

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

31 JUL 1941

Received at London Office

Date of writing Report.....19..... When handed in at Local Office.....18/7/41 Port of Newcastle-on-Tyne
 No. in Survey held at Newcastle-on-Tyne Date, First Survey 28-2-41 Last Survey 16-7-1941
 Reg. Book. Suppl. (Number of Visits.....27.....)
90974 on the S.S. "ENTHERDALE" Tons {Gross 8219
 Net 4719
 Built at Newcastle-on-Tyne By whom built Swan Hunter & Wigham Riddell Port No. 1656 When built 1941
 Owners The Admiralty Port belonging to London
 Electrical Installation fitted by Campbell & Liddell, Esq. Contract No. 1656 When fitted 1941
 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 wires Voltage of supply for Lighting 110
 Heating - Power 110 Direct or Alternating Current, Lighting Ac Power Ac If Alternating Current state frequency - Prime Movers,
 has the governing been tested and found efficient when the whole 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 Lower platform after end of
engin 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 Starboard side of engin room
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 Cumy Soudanox, 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 knife switches and double pole fuses
 and for each outgoing circuit Double pole Quick break changeover knife switches and
double pole fuses
 Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard Two
 ammeters Two voltmeters - synchronising devices. For compound machines in parallel is the ammeter connected to the pole opposite to the
 equaliser connection - Earth Testing, state means provided Earth lamps connected to each main switchgear

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, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. 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 Less than 0.04, 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 exposed ends Yes 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 Main cables run along deck in steel pipes in accommodation, L.C.B. cables clipped 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 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. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Yes and method of control Yes.

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. 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 Yes and where are the controlling switches fitted Yes, 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 Yes in accordance with Admiralty Regulations Yes, 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 Yes. 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. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. 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, with exception of 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 Yes, are they of an approved type Yes. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type 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 megger tested and found satisfactory Yes.

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	25	110	228	600	Steam engine		
"	2	75	220	240	1100	Recip		
EMERGENCY ...	1	10	110	220	600	on supply by 2nd		
ROTARY TRANSFORMER	1	10	110	220	600	will be removed as a test later.		

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 ...	25	1	37/083	228	296	100'	V.C.	L.C.A.B.
" EQUALISER ...								
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" GENERATOR								

MAIN DISTRIBUTION CABLES.								
AUX. SWITCHBOARDS AND SECTION BOARDS								
Sub. main switchboard	1	37/083	183	296	600'	V.C.	L.C.A.B. in pipe	
Upper deck lighting - aft	1	7/064	42	46	110'	V.I.R.	L.C.A.B.	
Lower room.	1	7/064	30	46	20'	V.I.R.	L.C.A.B.	

LIGHTING AND HEATING, ETC., CABLES.								
WIRELESS	1	7/064	15	46	640'	V.I.R.	L.C.A.B. in pipe	
NAVIGATION LIGHTS	1	7/029	4	15	640'	V.I.R.	" "	
LIGHTING AND HEATING								
Large phy. house - aft	1	7/029	3	15	110'	V.I.R.	L.C.A.B.	
Midship's lighting	1	7/029	7	15	46'	V.I.R.	L.C.	
Lower deck lighting	1	7/064	40	46	20'	V.I.R.	L.C.	
Lighting of cargo hold space	1	7/064	23	31	80'	V.I.R.	L.C.	
Boat compartment	1	7/064	10	31	20'	V.I.R.	L.C. in conduit	

The supply to this circuit is taken through a switch which can be locked in a "OFF" position when to avoid a continuing oil flash point below 150°F

MOTOR CABLES.								
ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Van fan - midships	1	3 1/2	1	7/064	26	31	100'	V.I.R. L.C.
" " aft	1	3 1/2	1	7/064	26	46	80'	V.I.R. L.C.A.B.

The supply to the 2 generators is taken from an emergency petrol switchboard mounted in the aft end of the upper room via 37/072 V.C. L.C. cables run in steel pipe. A pair of lines cables feeds each generator.

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.

CAMPBELL & BIRCHWOOD, LTD.

Thos. Meads

Electrical Engineers.

Date *10th July 1941*

COMPASSES.

Minimum distance between electric generators or motors and standard compass..... *210'*

Minimum distance between electric generators or motors and steering compass..... *200'*

The nearest cables to the compasses are as follows:—

A cable carrying *.14* Ampères *inside* feet from standard compass..... feet from steering compass.

A cable carrying *.14* Ampères..... 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 *his* degrees on *any* course in the case of the

standard compass, and *his* degrees on *any* course in the case of the steering compass.

OKAY, HUNTER & CO.

E. J. Dwyer

Builder's Signature.

Date *15th July 1941*

Is this installation a duplicate of a previous case..... *No* If so, state name of vessel.....

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

The electrical equipment of this vessel was installed under special survey. The workmanship and material used are good. The governing, compensating and regulation of the generator sets was tested. The insulation resistance of all circuits measured and found satisfactory.

Additional equipment and plans has been installed by L. Admiralty for the purpose of handling surface craft, and it includes electrically operated gunnery supplies by 2-75kw 220v generators. Additional accommodation has been fitted in L. center-cord space.

In my opinion the electrical equipment might be suitable for a vessel carrying petroleum in bulk flashpoint below 150°F. provided the gunnery and the supply cables to L. center-cord space accommodation be rendered inoperative.

Noted

2.4 18/8/41

Total Capacity of Generators..... *50* Kilowatts.

The amount of Fee ... *See a/c* £ *27* : *10* :
When applied for, *29 JUL 1941*
Travelling Expenses (if any) £ : :
When received,19.....

L. B. Bowen
Surveyor to Lloyd's Register of Shipping.

TUE. 26 AUG 1941

Committee's Minute

Assigned..... *See No. 7E 99657*

2m.10.38.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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