Rpt. 13.

No. S2285

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

14 JAN 1944

Received at London Office.....

Date of writing Report.....19..... When handed in at Local Office 3.1.1944 Port of Hull.

No. in Reg. Book. Survey held at Beverley & Hull. Date, First Survey 7th Dec/43 Last Survey 31st Dec 1943 (Number of Visits.....11.....)

..... on the H.M.T. "AILSA CRAIG". J. 2725 Tons Gross 452.2 Net 143.98

Built at Beverley By whom built Cook, Welton & Gemmell Yard No. 723 When built 1943

Owners The Admiralty Port belonging to -

Electrical Installation fitted by Wm. Broady & Sons, Ltd. Contract No. ..... When fitted 1943

Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. No E.S.D. Yes Gy.C. No Sub.Sig. No

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Have plans been submitted and approved Yes System of Distribution two wire Voltage of supply for Lighting 110 Heating 110 Power 110 Direct or Alternating Current, Lighting D.C. Power D.C. 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 Admiralty Supply 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, Starboard Side on Platform, 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 Engine Room Starboard Side near generator.

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 Units mounted on framework with mica insulation, plus aux. panel in Syndanyo., 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, with auxiliary board at side for 7½ KW generator.

and for each outgoing circuit Double Pole quick break 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 on the pole opposite to the equaliser connection -. **Earth Testing,** state means provided Lamps coupled to earth via switches and 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 3V, 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 -

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* In machinery spaces etc. L.C. clipped to perforated steel trays or direct to steel ~~wood~~work, in accomodation etc. L.C. clipped to wood battens or direct to woodwork.

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 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* -. **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 ampère 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* Admiralty Pattern Magazine Fittings *and where are the controlling switches fitted* Mess Deck above, *are all fittings suitably ventilated* Yes, *are all fittings and accessories constructed and installed as per Rule* Yes. **Searchlight Lamps,** *No. of* 2-10", *whether fixed or portable* portable, *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* No. **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* Admiralty Supply *Control Gear and Resistances, are they constructed and fitted as per Rule* Yes. **Lightning Conductors,** *where required are they fitted as per Rule* steel masts. **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 Kilowatts.	Volts.	Amperes.	Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. Fuel Used.	Flash Point of Fuel.
MAIN	1	20	115	174	500	Steam Engine		
Aux.	1	7½	110	68	550	" "		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS. No. in Parallel Per Pole.	CONDUCTORS. Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES. In the Circuit.	MAXIMUM CURRENT IN AMPERES. Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
MAIN GENERATOR No.1	20	1	37/.083	174	295	22	V.C.	LC AP.13972
" " EQUALISER No.2	7½	1	19/.064	68	134	50	"	" " " 13975
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR ...								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS. No. in Parallel Per Pole.	CONDUCTORS. Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES. In the Circuit.	MAXIMUM CURRENT IN AMPERES. Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS							
Aft Lighting Engine & Boiler Rms	1	7/.044	20	31	120'	V.I.R.	LC. AP6192A WE
Midships & Forward Lighting	1	7/.044	20	31	160'	"	" " "
D.G.	1	7/.044	18	31	20'	"	" " "

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/.036	15	24	140'	V.I.R.	LC AP6193D WE
NAVIGATION LIGHTS	1	7/.036	3	24	150'	"	" " "
LIGHTING AND HEATING							
Engine & Boiler Rooms.	1	7/.036	10	24	30'	"	" " "
Aft Accomodation Lighting	1	7/.036	10	24	30	"	" " "
" " Heating	1	7/.064	20	46	20	"	" 6191 "
Search Lights	1	7/.044	18	31	150	"	" 6192 "
Forward Lighting (crews)	1	7/.036	15	24	40	"	" 6193 "
" " (officers)	1	7/.044	10	31	20	"	" 6192 "
" " Heating	1	7/.044	25	31	16	"	" " "
Asdic	1	7/.044	14	31	210	"	" " "
R.A.D1A.R.	1	7/1044	25	31	160	"	" " "
FM.7	1	7/.044	10	31	160	"	" " "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
Vent Fans. 5"	3	¼	1	3/.036	2.5	10	25	V.I.R.	LC AP6195A WE
" " 7½"	1	½	1	3/.036	4.5	10	25	"	" " "
" " 12½"	1	1½	1	7/.036	14	24	30	"	" 6193 "
Refrigerator. (D.A.R.)7½cu'	1	½	1	3/.036	5.2	10	20	"	" 6193 "
" " 3½ "	1	½	1	3/.036	5.2	10	40	"	" " "

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.

WM BROADY & SON LTD. BLANKET STREET, HULL. J Buchanan *Electrical Engineers.* *Date* 31·12·43.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 80'0"

Minimum distance between electric generators or motors and steering compass 74'0"

The nearest cables to the compasses are as follows:—

A cable carrying .1 *Ampères* inside *feet from standard compass* 6' *feet from steering compass.*

A cable carrying .25 *Ampères* 6' *feet from standard compass* ~~*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.*

COOK, WELTON & GEMMELL, LTD. A D Campbell General Manager *Builder's Signature.* *Date* 3-1-44

Is this installation a duplicate of a previous case Yes *If so, state name of vessel* "SKOKHOLME"

Plans. *Are approved plans forwarded herewith* No *If not, state date of approval* 19.4.41.

Certificates. *Are certificates of test for motors engaged on essential services and generators forwarded herewith* Admiralty Supply

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 and in accordance with the approved plans and with the specification. The materials used are of good quality and the workmanship is good. On completion the equipment was operated under working conditions with satisfactory results and the insulation resistance of all circuits and apparatus was measured and found good.

This equipment is in my opinion suitable for a classed vessel.

Noted
L.J.
21/1/44.

Total Capacity of Generators 27½ *Kilowatts.*

ADMIRALTY
A/c rendered from London 31.1.44

The amount of Fee: Classification	£21 5 0	When applied for, 13 JAN 1944
Specification	£21 5 0	When received. ....19.....
Travelling Expenses (if any)	£ : :	

A. J. Connell
Surveyor to Lloyd's ~~Register of Shipping.~~

Committee's Minute FRI. 28 JAN 1944

Assigned See Je mach 13

5m.4.38.—Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)