

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 23 JUN 1948
Received at London Office.....

Date of writing Report... 1st June 1948... When handed in at Local Office... 16 June 1948... Port of... Glasgow

No. in Survey held at... Glasgow... Date, First Survey... 23 Dec. 1947... Last Survey... 2nd June 1948
(Number of Visits... 16...)

38381 on the M. V. BRITISH RANGER Tons {Gross... Net...}

Built at... Glasgow... By whom built... Harland & Wolff Ltd... Yard No. 1362... When built... 1948

Owners... British Tanker Co. Ltd... Port belonging to... London British

Electrical Installation fitted by... Harland & Wolff Ltd... Contract No. 1362... When fitted... 1948

Is vessel fitted for carrying Petroleum in bulk... Yes... Is vessel equipped with D.F... Yes... E.S.D... Yes... Gy.C... Yes... Radar Type... Sub. Sig. 2000

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

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... 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... Yes

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

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... Sindampo... 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 circuit breaker, with interlocked equaliser switch fitted with O/L and R/C trips

and for each outgoing circuit... Double pole switch and fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Yes... Instruments on main switchboard... 3

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... 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... Full load... are the reversed current protection devices connected on the pole opposite to the equaliser connection... Yes

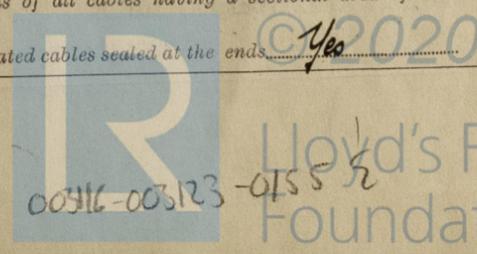
have they been tested under working conditions, and at what current did they operate... 15% Full load

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... 5.4 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 ends... Yes



with insulating compound — 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 No, if so, are they adequately protected —. 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 tray, woodwork, or metal work protected by plating where necessary.

Are all lead sheaths, armoring 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 effectually bushed Yes and with what material brass ferrules or lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position in engine room and method of control automatic relay switch.

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 45 at 10 hour rate.

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 Flameproof fittings installed in pump room in accordance with rule requirements and where are the controlling switches fitted Midship accommodation, are all fittings suitably ventilated Yes.

are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of 1, whether fixed or portable portable, are their fittings as per Rule Yes. 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 —. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule —. 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 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 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	75	110	682	500	steam engine	—	—
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	75	1	91/103	682	738		V.C.	L.C.A.B.
" " EQUALISER		1	61/093	—	464		"	"
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							
MIDSHIP MASTER BOARD (POWER & LIGHTING)	1	37/093	155	343	520	V.C.	L.C.A.B.
" " " RADAR & WIRELESS	1	37/093	90	343	520	"	"
TURNING GEAR	1	19/052	80	104	60	"	"
SECT. BOX NO 1 AFT. ACCOM LITS. & SMALL POWER	1	19/052	80	104	140	"	"
SECT. BOX NO 2 ENG. ROOM LIGHTING	1	7/064	44	75	40	"	"
OIL PURIFIER S&F BOX M2.	1	7/064	50	75	40	"	"
AFT ACCOM & ENG. ROOM VENT S&F BOX F1.	1	7/064	60	75	120	"	"
WORKSHOP MOTORS S&F BOX M1.	1	7/064	70	75	120	"	"
AFT BOAT WINCHES S&F PANEL	1	19/052	90	104	140	"	"
REFRIG. PLANT	1	7/064	36	75	370	"	"
SHORE SUPPLY	1	37/072	—	246	120	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/064	30	75	210	V.C.	L.C.B.
NAVIGATION LIGHTS & S&F BOX NO 2	1	7/044	23	31	202	Rubber	"
LIGHTING AND HEATING							
BOAT WINCH PORT MID.	1	7/064	65	75	116	V.C.	L.C.B.
" " STARB'D MID.	1	7/064	65	75	160	"	"
ACCOM. VENT FANS NO 1	1	7/036	17	24	90	Rubber	"
" " NO 2	1	7/036	17	24	90	"	"
ECHO SOUNDING	1	7/036	5	24	140	"	"
GYRO COMPASS	1	3/029	3	5	20	"	L.C.
HOSPITAL AIR CONDITIONING PLANT	1	7/036	14	24	60	"	L.C.B.
RADAR TYPE 26B	1	19/064	60	135	120	V.C.	L.C.
MASTER BOARD LIGHTING CIRCUITS							
SUEZ CANAL PROJECTOR	1	19/052	80	104	620	V.C.	L.C.A.B.
S&F BOX NO 1	1	7/044	25	31	120	Rubber	L.C.B.
S&F BOX NO 3	1	7/044	18	31	112	"	"
S&F BOX NO 4	1	8/044	37	60	—	—	—
S&F BOX NO 5	1	7/044	29	31	20	Rubber	L.C.B.
MAGT FLOODLIGHTS	1	7/036	7	24	170	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
FUEL OIL PURIFIER	1	3	1	7/044	25	31	90	Rubber L.C.A.B.
LUB OIL PURIFIER	1	3	1	7/044	25	31	150	" "
ENG. ROOM VENT FANS	1	1.5	1	7/029	13	15	140	" "

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 WORRE LIMITED,

Ryall
General Secretary

Electrical Engineers.

Date

COMPASSES.

Minimum distance between electric generators or motors and standard compass..... 13 feet W/T motor generator

Minimum distance between electric generators or motors and steering compass..... 12 "

The nearest cables to the compasses are as follows:—

A cable carrying .2 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 12 Ampères 6 feet from standard compass 6 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 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 WORRE LIMITED,

Ryall
General Secretary

Builder's Signature.

Date

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

Plans. Are approved plans forwarded herewith..... If not, state date of approval. 27-5-47

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 working conditions, and found satisfactory. The materials and workmanship are good.

Noted.
P.S.
10-7-48.

Total Capacity of Generators..... 150 Kilowatts.

The amount of Fee ... £ 45 : 0 : 22 JUN 1948

Travelling Expenses (if any) £ : : When received. 19.....

J. W. Wright

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

SEE ACCOMPANYING MACHINERY REPORT

cls. 72844

Assigned

GLASGOW

22 JUN 1948



© 2020

Lloyd's Register Foundation

5m. 4.89.—Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)