

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 11 APR 1947

Received at London Office.....

Date of writing Report... 20-3-47... When handed in at Local Office... 1-4-47... Port of... Belfast

No. in Survey held at... Belfast... Date, First Survey... 7 Nov. 1946... Last Survey... 27-3-1947
Reg. Book. (Number of Visits... 15...)

87902 on the MV "LINGULA" Tons { Gross 6220 Net 3600

Built at... Belfast... By whom built... Harland & Wolff Ltd... Yard No... 1347... When built... 1946-7

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

Electrical Installation fitted by... Harland & Wolff Ltd... Contract No... 1347... When fitted... 1947

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... yes... System of Distribution... Two Wire... Voltage of supply for Lighting... 110

Heating... no... Power... no... Direct or Alternating Current, Lighting... Direct... 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... no... 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... none... 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... Motor Room Starboard

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... Motor Room Platform Starboard

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 (Black)... 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...

300 Amp Double Pole Change Over Switches with 300 Amp fuses on each Pole

and for each outgoing circuit... Double Pole Change Over Switches with Fuse on each Pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... yes... Instruments on main switchboard... 2

ammeters... 2... 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... 2 Lamp System with 2 way D.P Selector Switch

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

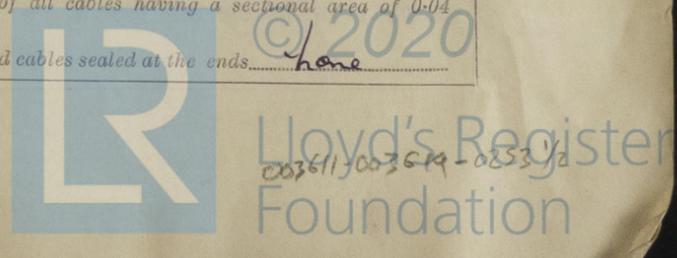
protection devices connected on the pole opposite to the equaliser connection... -... have they been tested under working conditions, and at what current

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... -

state maximum fall of pressure between bus bars and any point under maximum load... 4.5V... are the ends of all cables having a sectional area of 0.04

square inch and above provided with soldering sockets... yes... Are paper insulated and varnished cambric insulated cables sealed at the ends... none



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. Yes, if so, are they adequately protected. Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered. Yes *Pyrotex* of *run-in-conduit*. State how the cables are supported and protected. Main Runs (Pyrotex) in inverted h. s. channels under gangways.
Machinery Spaces (Pyrotex) on Perforated Metal Plating
Lighting Cables (Lead covered) clipped to Bulkheads.

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 Bushes. 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. _____, are they adequately ventilated. _____ what is the battery capacity in ampere hours. _____

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weather proof. 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. Home-made Fittings fitted where necessary
 and where are the controlling switches fitted. Non-Dangerous Positions, are all fittings suitably ventilated. Yes, are all fittings and accessories constructed and installed as per Rule. Yes. Searchlight Lamps, No. of 1, whether fixed or portable. Portable, are their fittings as per Rule. Yes. Heating and Cooking, is the general construction as per Rule. _____

are the frames effectually earthed. _____, are heaters in the accommodation of the convection type. _____. 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 _____ 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. _____ Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule. _____ 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. Pyrotex. 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	1	30	110	273	675	Steam Engine		
	1	30	110	273	675	Diesel Engine	Bunker Oil above 150° F.	
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 Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	30	1	0.2	273	296	72	Insulated	Copper Sheathed
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return 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.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS	2	0.15	190	246	450	Insulated	Copper Sheathed
Ship's Mainboard	1	0.045	36	57	140	"	"
Section Box No 1	1	0.04	70	104	140	"	"
" " " 2	1	0.04	44	104	80	"	"
" " " 3	1	0.04	58	104	80	"	"
" " " 4	1	0.04	42	104	60	"	"
" " " 5							

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	0.06	25	135	120	Insulated	Copper Sheathed
NAVIGATION LIGHTS D.B. No. 1	1	0.0045	8	15	140	"	"
LIGHTING AND HEATING Dist Box No 1 (Floodlighting)	1	0.01	5	42	140	"	"
" " " 2	1	0.01	5	42	60	"	"
" " " 3	1	0.01	5	42	60	"	"
" " " 4	1	0.01	5	42	60	"	"
" " " 5	1	0.01	5	42	60	"	"
" " " 6	1	0.01	5	42	60	"	"
" " " 7	1	0.01	5	42	60	"	"
" " " 8	1	0.01	5	42	60	"	"
" " " 9	1	0.01	5	42	60	"	"
" " " 10	1	0.01	5	42	60	"	"
" " " 11	1	0.01	5	42	60	"	"
" " " 12	1	0.01	5	42	60	"	"
" " " 13	1	0.01	5	42	60	"	"
" " " 14	1	0.01	5	42	60	"	"
" " " 15	1	0.01	5	42	60	"	"
" " " 16	1	0.01	5	42	60	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Turning Motor	1	10	1	0.04	80	104	60	Insulated Copper Sheathed
Ventilators	2	4	1	0.045	33	57	120	"
Fuel Oil Pump	1	1.75	1	0.007	14.2	28	120	"
Fuel Oil Purifier	1	2	1	0.007	22	28	40	"
Lathe	1	3	1	0.007	16.8	28	80	"
Drilling Machine	1	2	1	0.007	17.4	28	70	"
Grinding Machine	1	3	1	0.01	16.8	42	60	"
Boat Davits	4	2	1	0.007	16.7	28	140	"
Porty Exhaust Fan	1	0.25	1	0.002	1.9	5	60	"
Galley Exhaust Fan	1	0.25	1	0.002	1.8	5	35	"
" Supply Fan	1	0.25	1	0.002	2.6	5	30	"

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 March 27th '47

COMPASSES.

Minimum distance between electric generators or motors and standard compass 25 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 0.16 Ampères on ~~feet from~~ standard compass 10 feet from steering compass.

A cable carrying 0.16 Ampères 10 feet from standard compass on ~~feet from~~ steering compass.

A cable carrying 40 Ampères 8 feet from standard compass 8 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 any course in the case of the standard compass, and Nil degrees on any course in the case of the steering compass.



Builder's Signature. Date 27. 3. 47

Is this installation a duplicate of a previous case Yes If so, state name of vessel Mr. V^l "Lydia" Linga - "Lepton"

Plans. Are approved plans forwarded herewith No If not, state date of approval 6th February, 1946

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 equipment of this vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. Materials and workmanship are good.

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... £ 36 : - : 9th apr 47 When applied for,

Travelling Expenses (if any) £ - : - :10..... When received.

R. S. Kurchison.
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRL 9 MAY 1947

Assigned Su F.E. mchy. rpt

504 29.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

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