

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report.....19..... When handed in at Local Office.....15 AUG 1941..... Port of.....

No. in Survey held at.....Hull..... Date, First Survey.....17.6.41..... Last Survey.....25.7.19.41.....
Reg. Book. (Number of Visits.....8.....)on the.....H.M.T. INCHCOLM..... Tons { Gross.....452
Net.....142½

Built at.....Beverly..... By whom built.....Cook, Wilson & Gannett..... Yard No.....676..... When built.....1941-7

Owners.....The Admiralty..... Port belonging to.....

Electrical Installation fitted by.....Wm Broady, Sons Ltd..... Contract No..... When fitted.....1941-7

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

Have plans been submitted and approved.....Yes..... System of Distribution.....Parallel - constant pressure..... Voltage of supply for Lighting.....110

Heating.....110..... Power.....110..... Direct or Alternating Current, Lighting.....D.C..... Power.....D.C..... 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.....✓..... are shunt field regulators provided.....Yes..... Is the compound winding connected to the negative or positive pole

Positive..... 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.....✓..... and the results found as per rule.....✓..... Are the lubricating arrangements and the construction

of the generators as per rule.....Yes..... Position of Generators.....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.....Engine room adjacent to 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.....Unbonded on frame work with mica strip insulation..... if of synthetic insulating material is it an Approved Type.....✓..... 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.....

D.P. Switches & fuses.

and for each outgoing circuit.....D.P. Switches & fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule.....Yes..... Instruments on main switchboard.....One

ammeters.....One..... 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.....Megger.

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 ✓, have they been tested under working conditions ✓. 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 exposed 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 Yes, 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 Clipped to trays or bulkheads.

Cables run in solid aluminium conduit in bulkhead magazine spaces.

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 Cad.. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position C/W 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 C/W. 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.

Special Admiralty Lamps in Magazine with cables in conduit

and where are the controlling switches fitted Starboard mess, adjacant, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of One 20", whether fixed or portable fixed, 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 ✓ 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 ✓.

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 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 ✓, are all fuses of the cartridge type ✓, are they of an approved type ✓. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type ✓. 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.

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	One	15	110	136	500	See in Spec.	✓	✓
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	15	One	37/072	136	152	18	V.I.R.	L.C.
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS	DG	One	7/044	30	31	150	V.I.R.	L.C.
Navigation			7/036	15	24	150		
Wireless				25		135		
Search lights				15		150		
Starboard lighting			7/044	23	31	150		
Starboard				29		120		
Starboard Radiator				18		150		
Starboard				27		120		
Starboard								
Starboard connection			37/072	136	152	70		

LIGHTING AND HEATING, ETC., CABLES.

Navigation	One	1/044	1.5 max	5	240 max	V.I.R.	L.C.
NAVIGATION LIGHTS		7/0076		10	90		Tough rubber sheathing.
LIGHTING AND HEATING							Some cases: Photo Br. Banding
Starboard lighting		1/044	3 max	5	140 max		
Radiators + Starboard		3/036	9	10	20		
Starboard + projector			10		60		
Starboard			3		60		

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.
			No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
7 1/2" Vent Fan	1	.5	One	3/036	4	10	50	V.I.R.	L.C.
5" " "	2	.2			2		100		
3 1/2 cu ft Refrigerator	1	.5		1/044	4	5	20		

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.

ENGLAND

Electrical Engineers.

Date 14. 8. 41.

COMPASSES.

Minimum distance between electric generators or motors and standard compass

Minimum distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:-

A cable carrying Ampères feet from standard compass feet from steering compass.

A cable carrying Ampères 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

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

The maximum deviation due to electric currents was found to be degrees on course in the case of the

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

Builder's Signature.

Date

Is this installation a duplicate of a previous case

Yes.

If so, state name of vessel

H.M.T. BIRCH

with minor additions

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

This installation has been fitted on board in accordance with the approved Admiralty plans & requirements & the Society's Rules.

The workmanship & materials are good & when subjected to the tests required by the Admiralty & as prescribed in the Rules & also when tried under working conditions the installation was found satisfactory in every respect.

Noted

L.H.

19/8/41

Total Capacity of Generators 15 Kilowatts.

The amount of Fee ... £ 15.00 : When applied for, 14.8.19.41

Travelling Expenses (if any) £ : : When received, 19.41

TUE. 19 AUG 1941

Committee's Minute

Assigned

See machine FE. rpl.

L. H. P. Colman

Surveyor to Lloyd's Register of Shipping.