

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report... 20th SEPT. 44 When handed in at Local Office... 2.10.44 Port of... GLASGOW. Received at London Office... 6 OCT 1944

No. in Survey held at... GOVAN, GLASGOW. Date, First Survey... 31 May 1944 Last Survey... 20th SEPT. 1944
Reg. Book. (Number of Visits... 11)

89312 on the M.V. "EMPIRE SATURN" Tons { Gross... 8390 Net... 5550

Built at... BELFAST By whom built... HARLAND & WOLFF LTD. Yard No. 1242 When built... 1944

Owners... MINISTRY OF WAR TRANSPORT. Port belonging to...

Electrical Installation fitted by... HARLAND & WOLFF LTD. GOVAN. Contract No. — When fitted... 1944

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

Have plans been submitted and approved... YES System of Distribution... TWO WIRE Voltage of supply for Lighting... 110 V.

Heating... — Power... 110 Direct or Alternating Current, Lighting... D.C. Power... D.C. If Alternating Current state periodicity... — Prime Movers,

has the governing been tested and found as per Rule when full 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... No, 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 Are the lubricating arrangements and the construction

of the generators as per rule... YES Position of Generators... IN ENGINE ROOM

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... NEAR GENERATORS

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... SINDANYO, 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 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...

DOUBLE POLE SWITCH AND DOUBLE POLE FUSES

and for each outgoing circuit... DOUBLE POLE CHANGEOVER SWITCH AND DOUBLE POLE FUSES

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... YES Instruments on main switchboard... 2

ammeters... 2 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.

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 If circuit breakers are provided for the generators, at what overload current did they open when tested... —, are the reversed current

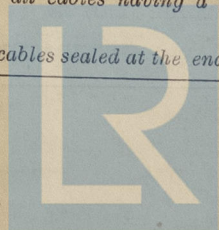
protection devices connected on the pole opposite to the equaliser connection... —, have they been tested under working conditions, and at what current

did they operate... — Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule... YES

ables, 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 W.E.,

state maximum fall of pressure between bus bars and any point under maximum load... 5.5 V., 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 ends... 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. By ENCLOSURE IN WELDED GASTIGHT BOXES IN PUMP ROOM ENTRANCES AND BY USE OF ADMIRALTY PATTERN FITTINGS IN MAGAZINE. and where are the controlling switches fitted. REMOTE FROM PUMP ROOM ENTRANCES & OUTSIDE MAGAZINES, are all fittings suitably ventilated. YES, are all fittings and accessories constructed and installed as per Rule. YES Searchlight Lamps, No. of —, whether fixed or portable. —, are their fittings as per Rule. — Heating and Cooking, is the general construction as per Rule. —, are the frames effectually earthed. —, are heaters in the accommodation of the convection type. — 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. — and vertically. — Are motors coupled to oil fuel transfer and unit 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. 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 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. — 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 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	1 ✓	30 ✓	110 ✓	273 ✓	550 ✓	STEAM ENGINE ✓		
	1 ✓	30 ✓	110 ✓	273 ✓	550 ✓	STEAM ENGINE ✓		
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (least plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel For Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR No. 1. STEAM	30	1	0.2	273	296	24	PIROTENAX	CABLE.
" " EQUALISER								
" " No. 2. STEAM	30	1	0.2	273	296	60	PIROTENAX	CABLE.
SHORE CONNECTION	-	1	0.2	250	296	100	PIROTENAX	CABLE.
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet plus return feet).	INSULA- TED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. 20-22-24-26-30-36-42-48	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...							
MIDSHIP MASTERBOARD.	1	0.2	113	286✓	540	PROTENAX CABLE.	
SECTION BOX NO 1 W/T & NAV.	1	0.1	27	191✓	630	Do	
SECTION BOX NO 2 E.R. MOTORS.	1	0.1	110	191✓	120	Do	
SECTION BOX NO 3 E.R. & AFT LG.	1	0.06	80	135✓	90	Do.	
DEGAUSSING.	1	37/072	132	152✓	80	V.I.R.	LS.A.B

LIGHTING AND HEATING, ETC., CABLES.

		LIGHTING AND HEATING, ETC., CABLE.				PYROTEMAX CABLE.	
WIRELESS	... MASTERBEARD SUPPLY	1	0.06	25	135	120	
	... SB NO1 SUPPLY	1	0.06				
NAVIGATION LIGHTS	... MASTERBEARD SUPPLY	1	0.0045	2	183	120	Do
	... SB NO1 SUPPLY	1	0.0045				
LIGHTING AND HEATING							
Mid Masterbeard Room	DB NO1. NAV. BRIDGE LTG. ETC.	1	0.0225	30	75	120	Do
	DB NO2. UPPER BRIDGE LTG.	1	0.0045	14	183	60	Do
	DB NO3. BRIDGE DK + CENTRE CASTLE ETC. LTG.	1	0.0145	33	57	12	Do
	DB NO4 PORTABLE CONNS. FORD + MID.	1	0.0045	14	15	12	Do
	DB NO5 FORECASTLE LTG. ETC.	1	0.0145	12	57	360	Do
	DB NO6 PORTABLE CONNS. AFT.	1	0.007	7	28	190	Do
	DB NO7. ACCOM. LTG. PORT AFT.	1	0.01	30	42	210	Do
	DB NO8. ACCOM LTG STBD. AFT.	1	0.0225	30	75	60	Do
	DB NO9. ENG. ROOM H.C.P. LANTERNS. PORT.	1	0.007	13	28	200	Do
	DB NO10 ENG. ROOM H.C.P. LANTERNS. STBD.	1	0.0045	8	15	12	Do
	DB NO11 E+B. STORE ETC. PORT.	1	0.0045	8	15	200	Do
	DB NO12 E+B. STORE ETC. STBD.	1	0.007	6	28	44	Do
	DB NO13 ENG. ROOM BOTTOM PLATFORM PORT.	1	0.0045	8	15	220	Do
	DB NO14. ENG. ROOM BOTTOM PLATFORM STBD.	1	0.0045	4	15	60	Do

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
TURNING GEAR MOTOR	1	10	1	0.04	80	104	116	Pyrotenax Cable.
Nº1 THERMOTANK Accom.	1	4	1	0.0145	33	54	164	Do.
Nº2 Do. Do.	1	4	1	0.0225	33	75	300	Do.
L.O. PURIFIER.	1	3	1	0.0145	25	57	140	Do.
F.O. PURIFIER	1	3	1	0.0225	25	75	60	Do.
WORKSHOP MOTOR.	1	3	1	0.01	24	42	248.	Do.

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.

For HARLAND AND WOLFF, LIMITED

Electrical Engineers.

Date 25th SEPT. 1944

Govan Secretary.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 15 FEET FROM W/T MOTOR ALTERNATOR.

Minimum distance between electric generators or motors and steering compass 16 FEET FROM W/T MOTOR ALTERNATOR

The nearest cables to the compasses are as follows:—

A cable carrying 0.1 Ampères LED INTO feet from standard compass 8 feet from steering compass.

A cable carrying 0.1 Ampères 10 feet from standard compass LED INTO feet from steering compass.

A cable carrying 25.0 Ampères 7 feet from standard compass 7 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 ANY course in the case of the standard compass, and NIL degrees on ANY course in the case of the steering compass.

For HARLAND AND WOLFF, LIMITED

Builder's Signature.

Date 25th SEPT. 1944

Govan Secretary.

Is this installation a duplicate of a previous case No If so, state name of vessel —

Plans. Are approved plans forwarded herewith No If not, state date of approval 7th MARCH 1944

Certificates. Are certificates of test for motors engaged on essential 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 fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship are good.
All the requirements of the approved plans and the M.O.S. specification have been carried out.

Noted

Skue

12. 10. 44

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... £ 28 : 10 :
Specification £ 4 - 2 - 6
Travelling Expenses (if any) £ :

When applied for,
13 OCT 1944
When received,
19.....

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned