

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 30 NOV 1949

Date of writing Report 14th NOVEMBER 1949 When handed in at Local Office 21st Nov. 1949 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. 92130 Survey held at NEWCASTLE-ON-TYNE Date, First Survey 27.6.49 Last Survey 7.11.49 (No. of Visits 16)

on the M.V. "BRITISH ARDOUR" Tons } Gross 8615.73 Net 4981.78

Built at NEWCASTLE-ON-TYNE By whom built SWAN HUNTER & Wigham RICHARDSON LTD. Yard No. 1866 When built 1949

Owners BRITISH TANKER CO. LTD. Port belonging to LONDON

Installation fitted by CAMPBELL & ISHERWOOD LTD. When fitted 1949

Is vessel equipped for carrying Petroleum in bulk YES Is vessel equipped with D.F. YES E.S.D. YES Gy.C. YES RADAR YES

Plans, have they been submitted and approved YES System of Distribution Two WIRE Voltage of Lighting 110

Heating - Power 110 D.C. or A.C., Lighting DC. Power D.C. If A.C. state frequency -

Prime Movers, has the governing been found as per Rule when full load is thrown on and off YES Are turbine emergency governors fitted with a trip switch - Generators, are they compound wound YES, and level compounded under working conditions YES

if not compound wound state distance between generators - and from switchboard - Are the generators 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

Position of Generators IN ENGINE ROOM, is the ventilation in way of generators satisfactory YES are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil YES

Switchboards, where are main switchboards placed NEAR GENERATORS.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil YES, what insulation is used for the panels MATT. FINISH "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 construction as per Rule, including locking of screws and nuts YES

Description of Main Switchgear for each generator and arrangement of equaliser switches. 750 AMPERE TRIPLE POLE CIRCUIT BREAKER WITH TWO OVERLOAD TRIPS WITH TIME LAGS AND REVERSE CURRENT TRIPS.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit. DOUBLE POLE CHANGEOVER SWITCH WITH A FUSE ON EACH POLE.

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

ammeters Two voltmeters - synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices 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

make of fuses "ZED" H.R.C., are all fuses labelled YES. If circuit breakers are provided for the generators, at what overload do they operate 120% F.L., and at what current do the reversed current protective devices operate 15% F.L.

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule YES.

Cables, are they insulated and protected as per Rule 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 < 6 VOLTS, are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets YES. Are all paper insulated and varnished cambric insulated cables sealed at the ends 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 any 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 -

or of the "HR" type - State how the cables are supported or protected MAINS - LEAD COVERED ARMoured AND BRAIDED CLIPPED TO STEEL TRAY. ACCOMMODATION CABLES - LEAD COVERED CLIPPED TO WOOD GROUNDS.

Are all lead sheaths, armoring and conduits effectually bonded and earthed 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

Refrigerated chambers, are the cables and fittings as per Rule -

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule YES. Emergency Supply, state position



Navigation Lamps, are they separately wired Yes controlled by separate double pole switches 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. Is an alternative supply provided Yes.

Secondary Batteries, are they constructed and fitted as per Rule -, are they adequately ventilated - state battery capacity in ampere hours -.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are any 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 and where are the controlling switches fitted OFFICERS ACCOMMODATION ALLEYWAY. Are all fittings suitably ventilated Yes.

Searchlight Lamps, No. of -, whether fixed or portable -, are they of the carbon arc or of the filament type -.

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 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil Yes.

Are motors coupled to oil fuel transfer and 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 sea 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 an Approved Cartridge Type Yes, make of fuse ZED. H.R.C. 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.

E.S.D., if fitted state maker MARCONI. VISAGRAPH location of transmitter CHARTROOM and receiver DITTO.

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and 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	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ...	2	CAMPBELL & ISHERWOOD LTD.	75	110	681	500	STEAM	BELLISS & MORCOM LTD.
EMERGENCY ... ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	75	1	91-103	681	738	120.	V.C.	L.C.A.B.
" " EQUALISER ...		1	37-103.	341	386	60.	V.C.	L.C.A.B.
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.		No.	No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
				In the Circuit.	Rule.			
MIDSHIP SWITCHBOARD.	RADAR. & W.T.	1	37-083.	70	314.	420.	V.C.	L.C.A.B.
" "	LIGHTING & POWER	1	37-083.	155	314	420	V.C.	L.C.A.B.
NAVIGATING BRIDGE LIGHTING	S.B. "A"	1	7-036.	19	30	15	V.C.	L.C.B.
BRIDGE DECK LIGHTING.	S.B. "E"	1	7-036.	16	30	15	V.C.	L.C.B.
UPPER BRIDGE DECK LIGHTING	S.B. "G"	1	7-052.	30	60	15	V.C.	L.C.B.
BRIDGE DECK LIGHTING.	S.B. "H"	1	7-052.	30	60	15	V.C.	L.C.B.
NAVIGATING BRIDGE LIGHTING	S.B. "O"	1	7-064.	22	80	45	V.C.	L.C.B.
ENGINE ROOM, DIST. BOARD.		1	19-083.	154	202	60	V.C.	L.C.A.B.
UPPER BRIDGE LIGHTING.	S.B. "K"	1	7-064.	52	80	180	V.C.	L.C.A.B.
POOP DECK Ltg.	S.B. "C"	1	7-064.	62	80	240	V.C.	L.C.A.B.
" " "	S.B. "D"	1	19-052	60	110	240	V.C.	L.C.A.B.
REFRIG. MACHY.	S.B. "J"	1	7-064.	44	80	90	V.C.	L.C.A.B.
ENGINE ROOM LIGHTING.	S.B. "G"	1	7-044.	33	92	60	V.C.	L.C.A.B.

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.	
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.				
GYRO COMPASS.	1	7-036.	15	30	150	V.C.	L.C.B.	
ECHO SOUNDING.	1	7-036.	10	30	180	V.C.	L.C.B.	
BRIDGE DECK LIGHTING	D.B. "E1"	1	7-036.	9	30	30	V.C.	L.C.B.
WHEELHOUSE LIGHTING.	D.B. "E2"	1	7-036.	7	30	180	V.C.	L.C.B.
" " "	D.B. "G1"	1	7-036.	5	30	180	V.C.	L.C.B.
NAVIGATING BRIDGE LIGHTING.	D.B. "G2"	1	7-036.	10	30	210	V.C.	L.C.B.
UPPER BRIDGE DECK LIGHTING.	D.B. "G3"	1	7-036.	15	30	150	V.C.	L.C.B.
PORT BRIDGE DECK LIGHTING.	D.B. "H1"	1	7-036.	15	30	60	V.C.	L.C.B.
STAR. " " "	D.B. "H2"	1	7-036.	15	30	60	V.C.	L.C.B.
FORWARD ACCOMM. " "	D.B. "J"	1	7-036.	5	30	330	V.C.	L.C.B.
SUEZ CANAL PROJECTOR.		1	7-064.	40	80	450	V.C.	L.C.B.
RADAR - MARCONI. RADIOLOCATOR.		1	7-064.	45	80	210	V.C.	L.C.B.
WIRELESS.		1	7-064.	20	80	30	V.C.	L.C.B.
BATTERY CHARGING.		1	7-036.	2	30	20	V.C.	L.C.B.
POOP DECK LIGHTING.	D.B. "K1"	1	7-036.	4	30	90	V.C.	L.C.B.
" " "	D.B. "K2"	1	7-036.	10	30	90	V.C.	L.C.B.
" " "	D.B. "K3"	1	7-036.	10	30	90	V.C.	L.C.B.
UPPER DECK LIGHTING.	D.B. "K4"	1	7-036.	14	30	30	V.C.	L.C.B.
" " "	D.B. "K5"	1	7-036.	14	30	9	V.C.	L.C.B.
GALLEY LIGHTING.	D.B. "C1"	1	7-052.	10	60	60	V.C.	L.C.B.
ENGINE ROOM LIGHTING.	D.B. "G1"	1	7-036.	10	30	60	V.C.	L.C.B.
" " "	D.B. "G2"	1	7-036.	10	30	60	V.C.	L.C.B.
BOILER ROOM LIGHTING.	D.B. "G3"	1	7-036.	10	30	120	V.C.	L.C.B.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
MIDSHIP ACCOMM. VENT. FAN MOTORS.	2	3	1	7-052.	26	60	90	V.C. L.C.B.
BOAT WINCH MOTORS.	4	7 1/2	1	7-064.	60	80	90	V.C. L.C.B.
AIR CONDITIONING UNIT.	1	-	1	7-036.	20	30	60	V.C. L.C.B.
PRIMING PUMP MOTOR.	1	1 1/2	1	7-036.	14	30	90	V.C. L.C.A.B.
CRANE MOTOR.	1	3	1	7-064.	26	80	60	V.C. L.C.A.B.
LATHE MOTOR.	1	3 1/2	1	7-064.	30	80	120	V.C. L.C.A.B.
GRINDER MOTOR.	1	2	1	7-036.	18	30	90	V.C. L.C.A.B.
CENTRIFUGE MOTORS.	2	3	1	7-064.	26	80	120	V.C. L.C.A.B.
ENGINE ROOM VENT. FAN MOTOR.	1	1 1/2	1	7-036.	14	30	60	V.C. L.C.A.B.
ACCOMM. VENT. FAN MOTORS.	2	3	1	7-052.	26	60	90	V.C. L.C.B.
DOM. FRIG. COMPRESSOR MOTORS.	2	4	1	7-052.	34	60	90	V.C. L.C.B.
" " CIRC. PUMP MOTOR.	1	1	1	7-052.	10	60	30	V.C. L.C.B.

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.

CAMPBELL & ISHERWOOD, LTD.
Thomas Hunter
 Electrical Contractors. Date 15th Nov 1949

COMPASSES.

Have the compasses been adjusted under working conditions... *Yes.*

FOR SWAN HUNTER & BARNES, LTD. *Matthew* Builder's Signature. Date 17th Nov 1949
 TECHNICAL MANAGER.

Have the foregoing descriptions and schedules been verified and found correct... *Yes.*

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

Plans. Are approved plans forwarded herewith... *Yes* If not, state date of approval... -

Certificates. Are certificates of test for motors engaged on essential sea 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 ship has been installed in accordance with the Society's Rules and Regulations and the arrangements are in accordance with or equivalent to those shown on the approved plans.
 The materials used are of good quality and the workmanship is satisfactory.
 On completion, the insulation resistance of all circuits was above Rule Requirements, the generators operated on load and governing tests with satisfactory results, and the circuit breakers were tested for protective devices and found to be satisfactory.
 The equipment, as installed, is, in my opinion, suitable for a classed ship.*

Noted SW 14/12/49

Total Capacity of Generators... *150* ✓ Kilowatts.

The amount of Fee ... £ *62 : 10.* : When applied for, *29 NOV 1949*
 Travelling Expenses (if any) £ : : When received, *19*

R.P. Storie
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute... *TUES. 20 DEC 1949*

Assigned... *In a/c see J.E. Rpt*

Lloyd's Register (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)