

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

27 MAR 1948

Received at London Office.....

Date of writing Report... 19th FEBRUARY 1948... When handed in at Local Office... 24 FEB 1948... Port of... NEWCASTLE-ON-TYNE

No. in Survey held at WALLSEND-ON-TYNE... Date, First Survey... 15th SEPT. 1947... Last Survey... 10th FEB. 1948
Reg. Book. (Number of Visits... 12...)

34294 on the M.V. "LEMBULUS" Tons { Gross 6502.57 Net 3593.62

Built at WALLSEND-ON-TYNE. By whom built SWAN HUNTER, WIGHAM RICHARDSON LTD. Yard No. 1755 When built 1944/8.

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

Electrical Installation fitted by SWAN HUNTER, WIGHAM RICHARDSON LTD. Contract No. - When fitted 1944/8

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... YES System of Distribution... TWO WIRE - INSULATED Voltage of supply for Lighting... 110

Heating... - Power... 110 Direct or Alternating Current, Lighting... DC Power... DC 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... 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

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... SANDANYO, 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 QUICK BREAK SWITCH WITH A FUSE ON EACH POLE.

and for each outgoing circuit... DOUBLE POLE QUICK BREAK CHANGE OVER SWITCH WITH A FUSE ON EACH POLE.

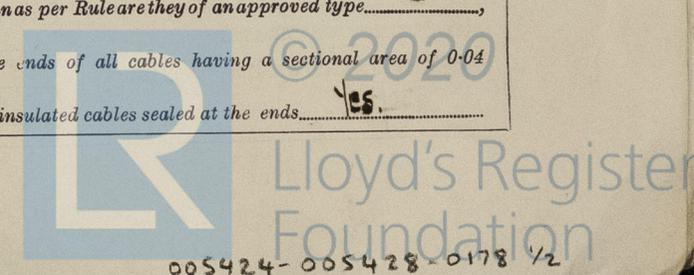
Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... YES Instruments on main switchboard... 2 ammeters... 2 voltmeters... - synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection... - Earth Testing, state means provided... EARTH LAMPS.

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 Volts, 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... YES

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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. 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. MAINS - LEAD COVERED AND ARMOURED CLIPPED TO STEEL TRAY.

ACCOMMODATION CABLES - LEAD COVERED CLIPPED TO WOOD GROUND.

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. —, 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, 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. —

"WIGAN" FLAMEPROOF FITTINGS IN 'TWEEN DECK SPACE

and where are the controlling switches fitted. IN OFFICERS' ACCOMMODATION PASSAGE, 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. —

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. YES

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. 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				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	272	675	DIESEL ENGINE.	OIL	Above 150° F.
	1	30	110	272	675	STEAM ENGINE.		
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	37-083	242	296	50	V.C.	L.C.+A.
" " 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							
ENGINE ROOM MOTORS. SECT. BOARD "K"	1	19-052.	104	104	140	V.C.	L.C.+A.
AFT. ACCOMMODATION LTA. SECT. BOARD "D"	1	19-052.	75	104	224	V.C.	L.C.+A.
ENGINE + BOILER ROOM LIGHTING. SECT. BOARD "E"	1	19-044.	87	84	180	V.C.	L.C.+A.
MIDSHIP SWITCHBOARDS.	1	37-103.	239	239	566	V.C.	L.C.A.+B.
MIDSHIP ACCOMM. LTA. SECT. BOARD "B"	1	7-082.	56	54	72	V.C.	L.C.
GYRO. COMPASS.	1	7-036.	20	28	170	V.C.	L.C.
SHORE CONNECTION BOX	1	37-072.	200	246	—	V.C.	L.C.+A.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7-064.	40	75	128	V.C.	L.C.
NAVIGATION LIGHTS	1	7-044.	30	42	164	V.C.	L.C.
LIGHTING AND HEATING APT. ACCOMM. D.B. D1	1	7-044.	21	42	130	V.C.	L.C.
AFT. ACCOMMODATION LIGHTING. D.B. D2	1	7-044.	26	42	20	V.C.	L.C.
AFT. ACCOMMODATION LIGHTING. D.B. D3	1	7-044.	14	42	130	V.C.	L.C.
AFT. ACCOMMODATION LIGHTING. D.B. D4	1	7-044.	12	42	18	V.C.	L.C.
ENGINE + BOILER ROOMS LIGHTING. D.B. E1	1	7-044.	35	42	100	V.C.	L.C.+A.
ENGINE + BOILER ROOMS LIGHTING. D.B. E2	1	7-044.	35	42	130	V.C.	L.C.+A.
PORTABLE CONNECTIONS APT. D.B. "J"	1	7-044.	28	42	131	V.C.	L.C.+A.
PORTABLE CONNECTIONS MIDSHIP. D.B. "H"	1	7-044.	28	42	72	V.C.	L.C.+A.
MIDSHIP ACCOMMODATION LIGHTING. D.B. "B.1"	1	7-044.	20	42	60	V.C.	L.C.
MIDSHIP ACCOMMODATION LIGHTING. D.B. "B.2"	1	7-044.	20	42	15	V.C.	L.C.
MIDSHIP ACCOMMODATION LIGHTING. D.B. "B.3"	1	7-044.	24	42	32	V.C.	L.C.
MIDSHIP STORES, FORECASTLE + PORTABLE CONNECTIONS. SECT. BOARD "C"	1	7-044.	27	42	20	V.C.	L.C.
MIDSHIP STORES, FORECASTLE + PORT. CONNECTIONS D.B. "C.1"	1	7-044.	7	42	40	V.C.	L.C.
MIDSHIP STORES, FORECASTLE + PORT. CONNECTIONS D.B. "C.2"	1	7-052.	20	54	418	V.C.	L.C.A.+B.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
TURNING GEAR MOTOR.	1	10	1	19-052	90	104	50	V.C.	L.C.+A.
ENGINE ROOM TRAVELLING CRANE.	1	3	1	7-036.	27	28	210	V.C.	L.C.+A.
FUEL VALVE COOLING PUMP	1	2	1	7-036.	18	28	80	V.C.	L.C.+A.
FUEL PRIMING PUMP	1	1.5	1	7-029.	14	15	70	V.C.	L.C.+A.
LUB. OIL PURIFIER.	1	2.5	1	7-036.	24	28	80	V.C.	L.C.+A.
DIESEL OIL PURIFIER.	1	2.5	1	7-036.	24	28	100	V.C.	L.C.+A.
THERMOTANK. APT.	1	4	1	7-044.	36	42	220	V.C.	L.C.+A.
ORBITAL CLARIFIER.	1	7.5	1	7-064.	68	75	90	V.C.	L.C.+A.
ORBITAL PURIFIER.	1	7.5	1	7-064.	68	75	100	V.C.	L.C.+A.
THERMOTANK MIDSHIP.	1	4	1	7-044.	36	42	128	V.C.	L.C.+A.

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.

For SWAN, HUNTER, & WIGHAM, LTD.

[Signature]

Electrical Engineers.

Date 23rd Feb 48

COMPASSES.

Minimum distance between electric generators or motors and standard compass 24 FEET FROM 16" PROPELLOR EXHAUST FAN.

Minimum distance between electric generators or motors and steering compass 22 FEET FROM 16" PROPELLOR EXHAUST FAN.

The nearest cables to the compasses are as follows:—

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

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

[Signature] Builder's Signature. Date 23-2-48.

Is this installation a duplicate of a previous case No If so, state name of vessel: -

Plans. Are approved plans forwarded herewith YES If not, state date of approval: -

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 IN ACCORDANCE WITH THE SOCIETY'S RULES AND REGULATIONS AND THE ARRANGEMENTS ARE IN ACCORDANCE WITH OR EQUIVALENT TO THOSE SHOWN ON THE APPROVED PLANS.

THE MATERIALS USED ARE OF GOOD QUALITY AND THE WORKMANSHIP IS SATISFACTORY. ON COMPLETION THE INSULATION RESISTANCE OF ALL CIRCUITS WAS ABOVE RULE REQUIREMENTS AND THE GENERATORS OPERATED ON LOAD AND GOVERNING TESTS WITH SATISFACTORY RESULTS.

THE EQUIPMENT, AS INSTALLED, IS, IN MY OPINION, SUITABLE FOR A CLASSED VESSEL.

[Signature]
14.4.48.

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... £ 36 : 0 : 00 When applied for, 23 MAR 1948

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

[Signature]
Surveyor to Lloyd's Register of Shipping.

FRI. 30 APR 1948

Committee's Minute

Assigned *[Signature]*

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

