

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

9 NOV 1949

Date of writing Report... 3-10-49 When handed in at Local Office... 6-10-49 Port of... Liverpool

No. in Survey held at... Reg. Book... 29036 on the... ss 'TROCHISCUS' Date, First Survey... Last Survey... 19 (Number of Visits.....)

Tons... 10668 Gross... 6319 Net...

Built at... Portland, Dorset By whom built... Harland & Wolff Ltd. Yard No... When built... 1944

Owners... Anglo-Saxon Petroleum Co. Ltd. Port belonging to... London

Electrical Installation fitted by... Assumed to be by Builders 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... Typical 12 Tachometer plans approved System of Distribution... Voltage of supply for Lighting... 220 AC

Heating... 220 AC Power... Direct or Alternating Current, Lighting... A.C. Power... If Alternating Current state periodicity... 60 Hz 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... 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... 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.

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.

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... Best insulating material is used, 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... Triple pole circuit

breakers for A.C. Generators. Double pole circuit breakers for D.C. Generators.

and for each outgoing circuit... Triple 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... Earth 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... Yes 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... are the ends of all cables having a sectional area of 0.04

square inch and above provided with soldering sockets... Are they insulated and varnished cambric insulated cables sealed at the ends... Yes

* Generating sets comprise 1-600 kVA, Alternators, 1-75 kw. Exciter (Shunt Wound) 1-55 kw. D.C. Generators (Comp. Wound) all mounted on common bedplate and driven by steam turbines.

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 are L.C.A. On deck installed under gangway in conduit, in machinery spaces clipped to saddles, bays or 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. 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. Aluminum Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes. Emergency Supply, state position. Emergency generator in compartment in poop. and method of control. Emergency generator in 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. 200 a. h.

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 flameproof fittings.

and where are the controlling switches fitted. in accommodation - outside space. 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. low. 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.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	400 (500/110)	450	642				
	2	75	110	682	1200	Steam Turbine		
	2	55	120	458				
EMERGENCY	1	75 (93.7/110)	450	120.5	1200	Oil Engine	Diesel Oil	Above 150°F
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus main 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.	Per Pole.			
MAIN GENERATOR	400	1	1,000,000	642	725	40	V.C.	L.C.A.
"	75	1	1,000,000	682	725	45	"	"
"	55	1	750,000	458	592	45	"	"
EMERGENCY GENERATOR	75	1	106,000	120.5	150	30	"	"
ROTARY TRANSFORMER: MOTOR								
"								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus main 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.	Per Pole.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
Machine Shop Power Panel (400V)	1	10,400	9.3	25	120	V.C.	L.C.A.
Galley Power (400V Main & 15 KVA Transformer)	1	66,400		83	45	"	"
do (220V Main from Transformer)	1	300,000	185	234	150	"	"
Slow Connection	1	650,000		392	45	"	"
110V from 400V E.M. Bus to 15 KVA T.P. Transformer.	1	66,400		83	180	"	"
110V Transformer E.M. Bus to 120V	1	450,000		308	15	"	"
Electrician's A.C. E.M. Bus to Machinery E.M. Bus	1	16,500		34	80	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	33,100	15	55	300	V.C.	L.C.A.
NAVIGATION LIGHTS	1	10,400	1.5	25	250	"	"
LIGHTING AND HEATING							
Kitchen Forecastle Lighting	1	66,400	30	83	400	"	"
Boat Deck Accommodation	1	33,100	20	55	70	"	"
Upper "	1	66,400	25	83	100	"	"
Engine Room	1	66,400	15	83	40	"	"
Boiler Room	1	26,300	18	47	80	"	"
Boiler Heater	1	6530	3.4	19	75	"	"
Main Motor	1	6530	13	18	24	"	"
" Generator	1	6530	13	18	30	"	"
Battery Blowers, Gen. Room	1	4,100	5	75	60	"	"
Gen. Room Lighting 120V A.C. E.M. Bus	1	4,100	4	15	120	"	"
Eng. Room " 115V D.C. Bus	1	10,400	15	25	100	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Engine Room Vent Fan	4	2	1	6530	3.19	18	60	V.C.
The Compressor	1	8	1	6530	6.97	18	30	"
Boiler Fan	1	2	1	6530	2.9	18	20	"
Eng. Room Bilge Pump	2	10	1	10,400	13.7	25	40	"
Main Condensate Circ. Pump	1	125	1	300,000	174	234	60	"
Main Sludge Pump	1	5	1	6530	8.5	18	100	"
Main Propulsion Motor Fan	1	15	1	16,500	21	34	75	"
Low Oil Services Pump	2	5	1	6530	7.3	18	60	"
" Separator	1	2	1	6530	3.2	18	120	"
Fire Bull's Head Pump	2	50	1	66,400	60.5	83	60	"
Sludge Fan Motor	2	30	1	33,100	48	55	165	"
Main Condensate Pump	2	25	1	26,300	32	47	50	"
Acc.	1	15	1	16,500	19	34	70	"
" Circulating	1	30	1	33,100	39	55	90	"
Boiler " "	1	10	1	10,400	13.5	25	60	"
Fuel Oil Service	2	7.5	1	6530	10	19	80	"
Forward Brangle Fan	3	50	1	66,400	63	83	80	"
Exhaust Fan Pump	1	1	1	6530	1.6	19	130	"
Accommodation Vent Fan	2	125	1	6530	174	234	60	"
Fresh Water Pump	2	2	1	6530	3.1	18	125	"
Refinery Compressor Motor	1	7.5	1	6530	9.9	19	150	"
" Circulating Pump	1	1	1	6530	1.5	18	125	"
Sanitary Pump	1	7.5	1	6530	10.3	19	125	"
Distilling Water Pump	2	1	1	6530	1.6	19	90/200	"
Large " "	3	200	1	450,000	243	308	60	"
Slipping " "	2	50	1	66,400	63	83	45	"
F.O. Transfer	2	20	1	16,500	25	34	50	"

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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

COMPASSES.

Minimum distance between electric generators or motors and standard compass

40 ft.

Minimum distance between electric generators or motors and steering compass

40 ft.

The nearest cables to the compasses are as follows:—

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

A cable carrying 0.2 Amperes 10 feet from standard compass 10 feet from steering compass.

A cable carrying Amperes 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? 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

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

equipment of this vessel appears to have been installed in accordance with American practice & the typical approved plans. The details of this report were obtained from these plans and personal observation. Number of repairs and alterations have been effected including installation of flameproof fittings in engine room, removal of remote control equipment for cargo pumps etc from position near pump room skylight to new position in poop, pilot light circuits for engine room auxiliary motion altered to comply with Circular 1904, and also connected to a 24 Volt supply. The generator, motor, control gear, transformer, switch gear gear, cables etc have been examined & tested, necessary repairs effected, insulation test carried out and found satisfactory.

The equipment appears to be in good efficient condition & although not strictly in accordance with the Society's Rules, it is in my opinion, eligible to be accepted for classification.

Total Capacity of Generators 985 Kilowatts.

(2 at 400, 2 at 55 and 1 at 75 H.P.s. The 2 at 75 H.P.s. are not included in total)

The amount of Fee £ 30 : 0 : 0

When applied for,

When received,

Travelling Expenses (if any) £ :

Committee's Minute

LIVERPOOL - 8 NOV 1949

Assigned

See Minute re Machinery Rpt

Surveyor to Lloyd's Register of Shipping.



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