

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

17 NOV 1948

Received at London Office.....

Date of writing Report... 22-10-48 When handed in at Local Office..... 19..... Port of... LIVERPOOL.

No. in Survey held at... BIRKEN HEAD Date, First Survey... Last Survey... 10-10-1948
Reg. Book. (Number of Visits.....)

59465 on the... S.S. "FORT STEVENS" Tons { Gross... 10639 Net... 6274

Built at... MOBILE, ALA. By whom built... ALABAMA D.D. S.B. Co. Yard No. - When built... 1944

Owners... BRITISH TANKER Co. LD Port belonging to... LONDON.

Electrical Installation fitted by... PRESUMED BY BOLDERS 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... NO

Have plans been submitted and approved... approval System of Distribution... Voltage of supply for Lighting... 120 A.C.

Heating... 220 AC, 440 AC, 115 DC Direct or Alternating Current, Lighting... AC Power... DC If Alternating Current state periodicity... 60V 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... below, are they level compounded under working conditions... -

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... NO Have certificates of test for machines under 100 kw. been supplied... NO and the results found as per rule... - Are the lubricating arrangements and the construction of the generators as per rule... YES

Position of Generators... In main engine room, starting platform.

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... In main engine room, starting platform.

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... Dead-front board, Insulating material appears to be American type Asbestos type of synthetic insulating material is it an Approved Type... - 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... Triple pole circuit breakers for A.C. Generators, D.P. circuit breakers for D.C. Generators.

and for each outgoing circuit... Triple pole or double pole circuit breakers.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... YES Instruments on main switchboard... 14. ammeters... 5 voltmeters... 1 synchronising devices.

For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection... - Earth Testing, state means provided... Cable indicating lamp on A.C. D.C. systems.

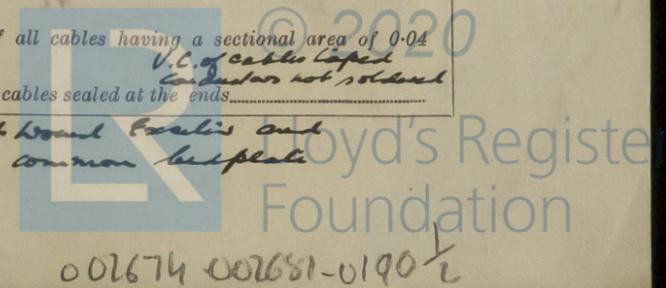
Switches, Circuit Breakers and Fuses, are they as per Rule... YES, are the fuses an approved type... YES, are all fuses labelled as per Rule... YES

If circuit breakers are provided for the generators, at what overload current did they open when tested... 100% 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

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... - are the ends of all cables having a sectional area of 0.04 square inch and provided with soldering sockets... Clamps Are paper insulated and varnished cambric insulated cables sealed at the ends

* Generators sets consist of 400 K.V.A. alternators. 75 Kw. Steam turbine generator and 55 Kw. D.C. generator (Comp. wound) The whole mounted on common bedplate and driven by steam turbines.



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with insulating compound Yes 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 Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected. All cables L.C.A. - on deck, run under gangway in conduits; in accommodation, runs clipped to supporting girders or direct to structure. In machinery spaces, clipped to saddles, base, direct to structure or in chutes.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes. Refrigerated chambers, are the cables and fittings as per Rule 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 and with what material bronze for metal. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Emergency generator + switchboard in compartment on boat deck and method of control Generator starts automatically on failure of main supply.

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 approx 200 amp hours.

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 In main deck space midships - flameproof fittings.

and where are the controlling switches fitted In accommodation outside of space, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of 2, whether fixed or portable Portable, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes, are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. 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 Yes and vertically Yes. 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 No. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule No. 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.	Amps.		Fuel Used.	Flash Point of Fuel.	
MAIN	2	400 (500kVA)	450	642	Steam Turbines			
	2	75	110	682		1200		
	2	55	120	458				
EMERGENCY	1	75 (93.8kVA)	450	120.5	Oil Engine	Deer Oil	above 150° F	
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (least run in cable).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel For Pole.	Sectional Area or No. and Dia. of Strands.				
MAIN GENERATOR	A.C.	400	1	1,000,000	642	725	60 V.C. L.C.A.
"	"	75	1	1,000,000	682	725	60 " "
"	D.C.	55	1	750,000	458	592	60 " "
EMERGENCY GENERATOR	A.C.	75	1	106,000	120	150	30 " "
ROTARY TRANSFORMER: MOTOR							
"	GENERATOR						

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (least run in cable).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS	1	10400	9.3	25	120	V.C.	L.C.A.
Machinery Shop Power Panel 440V	1	66400		83	45	"	"
Galley Power Panel main to 15kVA transformer	1	300,000	145	234	150	"	"
" (220V main from transformer)	1	659,000		392	45	"	"
Slow Connection	1	66400		93	150	"	"
Main from 450V Bus to 15kVA Lighting Transformer	1	450,000		308	15	"	"
" by transformer to 50m Switchboard	1	16500		34	90	"	"
Multicore AC in Bus to Deck Board							

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	33100	15	55	300	V.C.	L.C.A.
NAVIGATION LIGHTS	1	10400	1.5	25	250	"	"
LIGHTING AND HEATING							
Machinery Shop Forecastle Lighting	1	66400	30	93	400	"	"
Prop & Boat Deck Deck Lighting	1	33100	20	55	70	"	"
Upper Deck	1	66400	25	83	100	"	"
Engine Room	1	66400	15	93	40	"	"
Boiler Room	1	26300	12	47	70	"	"
Cable Reels	1	6530	3.4	18	75	"	"
Main Mast	1	6530	13	18	24	"	"
Generator	1	6530	13	18	30	"	"
Battery Charge Generator Room	1	4100	5	15	60	"	"
General Lighting from 120V A.C. Bus	1	4100	4	15	120	"	"
Engine Room Em. by for 15V D.C. Bus	1	10400	15	25	100	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	B.H.P.	CM.					
Engine Room Vent Fans	4	2	1	6530	3.19	18	60	V.C. L.C.A.
Air Compressor	1	6	1	6530	7.3	18	30	"
Water Pumping Gear	1	3	1	6530	4.5	18	20	"
Engine Room Bilge Pumps	2	10	1	10,400	13.7	25	110	"
Main Condenser Circ.	1	125	1	300,000	165	234	60	"
Main Shaft Tanning Gear	1	5	1	6530	8.5	18	100	"
Main Propeller Motor Fan	1	15	1	16500	21	34	75	"
Lat. Oil Service Pump	2	5	1	6530	7.1	18	60	"
Separator	1	2	1	6530	3.19	18	120	"
Hot & Cold Water Pumps	2	50	1	66400	63	93	60	"
Steering Gear Motor	2	30	1	33100	39	55	165	"
Main Condenser Pumps	2	25	1	26300	32	47	50	"
Aux Circulating	1	30	1	33100	39	55	90	"
Cooler	1	10	1	10400	13.7	25	60	"
Fuel Oil	1	7.5	1	6530	10.5	18	45	"
Force Draft Fan	3	50/20	1	66400	63/29	93	80	"
Evaporator Feed Pumps	2	1	1	6530	1.5	14	90	"
Acc. Vent Fans	2	2	1	6530	3.1	18	50	"
Refining Compressor	1	7.5	1	6530	10	18	125	"
Boiler Pump	1	1	1	6530	1.65	14	150	"
Sanitary Pump	1	7.5	1	6530	10.3	18	125	"
Drinking Water Pumps	2	1	1	6530	1.5	14	90	"
Garage Pumps	3	200	1	450,000	243	308	60	"
Stepping	2	50	1	66100	63	93	45	"
Fuel Oil Transfer	2	20	1	16500	25	34	50	"
Salt Water Service	1	10.5	1	6530	10.3	18	150	"
Hot Water Pumps	2	2	1	6530	3	18	90	"

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.

Electrical Engineers. Date

COMPASSES.

Minimum distance between electric generators or motors and standard compass 45 ft

Minimum distance between electric generators or motors and steering compass 45 ft

The nearest cables to the compasses are as follows:—

A cable carrying 1.5 Ampères 10 feet from standard compass 7 feet from steering compass.

A cable carrying 0.2 Ampères 12 feet from standard compass 12 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 _____ degrees on _____ course in the case of the standard compass, and _____ degrees on _____ course in the case of the steering compass.

Builder's Signature. Date

Is this installation a duplicate of a previous case Installation generally similar to other T2 Tankers If so, state name of vessel El. Nono, Homocyclis etc

Plans. Are approved plans forwarded herewith _____ If not, state date of approval _____

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith _____

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical equipment of this vessel appears to be installed in accordance with American practice and with the typical approved plans of T2 Tankers. The details of this report were obtained from these plans and from personal observation. It was noted that lighting sub-circuits are controlled by single pole switches, and portable connections, switches and non-flameproof lighting fittings were installed in bulkheads in main deck spaces. The wiring in this space has now been altered to D.P. control with switches outside of space & all portable connections and switches removed. The generator, motor, control gear, transformers, switches, cables etc have been examined, listed, necessary repairs effected, insulation list carried out and found satisfactory.

The installation appears in good and efficient condition & should not be accepted for classification.

Total Capacity of Generators 985 Kilowatts
 (2 at 400 kva, 2 at 55 x 1.75 kva)
 (The 2.75 kva Exciter are not included in total)

The amount of Fee ... £ 30 : 0 : 0

Travelling Expenses (if any) £ . : .

When applied for, 10 NOV 1948
 When received, _____

L. Haffner
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 16 NOV 1948

Assigned See Minute on Machinery Report

5m.430.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

