

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

27 OCT 1948

Received at London Office

Date of writing Report 18th OCTOBER 1948. When handed in at Local Office 19... Port of GLASGOW

No. in Survey held at GLASGOW Date, First Survey 25th AUGUST Last Survey 12th OCTOBER 1948
Reg. Book. (Number of Visits 5)

56049 on the 'COTTONWOOD CREEK' Tons {Gross... Net...}

Built at ALABAMA By whom built ALABAMA D.D. & S.B.C. Yard No. 2038 When built 1944

Owners BRITISH TANKER CO. LTD Port belonging to LONDON.

Electrical Installation fitted by 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 RADAR. YES

TYPICAL PLANS OF T2 TANKERS

Have plans been submitted and approved APPROVED. System of Distribution LIGHTING (MAIN - 3PH. 3WIRE) Voltage of supply for Lighting 120 A.C. + D.C.

Heating GALLEY W/T - 115 D.C. 220 A.C. Power ALUOAC Direct or Alternating Current, Lighting A.C. + D.C. Power A.C. + D.C. If Alternating Current state periodicity 60 ~ 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 UNDER EMERGENCY CONDITIONS, 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 FORE END MAIN ENGINE ROOM ADJACENT TO 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 TO BE AMERICAN TYPE BONDED FRONY ASBESTOS if of synthetic insulating material is it an Approved Type Is the frame effectually earthed YES INSTRUMENT FUSES ONLY FITTED AT BACK OF BOARD.

Is the construction as per Rule YES, including accessibility of parts YES, absence of fuses on the back of the board 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 ALTERNATORS - TRIPLE POLE CIRCUIT-BREAKERS D.C. GENERATORS - DOUBLE POLE CIRCUIT-BREAKER ALL FITTED WITH OVERLOAD TRIPS ON EACH LEG.

and for each outgoing circuit TRIPLE POLE OR DOUBLE POLE CIRCUIT-BREAKERS OR DOUBLE POLE SWITCHES.

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 EARTH INDICATING LAMPS ON A.C. AND D.C. SYSTEMS.

Switches, Circuit Breakers and Fuses, are they as per Rule TYPE, are the fuses an approved type TYPE, 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 NOT 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 AMERICAN STANDARD TYPE.

Cables, are they insulated and protected as per the appropriate Tables of the Rules CABLES, 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 0.01 square inch and above provided with soldering sockets MECHANICAL CLAMPS Are paper insulated and varnished cambric insulated cables sealed at the ends AT ENDS.

* GENERATING SETS CONSIST OF 400 KW ALTERNATOR; 75 KW. SHUNT WOUND EXCITER AND 55 KW. D.C. COMPOUND WOUND GENERATOR MOUNTED ON COMMON BEDPLATE AND DRIVEN BY STEAM TURBINE.

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. Are cables laid under machines or floorplates. if so, are they adequately protected. Are cables in machinery spaces, galleys, laundries, etc., lead covered. or run in conduit. State how the cables are supported and protected. ALL CABLES L.C.F. - ON DECK, INSTALLED UNDER GANGWAY IN CONDUITS; IN MACHINERY SPACES, CLIPPED TO SADDLES, TRAYS, CLEATS OR DIRECT TO STRUCTURE; IN ACCOMMODATION CLIPPED TO SADDLES OR DIRECT TO STRUCTURE

Are all lead sheaths, armouring and conduits effectually bonded and earthed. 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. where unarmoured cables pass through beams, etc., are the holes effectively bushed. ARMOURED CABLES and with what material. NON-FERROUS MATERIAL Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Emergency Supply, state position. 75KW. EMERGENCY GENERATOR AND SWITCHBOARD AT TOP OF ENGINE ROOM and method of control. GENERATOR ENGINE STARTS AUTOMATICALLY ON FAILURE OF MAIN SUPPLY Navigation Lamps, are they separately wired. controlled by separate double pole switches. and fuses. Are the switches and fuses in a position accessible only to the officers on watch. is an automatic indicator fitted. Secondary Batteries, are they constructed and fitted as per Rule. are they adequately ventilated. what is the battery capacity in ampere hours. APPROXIMATELY 200 AMP.HR.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. if so, how are they protected. IN FLAMEPROOF ENCLOSURES OR ORDINARY FITTINGS OUTSIDE COMPARTMENTS. and where are the controlling switches fitted. IN ACCOMMODATION, are all fittings suitably ventilated. are all fittings and accessories constructed and installed as per Rule. Searchlight Lamps, No. of 2, whether fixed or portable. PORTABLE, are their fittings as per Rule. Heating and Cooking, is the general construction as per Rule. are the frames effectually earthed. are heaters in the accommodation of the convection type. NONE Motors, are all motors constructed and installed as per Rule. STANDARDS and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil. 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. 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. Lightning Conductors, where required are they fitted as per Rule. 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. AMERICAN 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. are they suitably stored in dry situations. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampres.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	400 (500KVA)	450	642	1200	STEAM TURBINE		
	2	75	110	682	1200			
	2	55	120	458	1200			
EMERGENCY	1	75 (93 KVA)	450	120.5	720	OIL ENGINE	OIL ABOVE 150°F	
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead from bottom feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. CIRC. MILS.	In the Circuit.	Rule American Practice.			
MAIN GENERATOR	400	1	1,000,000	642	725	40	V.C.	L.C.F.
" " EQUALISED	75	1	1,000,000	682	725	45	V.C.	L.C.F.
	55	1	750,000	458	592	45	V.C.	L.C.F.
EMERGENCY GENERATOR	75	1	1,000,000	120	158	30	V.C.	L.C.F.
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES. In the Circuit.	APPROX. LENGTH (lead from bottom feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. CIRC. MILS.				
AUX. SWITCHBOARDS AND SECTION BOARDS						
SHORE CONNECTION.	1	650,000	392	45	V.C.	L.C.F.
GALLEY POWER MAINS TO 15KVA TRANSFORMER	1	66,400	83	45	V.C.	L.C.F.
MAINS FROM TRANSFORMER	1	300,000	185	234	V.C.	L.C.F.
LIGHTING MAINS TO 15KVA TRANSFORMER	1	66,400	59	83	V.C.	L.C.F.
MAINS FROM TRANSFORMER	1	450,000	214	308	V.C.	L.C.F.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	33,100	15	55	300	V.C.	L.C.F.
NAVIGATION LIGHTS	1	10,400	1.5	25	250	V.C.	L.C.F.
LIGHTING AND HEATING							
MIDSHIP LIGHTING	L3	1	66,400	30	83	V.C.	L.C.F.
POOP DECK ACCOM. LIGHTING	L4	1	66,400	20	83	V.C.	L.C.F.
UPPER DECK ACCOM. LIGHTING	L5	1	66,400	25	83	V.C.	L.C.F.
ENGINE ROOM LIGHTING	L6	1	66,400	15	83	V.C.	L.C.F.
BOILER ROOM LIGHTING	L7	1	26,300	12	47	V.C.	L.C.F.
D.C. MAINS TO MIDSHIPS	DC1	1	33,100	55	400	V.C.	L.C.F.
GYRO	DC2	1	10,400	25	40	V.C.	L.C.F.
ENGINE ROOM EMERGENCY D.C. LIGHTING.		1	10,400	15	25	V.C.	L.C.F.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
MAIN CONDENSER CIRC. PUMP	1	125	1	300,000	160	234	60	V.C. L.C.F.
CARGO PUMPS	3	200	1	450,000	243	308	60	V.C. L.C.F.
STRIPPING PUMPS	2	50	1	66,400	63	83	45	V.C. L.C.F.
FIRE & BUTTERWORTH PUMPS	2	50	1	66,400	60.5	83	60	V.C. L.C.F.
FORCED DRAUGHT FANS	3	50	1	66,400	63	83	80	V.C. L.C.F.
STEERING GEAR MOTORS.	2	30	1	33,100	42.5	55	165	V.C. L.C.F.
HUX. CIRCULATING PUMP.	1	30	1	33,100	39	55	90	V.C. L.C.F.
PROPULSION MOTOR FAN	1	15	1	16,500	21	34	75	V.C. L.C.F.
MAIN CONDENSATE PUMPS.	2	25	1	26,300	32	47	50	V.C. L.C.F.
COMBUSTION CONTROL AIR COMP.	1	15	1	16,500	19	34	80	V.C. L.C.F.
DRINKING WATER PUMP	1	15	1	16,500	19.5	34	90	V.C. L.C.F.
HUX. CONDENSATE PUMP	1	15	1	16,500	19	34	60	V.C. L.C.F.
ENGINE ROOM BILGE PUMPS	2	10	1	10,400	13.7	25	110	V.C. L.C.F.
COOLER CIRCULATING PUMP	1	10	1	10,400	13.7	25	60	V.C. L.C.F.
FUEL OIL CIRCULATING PUMP	1	7.5	1	6,530	10.5	18	45	V.C. L.C.F.
SALT WATER PUMP. SANITARY PUMP	2	7.5	1	6,530	10.3	18	150	V.C. L.C.F.
AIR COMPRESSOR	1	5	1	6,530	6.9	18	30	V.C. L.C.F.
MAIN SHAFT TURNING GEAR	1	5	1	6,530	7.2	18	100	V.C. L.C.F.
LUB. OIL SERVICE PUMPS	2	5	1	6,530	7.2	18	60	V.C. L.C.F.
ENG. ROOM VENT FANS	4	2	1	6,530	3.2	18	60	V.C. L.C.F.
TURBINE TURNING GEAR	1	2	1	6,530	3	18	20	V.C. L.C.F.
LUB. OIL SEPARATOR	1	2	1	6,530	3.1	18	120	V.C. L.C.F.
ACCUM. VENT FANS	2	1.25	1	6,530	2.2	18	50	V.C. L.C.F.
FRESH WATER PUMPS	2	2	1	6,530	3.1	18	90	V.C. L.C.F.
EVAPORATOR FEED PUMP	1	1	1	6,530	1.7	18	90	V.C. L.C.F.
REFRIG. COMPRESSOR	1	7.5	1	6,530	9.8	18	125	V.C. L.C.F.
REFRIG. CIRCULATING PUMP	1	1	1	6,530	1.35	18	150	V.C. L.C.F.

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

Forty Feet

Minimum distance between electric generators or motors and steering compass

Forty Feet

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 .2 Ampères LED INTO feet from standard compass LED INTO 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

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

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

GENERALLY SIMILAR TO OTHER

Is this installation a duplicate of a previous case. T2 TANKERS If so, state name of vessel EL MORRO

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 have been installed in accordance with American practice and with typical plans of T-2 Tankers. The details given in this report were obtained from these plans and from personal observation on board. The lighting sub-circuits are controlled by single pole switches but the original non-flameproof lighting fittings, switches and portable connections have been removed from the centre-castle tweendeck space and have been rewired and flameproof fittings installed. Double-pole switches fitted in accommodation space control these lights. All generators, motors, control gear transformers, switchboards and cables have been examined as far as practicable, tested, necessary repairs carried out and on completion - insulation resistance measured. All found to be in order. Steering gear tested whilst vessel moored to quay. Operation found to be satisfactory.

The electrical installation of this vessel, as now seen, is in safe working condition and, whilst not strictly in accordance with the Society's Rules, is in my opinion such as could be accepted for classification by this Society.

NOTE. A Radar Installation has been fitted on board at this time.

Total Capacity of Generators 985 Kilowatts.

THE 2.75kw. EXCITERS ARE NOT INCLUDED IN TOTAL.

The amount of Fee ... £ 30 : 0 : 26 OCT 1948

Travelling Expenses (if any) £ : : 21 : 10

J. M. Gardiner
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

5m. 4.38—Transfer. (MADE AND PRINTED IN ENGLAND.)

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

GLASGOW 26 OCT 1948



© 2021

Lloyd's Register Foundation