

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 13 MAR 1947

Date of writing Report 22-2-47 When handed in at Local Office 28-2-47 Port of MIDDLESBROUGH

No. in Survey held at MIDDLESBROUGH Date, First Survey 19-11-46 Last Survey 21-2-1947  
Reg. Book. (Number of Visits 13)

3522B on the "CYRENA" Tons { Gross 4373  
Net 2455

Built at MIDDLESBROUGH By whom built SMITHS DOCKS LTD Yard No. 1160 When built 1946

Owners ANGLO-SAXON PETROLEUM CO. LTD. Port belonging to LONDON.

Electrical Installation fitted by R. PICKERSGILL & SONS LTD. Contract No. 1160 When fitted 1946

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

Have plans been submitted and approved YES System of Distribution TWO WIRE INSULATED Voltage of supply for Lighting 110

Heating - Power 110 Direct Alternating Current, Lighting YES Power YES 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 YES Are turbine emergency governors fitted with a

trip switch as per Rule - Generators, are they compound wound YES, are they level compounded under working conditions YES,

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 - Have certificates of

test for machines under 100 kw. been supplied YES and the results found as per rule YES Are the lubricating arrangements and the construction

of the generators as per rule YES Position of Generators ARRANGED FORE AND AFT ON STARBOARD SIDE

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 ON STARBOARD SIDE ON PLATFORM ABOVE

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 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 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 DOUBLE POLE

DOUBLE THROW QUICK BREAK SWITCH AND DOUBLE POLE FUSES.

and for each outgoing circuit DOUBLE POLE, DOUBLE THROW QUICK BREAK KNIFE SWITCH AND DOUBLE

POLE FUSES.

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 is the ammeter connected on the pole opposite to the

equaliser connection - Earth Testing, state means provided EARTH LAMPS COUPLED TO EARTH THRO SWITCHES & FUSES.

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 - 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 YES

state maximum fall of pressure between bus bars and any point under maximum load 66 lb., are the ends of all cables having a sectional area of 0

square inch and above provided with soldering sockets YES Are paper insulated and varnished cambric insulated cables sealed at the ends

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Are paper insulated and varnished cambric insulated cables sealed at the ends

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. **YES**, are 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. State how the cables are supported and protected. **CLEATED TO STEEL PLATES AND PERFORATED METAL TRAYS IN ENGINE ROOM.**  
**CLEATED TO WOOD GROUND IN ACCOMMODATION.** (along deck)  
 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. **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 and method of control. **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. what is the battery capacity in ampere hours. **234**  
 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.**  
 and where are the controlling switches fitted. **MIDSHIP ACCOMMODATION AUXILIARY.**, are all fittings suitably ventilated. **YES**, are all fittings and accessories constructed and installed as per Rule. **YES**. Searchlight Lamps, No. of **PERSON**, whether fixed or portable. **CONNECTION PROVIDED**, are their fittings as per Rule. Heating and Cooking, is the general construction as per Rule. 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. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. **YES**. 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 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				WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	Flash Point of Fuel.
		Kilowatts.	Volts.	Amperes.	Revolutions per Min.		
MAIN	2	30	110	272.8	675	STEAM. (1)	HEAVY OIL ABOVE 150°
EMERGENCY							
ROTARY TRANSFORMER							

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel For Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	2 x 30	1	61/003	272.8	288	30/32	VIR.	LCA.
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

#### MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX LENGTH (lead plus return feet).	INSULA- TED 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 ...	1	10/064	61.2	83 ✓	80	VIR.	LCA.
UPPER DECK PORT S1.	1	61/093	251.3	288 ✓	260	VIR.	LCA.
MIDSHIP SWITCHBOARD.	1	10/064	64.6	85 ✓	10	VIR.	LCA.
WORKSHOP S2	1	7/064	24.2	46 ✓	10	VIR.	LCA.
ENGINE & BOILER ROOM S3.	1	7/029	9.7	13 ✓	10	VIR.	LCA.
PANTRY S5.							

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

WIRELESS	S4	1	7/056	17.7	24	150	VIR.	LC.
NAVIGATION LIGHTS	(ALTERNATIVE SUPPLY WIRELESS SECTION BOARD S4)	1	3/056	2.7	10	15	VIR.	LC.
LIGHTING	SHORE CONN. BOX.	1	61/003	200	288	100	VIR.	LC.
UPPER DECK PORT SI TO LOWER DECK AFT S8.	1	7/029	9.7	13	80	10	VIR.	LC.
MIDSHIP SWITCHBOARD TO BRIDGE DECK PORT D2	1	7/036	21.6	24	80	10	VIR.	LC.
MIDSHIP SWITCHBOARD TO BRIDGE DECK STARBOARD D2	1	7/036	21.6	24	80	10	VIR.	LC.
MIDSHIP SWITCHBOARD TO TWEEN DECK STORES D11	1	7/029	9.7	13	20	10	VIR.	LC.
MIDSHIP SWITCHBOARD TO UPPER BRIDGE D12	1	7/036	21.6	24	80	10	VIR.	LC.
MIDSHIP SWITCHBOARD TO NAVIGATION BRIDGE D13	1	7/036	21.6	24	115	10	VIR.	LC.
MIDSHIP SWITCHBOARD TO WHEELHOUSE D14	1	3/056	2.7	10	115	10	VIR.	LC.
MIDSHIP SWITCHBOARD TO FORECASTLE D15	1	7/044	2.0	31	100	10	VIR.	LC.
UPPER DECK PORT SI TO PORT BOAT DECK D1	1	7/029	10.3	15	100	10	VIR.	LC.
UPPER DECK PORT SI TO STARBOARD BOAT DECK D2	1	7/029	10.3	15	100	10	VIR.	LC.
UPPER DECK PORT SI TO UPPER DECK PORT D4	1	7/029	14.5	15	100	10	VIR.	LC.
UPPER DECK PORT SI TO UPPER DECK STARBOARD D5	1	7/029	14.7	15	120	10	VIR.	LC.
MAIN SWITCHBOARD TO UPPER DECK	D5	1	7/029	11.5	15	50	VIR.	LC.
ENGINE & BOILER ROOM LIGHTING	D7	1	7/044	10	31	5	VIR.	LC.
ENGINE & BOILER ROOM LIGHTING	D8	1	7/044	10	31	5	VIR.	LC.
MIDSHIP SWITCHBOARD TO SUEZ CONN. BOX	1	57/072	100	152	150	10	VIR.	LC.

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
				No. in Parallel For Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
GRINDER	WORKSHOP	1	3	1	7/036	20.4	24	80	VIR.	LCA.
DRAW	WORKSHOP	1	3	1	7/036	20.4	24	80	VIR.	LCA.
LATHE		1	2	1	7/029	13.4	15	80	VIR.	LCA.
OIL FUEL PUMP (ENGINE ROOM)		1	1 1/2	1	7/029	10.2	15	80	VIR.	LCA.
MIDSHIP HEATING & VENT FAN.		1	3.75	1	7/026	24.0	24	80	VIR.	LC.
GALLEY FAN.		1	3/4	1	3/036	7.0	10	80	VIR.	LCA.
TURNING GEAR (ENGINE ROOM)		1	10/20	1	37/072	126.4	152	40	VIR.	LCA.
HEATING & VENTILATING APP. ACCOMMODATION.		1	3.75	1	7/036	24.0	24	110	VIR.	LCA.
OIL PURIFIER (FUEL OIL)		1	2	1	7/036	15.0	24	40	VIR.	LCA.
OIL PURIFIER (LUB. OIL)		1	2	1	7/036	15.0	24	45	VIR.	LCA.



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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. 28/2/47

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass. 20 FEET.

Minimum distance between electric generators or motors and steering compass. 20 FEET.

The nearest cables to the compasses are as follows:—

A cable carrying 0.14 Ampères ~~INSIDE~~ standard compass 6 feet from steering compass.

A cable carrying 0.14 Ampères feet from standard compass 5 ~~INSIDE~~ 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 EVERY course in the case of the standard compass, and NIL degrees on EVERY course in the case of the steering compass.

Builder's Signature.

Date 27-2-47

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 3. 7. 1946.

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 AND THE ARRANGEMENTS ARE IN ACCORDANCE WITH, OR EQUIVALENT TO, THOSE SHOWN ON THE APPROVED PLANS AND THE RULES FOR ELECTRICAL EQUIPMENT.

THE MATERIALS USED ARE OF GOOD QUALITY AND THE WORKMANSHIP IS GOOD.

ON COMPLETION THE EQUIPMENT WAS OPERATED UNDER WORKING CONDITIONS

AND THE INSULATION RESISTANCE OF ALL CIRCUITS MEASURED AND FOUND GOOD.

THIS INSTALLATION IS IN MY OPINION SUITABLE FOR A CLASSED VESSEL INTENDED FOR THE CARRIAGE OF PETROLEUM IN BULK.

Total Capacity of Generators 2 x 30 = 60 Kilowatts.

The amount of Fee ... £ 36 : - : When applied for, 11-3-1947.

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

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 11 APR 1947

Assigned

See F.E. rucky. rpt.