

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 3rd May 1945 When handed in at Local Office 15.5.45 Port of Liverpool-on-Lyne

No. in Survey held at Walsingham Date, First Survey Jan 3rd Last Survey May 9th 1945
 Reg. Book. (Number of Visits 8)

on the S.S. 'OLNA' Tons {Gross 1266
 Net 773

Built at Walsingham By whom built Swan Hunter & Co. Ltd. Yard No. 1689 When built 1945

Owners _____ Port belonging to _____

Electrical Installation fitted by Swan Hunter & Co. Ltd. Contract No. 1689 When fitted 1945

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. Yes

Have plans been submitted and approved Yes System of Distribution Two wire insulated Voltage of supply for Lighting 110

Heating 110 Power 220 Direct Yes Alternating Current, Lighting Yes Power Yes 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 Yes, 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 Yes 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 Engine room, turbine flat, Emergency exit

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 Main: 2nd aft on gallery above turbo-generators. Bow: 2nd fwd. Emergency generator room. Midship: 2nd fwd. Midship access.

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 Intumescent, 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 Turbo-generators: 3 pole CB with 4 pole tips on 2 poles, 4 pole 4 wire tip, 3rd pole for equaliser. 110 volt generators: M/G generator 2 pole CB with 4 pole tips also 4 pole tips for diesel generator and for each outgoing circuit 2 pole CB with 4 pole tips or 2 pole knife switch and 0.5 A fuse, 0.5 A T. knife switches on 110 volt circuits.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard Six ammeters Six voltmeters _____ synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided Earth lamps connected to E through 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 Yes, have they been tested under working conditions, and at what current did they operate Yes 375 A 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 2.3.2 on 220v cable. 2.6.6 on 110v cable. Are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets Yes Are paper insulated and varnished cambric insulated cables sealed at the ends Yes

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. Are cables laid under machines or floorplates, if so, are they adequately protected. Are cables in machinery spaces, galleys, laundries, etc., lead covered or in conduit. State how the cables are supported and protected. M.I.C.C. cables clipped under fire and aft gangway with provision for expansion. L.C.C. cables run in pipe with expansion joints on deck for every supply. L.C.C. M.I.C.C. surface wiring in machinery spaces. L.C. surface wiring in accommodation.

Are all lead sheaths, armouring and conduits effectually bonded and earthed. 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, where unarmoured cables pass through beams, etc., are the holes effectively bushed and with what material. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Emergency Supply, state position and method of control.

Navigation Lamps, are they separately wired, controlled by separate double pole switches and fuses. Are the switches and fuses in a position accessible only to the officers on watch. Is an automatic indicator fitted. 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. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present, if so, how are they protected. Wigan. Flammable vapour fittings installed in inaccessible inaccessible spaces. and where are the controlling switches fitted. In accommodation spaces above, are all fittings suitably ventilated.

are all fittings and accessories constructed and installed as per Rule. Searchlight Lamps, No. of 2x10" whether 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 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil, 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. 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. are they suitably stored in dry situations. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory.

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	550	220	2500	1000	Steam Engines		
	1	60	110	546	600	Steam Engine		
	1	50	110	446	1000	Diesel Engine	Fuel oil	above 150° F.
EMERGENCY	1	50	110	446	1000	Diesel Engine	Fuel oil	above 150° F.
ROTARY TRANSFORMER	1	60	110	546	600	Electric Motor		

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.				
MAIN GENERATORS	2x550	2	4x1/4"	2500	—	32	—	Copper Bar
"		1	4x1/4"	—	—	16	—	Copper Bar
"	60	1	9/11/103	546	738	72	V.C.	L.C.
"	50	1	6/11/103	446	540	240	V.C.	L.C.
EMERGENCY GENERATOR	50	1	6/11/103	446	540	54	V.C.	L.C.
ROTARY TRANSFORMER: MOTOR	91 H.P.	1	37/103	345	885	150	V.C.	L.C.
"		1	9/11/103	546	738	20	V.C.	L.C.

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		Sectional Area or No. and Dia. of Strands.	Sq. ins. or sq. mm.				
AUX. SWITCHBOARDS AND SECTION BOARDS							
Boat Dk. Swbd. Feed From M/G Set / Diesel Set	1	6/11/103	—	540	180	V.C.	L.C.
Boat Dk. Swbd. Feed From Main Switchboard	1	6/11/103	—	540	180	V.C.	L.C.
Boat Dk. Swbd. Feed From Supply to Steam Set	2	0.2	438	24296	24720	M.I.	C.C.
Midship Swbd. Feed From Main Swbd.	1	19/104	89	135	180	V.C.	L.C.
S.B.'A' Upper Dk. Att. Part	1	37/102	240	246	150	V.C.	L.C.
S.B.'B' Top of E.R. Casing Att.	1	19/104	82	135	180	V.C.	L.C.
S.B.'C' Peep Dk. Part	1	0.04	74	104	76	M.I.	C.C.
S.B.'D' Turbo-Generator Flat	1	19/104	130	135	160	V.C.	L.C.
S.B.'E' Bridge Dk. (Off Midship Swbd.)	1	19/105	62	104	210	V.C.	L.C.
S.B.'F' Workshop	1	19/104	67	135	165	V.C.	L.C.
S.B.'H' E.R. Casing Att. (Off Boat Dk. Swbd.)	1	7/104	33	75	75	V.C.	L.C.
S.B.'I' Bridge Dk. (Off Midship Swbd.)	1	19/105	62	104	180	V.C.	L.C.
S.B.'K' Purifier Flat	1	19/105	56	104	120	V.C.	L.C.
S.B.'L' Capt's Cabin (Off Midship Swbd.)	1	19/104	99	135	180	V.C.	L.C.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS
NAVIGATION LIGHTS	D.B.'F' Chart Room	1	19/064	45	135	75	V.C.	L.C.	L.C.
		1	19/064	24	35	75	V.C.	L.C.	L.C.
			7/104			48	V.C.	L.C.	L.C.
LIGHTING AND HEATING	...	Alt. Supply to W/T and to D.B.'F' from Midship Swbd.							
D.B. A1, A2, A3 off S.B.'A'	(each)	1	7/044	25, 21, 120	42	70, 120, 120	V.C.	L.C.	L.C.
Teater off S.B.'A'	(each)	1	7/036	22	28	105	V.C.	L.C.	L.C.
D.B. C1, C2 off S.B.'C'	(each)	1	7/044	28, 24	42	18, 60	V.C.	L.C.	L.C.
D.B. C3, C4 off S.B.'C'	(each)	1	7/105	15, 17	57	180, 210	V.C.	L.C.	L.C.
D.B. D1, D2, D3, D4, D5, D6 off S.B.'D'	(each)	1	0.01	15, 15, 11, 11, 11, 11	42	150, 150, 172	M.I.	C.C.	C.C.
D.B. E1, E2, E3 off S.B.'E'	(each)	1	7/044	26, 39, 35	42	45, 18, 45	V.C.	L.C.	L.C.
D.B. F1 and Pantry Teater off S.B.'E'	(each)	1	7/036	12, 23	28	18, 36	V.C.	L.C.	L.C.
D.B. F2	(each)	1	0.0225	11	75	480	M.I.	C.C.	C.C.
1st Sig. Rele. 2 in No. off S.B.'L'	(each)	1	7/044	18, 75	42	120	V.C.	L.C.	L.C.
Cypr. Compass		1	7/044	20	42	90	V.C.	L.C.	L.C.
Radec		1	7/105	37	57	120	V.C.	L.C.	L.C.
Battery Charging Panel (off Midship Swbd.)		1	7/105	25	57	60	V.C.	L.C.	L.C.
Shore Connection		1	37/072	—	246	360	V.C.	L.C.	L.C.
220 Volt Testing Panel		1	7/044	15	42	450	V.C.	L.C.	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE
ENUMERATED.

	No.	B.H.P.							
Main Circulating Pumps	2	40/90	1	37/103	53/104	385	240/270	V.C.	L.C.
Recd. Draught Fans	3	26	1	19/104	107	135	300/300	V.C.	L.C.
Fire and Bilge Pumps	2	15/27	1	19/104	58/106	135	390/390	V.C.	L.C.
Fresh Water Pump	1	3/4.5	1	7/103	13.6/19.8	28	114	V.C.	L.C.
Forced Lub. Pumps	2	12.5	1	7/105	48.5	57	294/264	V.C.	L.C.
Cooler Circ. Pump	1	5/8	1	7/104	20.7/32.8	42	270	V.C.	L.C.
Turbo-Gen. Circ. Pumps	2	7/9	1	7/104	29.7/37.2	42	129/114	V.C.	L.C.
Main Extraction Pumps	2	13.5	1	7/104	52	75	270/240	V.C.	L.C.
Propeller Motor Fans	2	7.75/15	1	7/104	31/57	75	174/144	V.C.	L.C.
E.R. Vent Fans	4	4.5	1	7/104	37	42	123/84	V.C.	L.C.
Boiler Rm. Vent Fans	2	4.5	1	7/105	37	57	162/186	V.C.	L.C.
Lathe	1	3	1	7/103	25.6	28	30	V.C.	L.C.
Drilling M/c. } off S.B.'C'	1	2	1	7/103	17.6	28	30	V.C.	L.C.
Grinder	1	2	1	7/103	17.6	28	42	V.C.	L.C.
Att. Boat Winches off S.B.'H'	4	2	1	7/104	16.7	42	120/120	V.C.	L.C.
Mid. Boat Winches off S.B.'H'	2	2	1	7/104	16.7	42	120/120	V.C.	L.C.
Lub. Oil Purifiers	2	3	1	7/103	25.1	28	60/60	V.C.	L.C.
Lub. Oil Transfer Pump	1	1	1	7/103	10.5	28	120	V.C.	L.C.
Nel. Exhaust Fan off S.B.'L'	1	1.5	1	7/103	13.4	28	12	V.C.	L.C.
No.3 Thermotank Fan	1	3	1	7/104	26	42	150	V.C.	L.C.
Nel. Supply Fan	1	3	1	7/104	26	42	210	V.C.	L.C.
No.3 Exhaust Fan	1	1.5	1	7/103	13.4	28	150	V.C.	L.C.
Dough Mixer	1	2	1	7/103	17.6	28	150	V.C.	L.C.
Sub-S.B.'s Supply H/W Fans	1	1	1	7/104	22.4	42	24	V.C.	L.C.
Domestic F.W. Pump	1	3/4.5	1	7/104	22.4/29.6	42	135	V.C.	L.C.
Turning Motor	1	10	1	19/104	80	87	120	V.C.	L.C.
No.2 Thermotank Fan	1	4.5	1	7/105	36.5	57	132	V.C.	L.C.
Nel. Thermotank Fan off Mid. Swbd.	1	4.5	1	7/105	36.5	57	108	V.C.	L.C.

220 VOLTS

110 VOLTS

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 RICHARDSON, LTD.

[Signature]

Electrical Engineers.

Date 7th May 1945

COMPASSES.

Minimum distance between electric generators or motors and standard compass 12 feet

Minimum distance between electric generators or motors and steering compass 16 feet

The nearest cables to the compasses are as follows:—

A cable carrying 0.9 Ampères 1 feet from standard compass 8 feet from steering compass.

A cable carrying 0.9 Ampères 8 feet from standard compass 1 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.

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

[Signature]

Builder's Signature.

Date 7.5.45

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 17/6/44

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 under special survey in accordance with the approved plans and modifications thereto recommended by the vessel's commission for Admiralty service. The materials used and the workmanship are good. On completion the equipment was run under working conditions with satisfactory results, the protective devices of the circuit breakers were adjusted and operated and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a closed vessel intended to carry oil having a flash point of less than 150°F.

Noted J.R. 20.6.45

Total Capacity of Generators 1260 Kilowatts.

(Including 150kw. for Excitation at Electric Propulsion Machines)

The amount of Fee £72.10.0

When applied for, 29 MAY 1945

[Signature]

Surveyor to Lloyd's Register of Shipping.

Travelling Expenses (if any) £

When received,

FRI. 6 JUL 1945

Committee's Minute

Assigned See FE machy. rpt.