

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

15 DEC 1949
Received at London Office.

Date of writing Report. 3rd NOV. 49 When handed in at Local Office. 10th Dec. 49 Port of SOUTHAMPTON

No. in Survey held at WOOLSTON, SOUTHAMPTON Date, First Survey 6th JULY 29 Last Survey 15th NOV 49
Reg. Book. (Number of Visits. NINE. 9)

on the T.S.M.V. BALMORAL. Tons { Gross 688.10 Net

Built at SOUTHAMPTON By whom built J.I. THORNYCROFT & CO Yard No. 4120 When built 1949

Owners ISLE OF WIGHT & S. OF E. S.P. CO Port belonging to SOUTHAMPTON

Electrical Installation fitted by J.I. THORNYCROFT & CO LTD Contract No. 4120 When fitted 1949

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

Have plans been submitted and approved YES System of Distribution 2 WIRE D.C. Voltage of supply for Lighting 220

Heating Power 220 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 YES 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

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 ENGINE ROOM : PORT & STB^d AFT

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 : AFT.

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

material is used for the panels EBONY 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

160 AMP D.P. %LOAD, NO VOLT, T. LAG & REVERSE BREAKERS WITH EQUALISER

SWITCH.

and for each outgoing circuit D.P. QUICK BREAK SINGLE THROW KNIFE SWITCHES & FUSES

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule 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 YES Earth Testing, state means provided LAMP, FUSE & SWITCH PER POLE

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 220 AMPS, are the reversed current

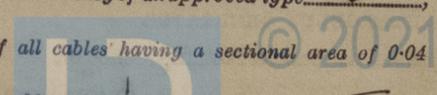
protection devices connected on the pole opposite to the equaliser connection YES, have they been tested under working conditions, and at what current

did they operate 23 AMPS 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

state maximum fall of pressure between bus bars and any point under maximum load 3.2, 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



with insulating compound _____ or waterproof insulating tape _____. 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 _____. State how the cables are supported and protected. CLIPPED TO PERFORATED TRAY & SHIP'S STRUCTURE & PROTECTED WITH SHEET METAL WHERE NECESSARY.

Are all lead sheaths, armouring and conduits effectually bonded and earthed. YES. 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. YES, where unarmoured cables pass through beams, etc., are the holes effectively bushed. YES and with what material. LEAD SHEET. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. YES. Emergency Supply, state position. GENERALLY THROUGHOUT SHIP BATTERIES ON PROM. DK. and method of control. MANUAL

Navigation Lamps, are they separately wired. YES controlled by separate double 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 what is the battery capacity in ampere hours. 60 A.H.

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. GASTIGHT FITTING

and where are the controlling switches fitted. OUTSIDE COMPARTMENT, 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 _____. 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. YES

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 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 _____. Are all fuses of the cartridge type _____. Are they of an approved type _____. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships _____. 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 _____. 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	2	35	220	156	1000	DIESEL ENGINE	POOL DIESEL OIL	
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead 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	35	1	37.083	159	184	60	V.I.R.	LEAD COVERED
" EQUALISER		1	19.083		83	60	V.I.R.	" "
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead 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.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
BATTERY CHARGING SWITCHBOARD	1	19.052	30	64	60	V.I.R.	LEAD COVERED
ENGINE ROOM AUXILIARIES	1	19.064	50	83	40	"	"
PANTRY EQUIPMENT	1	19.052	39	64	250	"	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
			In the Circuit.	Rule.			
WIRELESS	1	7.036	10	24	220	V.I.R.	LEAD COVERED
NAVIGATION LIGHTS	1	3.036	11	10	220	"	"
LIGHTING AND HEATING	1	7.036	5	24	150	"	"
"	1	"	15	"	130	"	"
"	1	"	9	"	70	"	"
"	1	"	6.1	"	110	"	"
"	1	"	13	"	110	"	"
"	1	"	5	"	220	"	"
"	1	"	14	"	70	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead 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.			
WINDLASS	1	11	1	19.052	45	64	220	V.I.R.	LEAD COVERED
CAPSTAN	1	12	1	19.052	48	64	200	"	"
STEERING GEAR	1	4	1	7.036	13	24	200	"	"
AIR COMPRESSOR	1	10	1	19.052	40	64	60	"	"
FUEL OIL TRANSFER PUMP	1	1	1	3.036	4.6	10	80	"	"
BILGE & GEN SERVICE PUMP	1	4.5	1	7.044	23.4	31	60	"	"
SANITARY & BILGE PUMP	1	3.45	1	7.036	19.5	24	50	"	"
LUB. OIL PUMP	1	5	1	7.044	20	31	100	"	"
LUB. OIL PURIFIER	1	0.5	1	3.029	2.6	5	100	"	"
12" AXIAL FLOW FAN	1	1	1	3.029	0.6	5	100	"	"
F.W. PUMP	1	0.5	1	3.029	2.6	5	60	"	"
H.W. PUMP	1	0.5	1	3.029	2.6	5	60	"	"

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,

Grillan

Electrical Engineers.

Date *Nov: 29th. 1949*

GENERAL MANAGER,
SOUTHAMPTON

COMPASSES.

Minimum distance between electric generators or motors and standard compass..... *28 FEET*

Minimum distance between electric generators or motors and steering compass..... *28 FEET*

The nearest cables to the compasses are as follows:—

A cable carrying *10* Ampères feet from standard compass *4* feet from steering compass.

A cable carrying *5* Ampères feet from standard compass *4* feet from steering compass.

A cable carrying *1* Ampères feet from standard compass *4* 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 *NIL* course in the case of the steering compass.

JOHN L. THORNYCROFT & CO. LIMITED

Grillan

Builder's Signature.

Date *Nov: 29th. 1949*

GENERAL MANAGER,
SOUTHAMPTON

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. *25th SEPTEMBER 1948*

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 installed under special survey and in accordance with the approved plans and Rule requirements.

The installation has been tested under working conditions, insulation tests have been carried out, materials and workmanship etc good, all found satisfactory.

The electrical installation is, in our opinion, such as could be accepted for classification.

Attached herewith are copies of test certificates for motors of electrically driven auxiliary machinery.

Total Capacity of Generators..... *70. ✓* Kilowatts.

The amount of Fee	£ <i>50.10</i>	:	When applied for,
		:19.....
Travelling Expenses (if any) £	:	:	When received.
		:19.....

B. Lamb
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 19 JAN 1950*

Assigned *In units see J.S. Rho*

5m. 4.30.—Transfer. (MADE AND PRINTED IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)