

— T.2. TANKER — G.E. TYPE —

Rpt. 13.

No. 105384

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... JUN 1948

Date of writing Report... 14<sup>th</sup> JUNE 1948... When handed in at Local Office... 15 JUN 1948... Port of... NEWCASTLE-ON-TYNE

No. in Survey held at... NORTH SHIELDS... Date, First Survey... 23/4/48... Last Survey... 11/6/48... 19...  
Reg. Book... 24063... on the... S.S. "FORT FREDERICA"... (Number of Visits... 10...)

Tons... Gross 10672... Net 6322... When built... 1945

Built at... PORTLAND OREGON... By whom built... KAISER Co. Inc... Yard No... —... Owners... BRITISH TANKER Co... Port belonging to... LONDON

Electrical Installation fitted by... KAISER Co. Inc... Contract No... —... When fitted... 1945

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... —

Have plans been submitted and approved... No... System of Distribution... THREE WIRE — A.C... Voltage of supply for Lighting... 115

COOKING Heating... 115... Power... 450... Direct or Alternating Current, Lighting... A.C... Power... A.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... —... 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... YES... are shunt field regulators provided... YES... Is the compound winding connected to the negative or positive pole... —

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 ENGINE ROOM

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... NEAR GENERATORS — ON FORWARD END OF MAIN CONTROL 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 FRONTED BOARD... if 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... THREE POLE CIRCUIT BREAKER WITH OVERLOAD RELEASE WITH TIME LAGS ON EACH LEG AND REVERSE CURRENT RELAYS

and for each outgoing circuit... THREE POLE CIRCUIT BREAKER WITH THREE OVERLOADS

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... YES... Instruments on main switchboard... 15

Also 3 WATTMETERS AND 2 - FREQ. METERS... ammmeters... 7... 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 LAMPS

Switches, Circuit Breakers and Fuses, are they as per Rule... YES... are the fuses an approved type... AMERICAN PATTERN... 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... YES / 10%... 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... AMERICAN STANDARDS... 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... CONNECTORS... 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. Yes, if so, are they adequately protected. Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered. Yes or run in conduit. State how the cables are supported and protected. ALL CABLES - LEAD COVERED AND ARMOURD RUN IN "U" BRACKETS.

Are all lead sheaths, armouring 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. No UNARMOURD CABLES ON SHIP. and with what material. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes. Emergency Supply, state position. IN SEPERATE HOUSE ON POOP

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. 56.

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 - "WIGAN" PATTERN.

and where are the controlling switches fitted. IN ACCOMMODATION - MIDSHIPS IN ALLEYWAY, are all fittings suitably ventilated. Yes, are all fittings and accessories constructed and installed as per Rule. Yes. Searchlight Lamps, No. of One, 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. 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 the cartridge 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.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	400	450 VOLTS 33	642	1200	TURBINE.		
PROVISION EXCITER.	1	75	60 CYCLES	120.5	900	DIESEL ENGINE	OIL	ABOVE 150° F.
SHIPS AUX EXCITER	2	75	110	682	1200	TURBINE.		
ROTARY TRANSFORMER	2	55	120	458	1200	TURBINE.		

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (feet plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Size of Strands.				
MAIN GENERATOR	400	1	0.7854	642	705	30	V.C. L. + A.
EMERGENCY GENERATOR.	75	1	0.0829	120.5	158	30	V.C. L. + A.
PROVISION GEAR EXCITER.	75	1	0.7854	682	705	35	V.C. L. + A.
SHIPS AUX. EXCITER	55	1	0.5890	458	582	40	V.C. L. + A.
EMERGENCY GENERATOR							
ROTARY TRANSFORMER: MOTOR							
" " GENERATOR							

#### MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Size of Strands.				
AUX. SWITCHBOARDS AND SECTION BOARDS ...						
WORKSHOP POWER SECTION BOARD.	1	0.0082	9.0	25.5	100	V.C. L. + A. 3 CORE.
GALLEY POWER TRANSFORMERS 15KVA.	1	0.0521	34.0	83	150	V.C. L. + A. 3 CORE.
MIDSHIP POWER PANEL.	1	0.0051	4.4	18.5	220	V.C. L. + A. 3 CORE.
LIGHTING TRANSFORMERS.	1	0.0521	34	83	20	V.C. L. + A. 3 CORE.
DOMESTIC REFRIG. PANEL.	1	0.0051	12	18.5	150	V.C. L. + A. 3 CORE.
AUX. SWITCHBOARD.	1	0.013	20	34.5	120	V.C. L. + A. 3 CORE.
EMERGENCY SWITCHBOARD TIE.	1	0.0829	100	113	70	V.C. L. + A. 3 CORE.
SHORE CONNECTION.	1	0.51	-	466	150	V.C. L. + A. 3 CORE.

#### LIGHTING AND HEATING, ETC., CABLES.

WIRELESS 110 VOLTS D.C.	1	0.0261	45.5	72	250	V.C. L. + A. 2 CORE.
NAVIGATION LIGHTS	1	0.0082	2	34	250	V.C. L. + A. 2 CORE.
LIGHTING AND HEATING						
MIDSHIPS AND FOXCASTE LIGHTING.	1	0.0829	50	113	230	V.C. L. + A. 3 CORE.
POOP AND BOAT DECK LIGHTING.	1	0.0261	3	34.5	-	V.C. L. + A. 3 CORE.
UPPER DECK LIGHTING.	1	0.0521	3	83	50	V.C. L. + A. 3 CORE.
ENGINE ROOM LIGHTING.	1	0.0521	25	83	20	V.C. L. + A. 3 CORE.
BOILER ROOM LIGHTING.	1	0.0261	15	46.5	60	V.C. L. + A. 3 CORE.
BATTERY CHARGING.	1	0.003	10	13	40	V.C. L. + A. 3 CORE.
EMERGENCY GENERATOR ROOM LIGHTING.	1	0.003	1	13	20	V.C. L. + A. 3 CORE.

#### MOTOR CABLES.

MAIN SHAFT TURNING GEAR.	1	5	1	0.0051	6.9	18.5	110	V.C. L. + A. 3 CORE.
COMBUSTION CONTROL COMPRESSOR	1	15	1	0.013	19	34.5	15	V.C. L. + A. 3 CORE.
CARGO PUMP MOTORS	3	200	1	0.3535	249	308	30	V.C. L. + A. 3 CORE.
CARGO STRIPPING PUMP MOTORS	2	50	1	0.0521	63	83	30	V.C. L. + A. 3 CORE.
PUMP ROOM EXHAUST FAN MOTOR	1	1 1/2	1	0.0051	24	18.5	36	V.C. L. + A. 3 CORE.
WIRELESS M/G. 450V. AC / 110V. D.C.	1	7 1/2	1	0.0051	10	18.5	16	V.C. L. + A. 3 CORE.

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
MAIN CIRCULATING PUMP MOTOR	1	125	1	0.2356	156	234	90	V.C. L. + A. 3 CORE.
FINE AND BUTTERWORTH PUMP MOTORS	2	50	1	0.0521	63	83	130	V.C. L. + A. 3 CORE.
STEERING GEAR MOTORS	2	30	1	0.0261	38	54.5	150	V.C. L. + A. 3 CORE.
LATHE MOTOR.	1	2	1	0.0051	3.1	18.5	10	V.C. L. + A. 3 CORE.
DRILL MOTOR.	1	1	1	0.0051	1.7	18.5	20	V.C. L. + A. 3 CORE.
GRINDER MOTOR.	1	3	1	0.0051	4.4	18.5	20	V.C. L. + A. 3 CORE.
MAIN CONDENSATE PUMP MOTORS.	2	25	1	0.0261	32	46.5	60	V.C. L. + A. 3 CORE.
AUX. CIRC. PUMP MOTOR.	1	30	1	0.0261	38	54.5	80	V.C. L. + A. 3 CORE.
AUX. CONDENSATE PUMP MOTOR.	1	15	1	0.013	19	34.5	70	V.C. L. + A. 3 CORE.
COOLER CIRC. PUMP MOTOR.	1	10	1	0.0082	13	25.5	65	V.C. L. + A. 3 CORE.
FUEL OIL TRANSFER PUMP MOTOR.	1	20	1	0.013	26	34.5	45	V.C. L. + A. 3 CORE.
FUEL OIL SERVICE PUMP MOTORS.	2	7.5	1	0.0051	10	18.5	50	V.C. L. + A. 3 CORE.
LUB. OIL SERVICE PUMP MOTOR.	1	5	1	0.0051	6.9	18.5	60	V.C. L. + A. 3 CORE.
LUB. OIL SEPERATOR PUMP MOTOR.	1	2	1	0.0051	3.1	18.5	90	V.C. L. + A. 3 CORE.
FORCED DRAUGHT FAN MOTORS.	3	50	1	0.0521	63	83	170	V.C. L. + A. 3 CORE.
EVAPORATOR FEED PUMP MOTOR.	1	1	1	0.0051	1.7	18.5	90	V.C. L. + A. 3 CORE.
AFT ACCOMM. VENT FAN MOTORS	2	1 1/2	1	0.0051	24	18.5	150	V.C. L. + A. 3 CORE.
FRESH WATER PUMP MOTORS.	2	2	1	0.0051	3.1	18.5	110	V.C. L. + A. 3 CORE.
ENGINE + BOILER ROOM VENT FANS.	4	2	1	0.0051	3.1	18.5	150	V.C. L. + A. 3 CORE.
DOMESTIC REFRIG. COMPRESSOR.	1	7 1/2	1	0.0051	10	18.5	150	V.C. L. + A. 3 CORE.
DOMESTIC FRIG. COND. CIRC. PUMP.	1	1	1	0.0051	1.7	18.5	30	V.C. L. + A. 3 CORE.
ATMOSPHERIC DRAIN + RECEIVER PUMP.	1	2	1	0.0051	3.1	18.5	90	V.C. L. + A. 3 CORE.
SHIPS SERVICE AIR COMPRESSOR.	1	5	1	0.0051	6.9	18.5	15	V.C. L. + A. 3 CORE.
SALT WATER SERVICE PUMP MOTOR.	1	7 1/2	1	0.0051	10	18.5	135	V.C. L. + A. 3 CORE.
SANITARY PUMP MOTOR	1	7 1/2	1	0.0051	10	18.5	130	V.C. L. + A. 3 CORE.
ENGINE ROOM BILGE PUMP MOTORS.	2	10	1	0.0082	13	25.5	130	V.C. L. + A. 3 CORE.
DRINKING WATER PUMP MOTOR AFT.	1	1	1	0.0051	1.7	18.5	120	V.C. L. + A. 3 CORE.
MAIN MOTOR COOLING FAN MOTOR.	1	15	1	0.013	19	34.5	65	V.C. L. + A. 3 CORE.
TURBINE TURNING GEAR MOTOR.	1	3	1	0.0051	4.4	18.5	20	V.C. L. + A. 3 CORE.



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.

Minimum distance between electric generators or motors and steering compass.

The nearest cables to the compasses are as follows:—

A cable carrying ..... Ampères ..... feet from standard compass ..... feet from steering compass.

A cable carrying ..... Ampères ..... feet from standard compass ..... 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

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 .....

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith No. ....

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

THE ELECTRICAL INSTALLATION TO THE STANDARDS OF THE AMERICAN BUREAU OF SHIPPING HAS BEEN IN OPERATION FOR APPROXIMATELY 3 YEARS. ALTERNATORS AND EXCITERS EXAMINED. MAIN SWITCHBOARD EXAMINED. ALL MECHANICAL CONNECTORS CHECKED FOR TIGHTNESS. ALL ENGINE MOTORS OPENED UP FOR EXAMINATION AND CLEANED. EMERGENCY GENERATOR AND SWITCHBOARD CLEANED AND OVERHAULED. THE LIGHTING FITTINGS IN THE TWEEN DECK SPACE CENTRE CASTLE HAVE BEEN REPLACED WITH FLAMEPROOF FITTINGS. ALL LIGHTING AND POWER CIRCUITS EXAMINED AND MEGGER TESTED. ALL FOUND SATISFACTORY. D.C. REMOVED IN ITS ENTIRETY FROM THE SHIP. PUMP ROOM CONTROL STATION REPOSITIONED IN THE POOP CROSS ALLEYWAY.

THE MATERIALS USED AND THE WORKMANSHIP ARE SATISFACTORY.

IN MY OPINION, THE ELECTRICAL EQUIPMENT OF THIS SHIP IS IN A SATISFACTORY CONDITION AND ELIGIBLE TO RECEIVE THE SOCIETY'S CLASSIFICATION OF L.M.C. 6.48.

Noted

16.7.48.

Total Capacity of Generators 875 Kilowatts.

The amount of Fee ... £ : : When applied for, .....

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

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 23 JUL 1948

Assigned

See minute on R/L 9