

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report... 29.8.47... 1947... When handed in at Local Office... 5.9.47... 1947... Port of... WEST HARTLEPOOL

No. in Survey held at... WEST HARTLEPOOL... Date, First Survey... 3.4.47... Last Survey... 28.8.47... 1947... Reg. Book... 1945-6 2498

on the... S.T. "ARCTIC VIKING" EX. "ARCTIC PIONEER" Tons {Gross... 501 Net... 189

Built at... SELBY... By whom built... COCHRANE & SONS LTD... Yard No... 1177... When built... 1937

Owners... BOYD LINE LTD... Port belonging to... HULL

Electrical Installation fitted by... EDGAR PHILLIPS & SON... Contract No... When fitted... 1947

Is vessel fitted for carrying Petroleum in bulk... NO... 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 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... 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... 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... ON PLATFORM ON STARBOARD SIDE OF E.R. 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 AFT BULKHEAD STARBOARD SIDE IN E.R. ADJACENT TO GENERATOR, FACING FORWARD.

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... DOUBLE POLE DOUBLE THROW Q.B. KNIFE SWITCH THRO DOUBLE POLE FUSES.

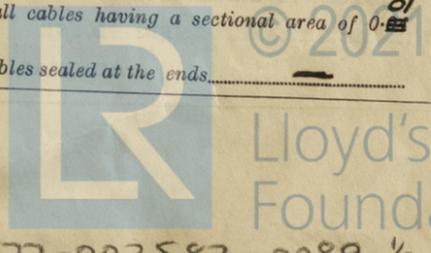
and for each outgoing circuit... DOUBLE POLE SINGLE THROW Q.B. KNIFE SWITCH AND DOUBLE POLE FUSES.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... YES... Instruments on main switchboard... 1 ammeters... 1 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 CONNECTED TO 'E' 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... state maximum fall of pressure between bus bars and any point under maximum load... <6v... are the ends of all cables having a sectional area of 0.5 square inch and above provided with soldering sockets... YES... 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. L.C. AND A CABLES CLIPPED TO STEEL BULKHEADS. LC AND A CABLES IN ACCOMMODATION CLEATED TO WOOD GROUNDS.

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. NO. 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. NO, if so, how are they protected. —

are all fittings suitably ventilated. YES, and where are the controlling switches fitted. —

are all fittings and accessories constructed and installed as per Rule. YES. Searchlight Lamps, No. of —, whether fixed or portable. —, are their fittings as per Rule. —. 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. —. 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. —, are all fuses of the cartridge type. —

are they of an approved type. —. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships. —. Are the cables lead covered as per Rule. —. 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	10	110	91	550	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	10	1	19/083	91	118.	14	V.I.R.	L.C.
" " 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							
MAIN SWITCHBOARD TO WHEELHOUSE	1	7/044	14	31	200	V.I.R.	L.C.+A.
" " " NAVIGATION.	1	7/036	3	24	200	V.I.R.	L.C.+A.
" " " FORECASTLE.	1	7/036	16.5	24	370	V.I.R.	L.C.+A.
" " " FISHROOMS.	1	7/036	8	24	370	V.I.R.	L.C.+A.
" " " AFT. ACC.	1	7/036	12	24	40	V.I.R.	L.C.+A.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS	1	7/044	20	31	170	V.I.R.	L.C.+A.
NAVIGATION LIGHTS	1	7/036	3	24	200	V.I.R.	L.C.+A.
LIGHTING AND HEATING							

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.
LIVER OIL PUMP.	1	1	7/036	10	24	36	VIR LC+A.
BILGE PUMP.	1	1/4	3/029.	2.5	5	48	VIR LC+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.

*A. Roggins*

EDGAR PHILLIPS LTD  
 ELECTRICAL ENGINEERS,  
 WEST HARTLEPOOL.

Electrical Engineers.

Date 30/8/47

COMPASSES.

Minimum distance between electric generators or motors and standard compass 95 FEET.

Minimum distance between electric generators or motors and steering compass 85 FEET.

The nearest cables to the compasses are as follows:—

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

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

FOR WILLIAM GRAY & CO. LTD.,

*W. Gray*

Builder's Signature.

Date 3.9.47.

DIRECTOR & REPAIRS MANAGER.

Is this installation a duplicate of a previous case NO. If so, state name of vessel \_\_\_\_\_

Plans. Are approved plans forwarded herewith NO If not, state date of approval 23. 4. 1947.

Certificates. Are certificates of test for ~~machines engaged on essential services and~~ generator 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 PLAN AND THE SOCIETY'S 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, THE INSULATION RESISTANCE OF ALL CIRCUITS WAS MEASURED AND FOUND GOOD.

THIS INSTALLATION IS IN MY OPINION SUITABLE FOR A CLASSED VESSEL.

IT IS UNDERSTOOD THAT AN AUXILIARY DIESEL GENERATOR IS TO BE INSTALLED AT THE FIRST AVAILABLE OPPORTUNITY.

Total Capacity of Generators 10 Kilowatts.

The amount of Fee ...	£ 1 : 10 :	When applied for, .....19.....
<u>RECONDITION</u>	<u>4 : 4</u>	
Travelling Expenses (if any) £	:	When received, .....19.....

*W. Hills*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_

Assigned See minute on Std 54366.

5m. 4. 30. 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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