarmoured cables pass through beams, etc., are the holes effectually bushed L and with what material fibro. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule L. Emergency Supply, state position brat deck and method of control own switchboard. Navigation Lamps, are they separately wired L controlled by separate double pole switches L and fuses L. Are the switches and fuses in a position accessible only to the officers on watch L, is an automatic indicator fitted L. Secondary Batteries, are they constructed and fitted as per Rule -, are they adequately ventilated -. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof L. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present -, if so, how are they protected -. and where are the controlling switches fitted -, are all fittings suitably ventilated L, are all fittings and accessories constructed and installed as per Rule L. Searchlight Lamps, No. of 1, whether fixed or portable -, are their fittings as per Rule L. Heating and Cooking, is the general construction as per Rule L, are the frames effectually earthed L, are heaters in the accommodation of the convection type -. Motors, are all motors constructed and installed as per Rule L and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil L, if situated near unprotected combustible material state minimum distance from same horizontally - and vertically -. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing L. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule L. Control Gear and Resistances, are they constructed and fitted as per Rule L. 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 -, are all fuses of the cartridge type - are they of an approved type -. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type -. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule L, are they suitably stored in dry situations L. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory L.

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 ...	4	160	220	728	500	oil engine	oil above 150°F.	
EMERGENCY ...	1	35	220	160	1500	oil engine	oil above 150°F.	
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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 GENERATOR ...	160	2	37/103	727	770	245	rc	LC.
" " EQUALISER ...		1	37/103	-	585	125	rc	LC.
EMERGENCY GENERATOR ...	35	1	19/083	160	191	30	rc	LC.
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR ...								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.		
AUX. SWITCHBOARDS AND SECTION BOARDS ...								
Main Sw. & Emergency Sw. Bd.		1	19/083	160	191	400	rc	L.C.
E.R. FOR POWER SB.		2	19/072	314	314	268	rc	L.C.
FOR FAN & POWER PANEL.		2	19/083	350	382	650	rc	L.C.
GALLEY FAN & POWER PANEL.		2	19/072	301	314	350	rc	L.C.
FAN & POWER PANEL. AFT.		1	19/083	176	191	600	rc	L.C.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.		
WIRELESS ...								
NAVIGATION LIGHTS ...								
LIGHTING AND HEATING								
ACCOMMODATION L.T. SB.		1	19/064	80	135	300	rc	L.C.
CREW L.T. SB.		1	19/064	59	135	300	rc	L.C.
TROOP L.T. SB.		1	19/064	69.8	135	300	rc	L.C.
E.R. L.T. OB. Top.		1	7/086	16	24	190	Rubber	L.C.
" Bottom.		1	7/086	15.7	24	160	"	L.C.
" Port.		1	7/086	6.7	24	190	"	L.C.
" Starb.		1	7/086	6.7	24	168	"	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.	
REFRIG. MOCH. POWER. DB.	1		7/064	69.5	75	36	rc	L.C.
E.R. TENT. FANS.	4	1 1/4	7/029	8	15	490	Rubber	L.C.
REFRIG. COMPRESSOR.	2	33	19/064	126	135	160	rc	L.C.
AIR COMPRESSOR.	2	120	27/072	452	592	290	rc	L.C.
TURNING GEAR.	2	18.	7/064	72.8	75	270	rc	L.C.
FROM E.R. FOR POWER SB.								
OIL FUEL TRANS.	2	10	7/064	40.	46	128	Rubber.	L.C.
SANITARY & BILGE.	2	24	19/052	95	104	110	rc	L.C.
OIL PURIFIERS	2	2.5	7/029	12	15	175	Rubber	L.C.
" "	2	3	7/029	13	15	175	Rubber	L.C.
FUEL VALVE COOLING.	2	1	7/044	4.8	5	40	Rubber.	L.C.
PRINING PUMP.	2	2	7/064	8.6	10	80	Rubber.	L.C.
SW. PUMP.	2	38	19/072	147	157	250	rc	L.C.
BALL AST. PUMP.	1	38	19/072	147	157	235	rc	L.C.
PISTON & JACKET COOLING.	3	37	19/072	143	157	186	rc	L.C.
FORCED LUB. OIL.	3	11	7/064	46	75	156	rc	L.C.
AUX. CIRCULATING	1	6.5	7/044	28.5	42	264	rc	L.C.
STEERING GEAR	2	50	19/083	190	191	586	rc	L.C.
WINDLASS & BOOSTER.	1	52	27/064	218.	252	300	rc	L.C.
BOAT WINCHES FOR	4	12 1/2	7/064	50	75	250	rc	L.C.
MIDSHIP	4	12 1/2	7/084	50	75	350	rc	L.C.
AFT.	4	12 1/2	7/064	50	75	250	rc	L.C.
FOR WINDLASS	4	35	19/064	145	135	400	rc	L.C.
MID WINCHES	4	35	19/064	145	135	300	rc	L.C.
AFT WINCHES	4	35	19/064	145	135	400	rc	L.C.
WARPING WINCH	1	38	19/072	154	157	360	rc	L.C.

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.

Electrical Engineers.

Date 4th November 1941.

*J.C. Shanks*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *48 feet*

Minimum distance between electric generators or motors and steering compass *40 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.18* Ampères *led into* feet from standard compass *led into* feet from steering compass.

A cable carrying *13* Ampères *10* feet from standard compass *10* 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 *mi* degrees on *and* course in the case of the standard compass, and *mi* degrees on *and* course in the case of the steering compass.

*For SIMON, CURRIE & CO., LTD.*

*H.T. ...*

Builder's Signature.

Date *3rd Nov 41*

SECRETARY

Is this installation a duplicate of a previous case. 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 on board under special survey tests under full working conditions and found satisfactory. The materials and workmanship are good. All the requirements of the approved plans and M.O.W.T specification have been carried out.*

*Noted  
2/11/41  
17/11/41*

*Rob  
19/11/41*

Total Capacity of Generators *675* Kilowatts.

The amount of Fee ...	<i>£ 64:19</i>	When applied for,	<i>12.9.41</i>
<i>Man. Serv. Chgs.</i>	<i>12-7-6</i>	When received,	<i>2/11/41</i>
Travelling Expenses (if any) £	:		

*J. P. ...*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 11 NOV 1941*

Assigned *See Trip Entry Report*

2m.10.38.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)

