

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

10 MAY 1943

Date of writing Report... 27-4-1943 When handed in at Local Office... 4th May 1943 Port of... Middlesbrough

No. in Survey held at... Haverhill Hill-on-Tees Date, First Survey... 23-2-43 Last Survey... 21-4-1943
Reg. Book. (Number of Visits... 7)

85756 on the M.V. "BRITISH PURPOSE" Tons {Gross... 584.5 Net... 316.4

Built at... Haverhill Hill-on-Tees By whom built... Furness Shipbuilding Co Ltd Yard No... 348 When built... 1943

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

Electrical Installation fitted by... Furness Shipbuilding Co Ltd Contract No... 348 When fitted... 1943

Is vessel fitted for carrying Petroleum in bulk... 4/4 Is vessel equipped with D.F... 4/4 E.S.D... 4/4 Gy.C... 7/6 Sub.Sig... 7/0

Have plans been submitted and approved... 4/4 System of Distribution... Two wire insulated Voltage of supply for Lighting... 110

Heating... Power... 110 Direct or Alternating Current, Lighting... 4/4 Power... 4/4 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... 4/4 Are turbine emergency governors fitted with a trip switch as per Rule... 4/4

Generators, are they compound wound... 4/4, are they level compounded under working conditions... 4/4, 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... 4/4, are shunt field regulators provided... 4/4

Is the compound winding connected to the negative or positive pole... 4/4 Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing... None fitted Have certificates of test for machines under 100 kw. been supplied... 4/4 and the results found as per rule... 4/4

Are the lubricating arrangements and the construction of the generators as per rule... 4/4 Position of Generators... engine room forward of main hatch on framed stools, is the ventilation in way of generators satisfactory... 4/4 are they clear of inflammable material... 4/4, 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... 4/4, are the bedplates and frames earthed... 4/4 and the prime movers and generators in metallic contact... 4/4

Switchboards, where are main switchboards placed... engine room forward bulkhead on platform above generators are they in accessible positions, free from inflammable gases and acid fumes... 4/4, are they protected from mechanical injury and damage from water, steam and oil... 4/4, if situated near unprotected combustible material state distance from same horizontally... and vertically... what insulation material is used for the panels... "Sindensip" if of synthetic insulating material is it an Approved Type... 4/4, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule... Is the frame effectually earthed... 4/4

Is the construction as per Rule... 4/4, including accessibility of parts... 4/4, absence of fuses on the back of the board... 4/4, individual fuses to pilot and earth lamps, voltmeters, etc... 4/4 locking of screws and nuts... 4/4, labelling of apparatus and fuses... 4/4, fuses on the "dead" side of switches... 4/4

Description of Main Switchgear for each generator and arrangement of equaliser switches... a double-pole, single throw quick-break knife switch and double pole cartridge type fuse: D.P.C.O knife switch to supply D.G. to be supplied by either generator.

and for each outgoing circuit... a double pole, double throw knife switch and double-pole cartridge type fuse.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... 4/4 Instruments on main switchboard... 2/0 ammeters... 2/0 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... E lamps coupled to E through bus and bars

Switches, Circuit Breakers and Fuses, are they as per Rule... 4/4, are the fuses an approved type... 4/4, are all fuses labelled as per Rule... 4/4 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... 4/4

Cables, are they insulated and protected as per the appropriate Tables of the Rules... 4/4, 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... are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets... 4/4 Are paper insulated and varnished cambric insulated cables sealed at the ends... 4/4

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with insulating compound yes or waterproof insulating tape Plastic tape - Durabond sealing 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 no. Are cables in machinery spaces, galleys, laundries, etc., lead covered yes or run in conduit no. State how the cables are supported and protected In machinery spaces, along deck runways etc V.C. L.C.B. cables clipped to metal tray or bracing fastened to the surface. In accommodation V.C. L.C.B. cables clipped to the surface and protected where necessary by wood or metal shields.

Are all lead sheaths, armoring and conduits effectually bonded and earthed yes. Refrigerated chambers, are the cables and fittings as per Rule no. 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. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes. Emergency Supply, state position no and method of control no.

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 no, are they adequately ventilated no what is the battery capacity in ampere hours no.

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 "DPS" "DIOPRISM" Removal of lighting fittings so approved, installed in confinement and where are the controlling switches fitted in Officers Mess, are all fittings suitably ventilated yes are all fittings and accessories constructed and installed as per Rule yes Searchlight Lamps, No. of none fitted whether fixed or portable no, are their fittings as per Rule no. Heating and Cooking, is the general construction as per Rule no.

are the frames effectually earthed no, are heaters in the accommodation of the convection type no. 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 no and vertically no. 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 no.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing none fitted. 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 none fitted. 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				Revs. per Min.	DRIVEN BY		WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.		
MAIN	2	30	110	273	600	Single Cylinder				
EMERGENCY						Vertical Steam Engine				
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	50	1	37/063	273	296	50	V.C.	L.C.A.B.
" " EQUALIZER								
" " "	30	1	37/063	273	296	50	V.C.	L.C.A.B.
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							
Sub. Switchboard - Main feed	1	19/085	137	191	440	V.C.	L.C.A.B.
" " - Emergency feed	1	19/085	137	191	440	"	"
Off Accommodation S.B.	1	19/052	47	104	90	"	"
Engine Room Auxiliaries S.B.	1	7/064	67	75	30	"	"
Blow Supply	1	19/085	-	191	104	"	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS	1	7/044	24	42	100	V.C.	L.C.B.
NAVIGATION LIGHTS	1	7/044	18	42	120	"	"
LIGHTING AND HEATING							
Engine Room Lighting DB.	1	7/044	30	42	30	V.C.	L.C.A.B.
Emergency W/T	1	7/044	-	42	200	"	"
Machinery Rm DB (off Aux. Feed)	1	7/044	26	42	50	"	L.C.B.
Gen's Rm DB 'B' (off A/E. Rm. DB)	1	7/044	26	42	70	"	L.C.A.B.
" " " " " "	1	7/044	24	42	10	"	"
Large DB 'C' " " " "	1	7/036	3	28	72	"	"
Forensic Rm DB (off Aux. Rm.)	1	7/029	3	15	320	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
Head Tank Motor - Washdown	1	4	7/044	35	42	150	V.C.	L.C.B.
" " " " " "	1	4	7/044	35	42	130	"	L.C.B.
Workshop Motor	1	3	7/036	24	28	240	"	"
Engine Rm Crane Motor	1	3	7/036	24	28	160	"	"
Fuel Oil Pump Motor	1	2	7/036	20	28	20	"	"
" " " " " "	1	1 1/2	7/029	14.5	15	130	"	"
Zink. Oil Pump	1	2	7/036	19	28	150	"	"
Engine Rm Fan	1	1 1/2	7/029	14.5	15	200	"	"

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.

FURNESS SHIPBUILDING CO. LIMITED

P. J. Glover

Electrical Engineers.

Date 3-5-43

COMPASSES.

Minimum distance between electric generators or motors and standard compass 180'

Minimum distance between electric generators or motors and steering compass 176'

The nearest cables to the compasses are as follows:—

A cable carrying 14 Ampères 7 feet from standard compass on the feet from steering compass.

A cable carrying 14 Ampères on the feet from standard compass 7 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.

J. M. Robertson

Builder's Signature.

Date 3-5-43

Is this installation a duplicate of a previous case Yes If so, state name of vessel M/V "BRITISH VIGOUR"

Plans. Are approved plans forwarded herewith No If not, state date of approval 4-6-42

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 in accordance with the approved plans. The materials used are of good quality and design and the workmanship is good. On completion the equipment was operated under load with satisfactory results and the insulation resistance of each circuit was measured and found good. This equipment is in my opinion suitable for a classed vessel.

Notes
12/5/43

Total Capacity of Generators (2x30) 60 Kilowatts.

The amount of Fee ... £ 28. 10. 0. When applied for, 7/5/1943

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

S. D. Ward
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 14 MAY 1943

Assigned See je machs rpt

511.430—Transfer. (NAME AND PRINTED IN ENGLAND.)

(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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