

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 28 JUL 1948

Date of writing Report... 21. 6. 48 When handed in at Local Office... 19... Port of... Liverpool

No. in Survey held at... 87543 on the... s.s. "THELIDOMUS" Date, First Survey... 14/6/48 Last Survey... 1948 (Number of Visits...)

Tons { Gross 10643 Net 6803

Built at... Portland. By whom built... Kaiser Co. Inc. Yard No... When built... 1944

Owners... Anglo Saxon Petroleum 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 Sub.Sig... No

Have plans been submitted and approved... System of Distribution... Voltage of supply for Lighting... 120 AC.

Heating... Power... Direct or Alternating Current, Lighting... AC. Power... AC. 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 at steering 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 at steering 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... Insulation material appears to be American Ebonite type 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... 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 breaker

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... 12

ammeters... 5 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... Based indicating lamps on D.C. and A.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... 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 paper insulated and varnished cambric insulated cables sealed at the ends... Yes

* Generating sets consist of 400 KVA Alternator; 75 kW. Shunt wound exciter and 55 kW compound wound generator, all mounted on common bedplate and driven by steam turbine.

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, installed under gangway in conduits; in machinery spaces clipped to saddles, clats, bays, or direct to structure; in accommodation etc., 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. Lead from material. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes. Emergency Supply, state position. Emergency generator and switchboard in compartment on poop and method of control. Emergency switchboard interconnected with main switchboard through 5% switch. 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. hr.

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 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. None. 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. None and vertically. None. 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. None. 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	400 (500/VA)	450	642	1200	Steam Turbines		
	2	75	110	682	"			
	2	55	120	458	"			
EMERGENCY	1	75 (93.7 KVA)	450	120.5	"	Oil Engine	Dist. Oil	Above 150°F
ROTARY TRANSFORMER	1	50 (KVA 62.5)	450	80	3600	Steam Turbine		

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus cable 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	400	1	1000000.	642	725	40	V.C.	L.C.A.
" " EQUALISER	75	1	1000000.	682	725	45	"	"
	55	1	750000	458	592	45	"	"
Port Generator.	50	1	664000	80	83	120	"	"
EMERGENCY GENERATOR	75	1	191093	120	118	20	Rubber	L.C.B.
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

* EXCITERS FOR PROPULSION UNITS.

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus cable 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.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
Machine Shop Power Panel (440 V.)	1	10400	9.3	25	120	V.C.	L.C.A.
Galley Power (440 V. Main & 15 KVA Transformer.)	1	66400		83	85	"	"
" " (220 V. Main from Transformer)	1	300000.	185	234	160	"	"
Shore Connection	1	650000.		392	45	"	"
Main from 440 V. Ena. Rm. & 15 KVA 240 V. Transformer.	1	66400		83	180	"	"
" " 240 V. Transformer & Ena. Switchboard (220 V.)	1	450000.		308	15	"	"
Electrician's A.C. Box Rm. to Machinery Sect. Bd.	1	16500		34	80	"	"

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							
Mudship - Forecastle Lighting	1	66400	30	83	400	"	"
Prop. Boat & Accommodation Lighting	1	33100	20	55	70	"	"
Upper Deck	1	66400	25	83	100	"	"
Engine Room	1	66400	15	83	40	"	"
Boiler Room	1	26300	12	47	80	"	"
Cable Station	1	6530	3.4	18	75	"	"
Main Motor " " " "	1	6530	13	18	24	"	"
Generator " " " "	1	6530	13	18	30	"	"
Belling Chimes Generator Ena.	1	4100	5	15	60	"	"
Generator Ena. Rm. Rtg. from 120 V. A.C. En. Rm.	1	4100	4	15	120	"	"
Engine Ena. Rm. Rtg. from 115 V. D.C. Rm.	1	10400	15	25	100	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Eng. Room Vent. Fan	4	2	1	6530	3.19	18	60	V.C. L.C.A.
Air Compressor	1	5	1	6530	7.2	18	30	"
Exhaust Turning Gear	1	3	1	6530	4.5	18	20	"
Eng. Rm. Bilge Pumps	2	10	1	10400	13.7	25	110	"
Main Condenser Circulating Pump	1	125	1	300000	155	234	60	"
Main Shaft Turning Gear	1	5	1	6530	8.5	18	100	"
Main Propulsion Motor Fan	1	15	1	16500	21	34	75	"
Dist. Oil Service Pump	2	5	1	6530	7.1	18	60	"
" " Separator	1	2	1	6530	3.19	18	120	"
Fine & Bulbocord Pump	2	50	1	66400	63	83	60	"
Sluicing Gear Motor	2	30	1	33100	39	55	165	"
Main Condensate Pump	2	25	1	26300	32	47	50	"
Dist. Circulating " "	1	30	1	33100	39	55	90	"
" Condensate " "	1	15	1	16500	21	34	60	"
Cooling Circulating " "	1	10	1	10400	13.7	25	60	"
Fuel Oil " "	1	7.5	1	6530	10.5	18	45	"
Fine & Bulbocord Pumps	3	50	1	66400	63	83	80	"
Evaporator Feed Pumps	2	1	1	6530	1.5	18	90	"
Accumulation Vent. Fans	2	2	1	6530	3.1	18	50	"
Fresh Water Pumps	2	2	1	6530	3	18	90	"
Refig. Compressor.	1	7.5	1	6530	10	18	125	"
" Bisc. Pump.	1	1	1	6530	1.55	18	150	"
Sanitary Pump.	1	7.5	1	6530	10.3	18	125	"
Dist. Water " "	2	1	1	6530	1.5	18	200	"
Bergo " "	3	200	1	450000	243	308	60	"
Sluicing " "	2	50	1	66400	63	83	45	"
Fuel Oil Service Pump.	2	20	1	16500	25	34	50	"
Dist. Water Service Pump.	1	10.5	1	6530	10.8	18	150	"

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 7.5 Ampères 10 feet from standard compass 7 feet from steering compass.

A cable carrying 0.2 Ampères 40 ft feet from standard compass 40 ft 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

If so, state name of vessel

Elbe River Tugboat

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 the typical plans of T2 Tankers. The details given in this report were obtained from these plans and from personal observation on board. It was noted that lighting circuits are controlled by switch pole switches and portable connections, switches and non-flameproof lighting fittings installed in Cabincastle were deck space. The wiring in this space has now been altered to D.P. control with switches outside of space and all portable connections removed. The 75 kw. A.C. Emergency generator has been installed & connected at this time. The generator, motor, control gear, transformer, switchboards, cables etc., have been examined, necessary repairs carried out, insulation test carried out and found satisfactory. The installation appears in good sufficient condition & whilst not strictly in accordance with the Society's Rules, it is, in my opinion, eligible to be accepted for classification.

Total Capacity of Generators 1035 Kilowatts

(2 x 400 kw, 2 x 55 kw, 1 x 75 kw, 1 x 50 kw)
The 2.75 kw generator is not included in total

The amount of Fee £ 30

When applied for, 20 JUL 1948

Travelling Expenses (if any) £

When received, 19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

LIVERPOOL 27 JUL 1948

Assigned

See Minutes on Report 9



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