

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

23 JUL 1942

Received at London Office.

Date of writing Report..... 29..... When handed in at Local Office..... 29..... Port of Hull

No. in Survey held at Selly Hull Date, First Survey 5.6.42 Last Survey 29.6.42
Reg. Book. (Number of Visits.....)

on the HMT "GRAYLING" Tons {Gross... 387
Net... 127

Built at Selly By whom built Cochran Sons Ltd. Yard No. 1245 When built 1942

Owners The Admiralty Port belonging to.....
Electrical Installation fitted by Wm Broady Son Contract No. When fitted 1942

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 2 wire Voltage of supply for Lighting 110

Heating 110 Power 110 Direct or Alternating Current, Lighting DC Power 110 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 , 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 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 (Starboard side)

....., 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)

adjacent to 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 Units mounted 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 and fuses

and for each outgoing circuit D.P. switches and fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule 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 and switches

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 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 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 Clipped to steel trays or bulkheads
Cables run in solid drawn conduit in bunkers and magazine spaces
D.G. cable run in special steel tube in bunkers with gland and drainage arrangement.
 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 None
 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 Yes, are they adequately ventilated Yes
 what is the battery capacity in ampere hours 140
 W/T only

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 Special Admiralty pattern lamps in magazine and spirit rooms
 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 One 20" Fixed 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 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 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 None. 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	One	15	110	136	500	Steam Engine	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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 For 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	72	VIR	L.C. AP 6187
" " EQUALISER								
SHORE CONNECTION						36		
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 For Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
Forward Radiator	One	7/064	44	46	110	VIR	L.C. - AP 6191A
Aodic	"	7/044	14	31	190	"	" " 6192A
D.G.	"	7/027	25	31	-	"	" " "
Aft lighting and Bee Circuits	"	7/044	29	31	24	"	" " "
Forward lighting	"	"	31	31	180	"	" " "
W/T	"	7/036	25	24	110	"	" " 6193A
20" Searchlight	"	"	10	24	115	"	" " "
6" "	"	7/029	3	31	110	"	" " 6194A
Navigation	"	7/036	19	24	110	"	" " 6193A

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		In the Circuit.	Rule.			
WIRELESS						
NAVIGATION LIGHTS	One	1/044	1.5	5	220	VIR L.C. AP 6196A
LIGHTING AND HEATING	followed by	7/0076	MAX	10	MAX	TR5 7988A
Sub-circuit Lighting	"	1/044	3	5	70	L.C. AP 6196A
Radiators	"	3/036	9	10	80	" " 6195A

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.					
Ventilating fan 5"	One	3/036	-	10	12	VIR	L.C. AP 6195A
" 7 1/2"	"	7/029	-	31	"	"	" 6194A
Refrigerator 3 1/2 HP.	"	3/036	-	10	"	"	" 6195A
" 7 1/2"	"	"	-	10	"	"	"

These motors have not been supplied but cables have been fitted to section boxes to enable for motors to be wired and connected later if required. Refrigerator not supplied but wiring and plugs fitted and ready for installation of refrigerator.

GRAYLING

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
25
HULL

Electrical Engineers.

Date 16. 7. 42

COMPASSES.

Minimum distance between electric generators or motors and standard compass 6ft

Minimum distance between electric generators or motors and steering compass 5ft

The nearest cables to the compasses are as follows:-

A cable carrying .2 Ampères leads into feet from standard compass 8 feet from steering compass.

A cable carrying .4 Ampères 1.5 feet from standard compass 6 feet from steering compass.

A cable carrying .2 Ampères 3 feet from standard compass 8 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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

W. COCHRANE & SONS, LTD.

W. Gray

Builder's Signature.

Date

DIRECTOR

Is this installation a duplicate of a previous case Yes If so, state name of vessel Whiting

Plans. Are approved plans forwarded herewith No If not, state date of approval 16. 9. 41

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

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

This Electrical Installation has been fitted on board under Special Survey in accordance with the approved plans, the Rules and the Specification.

The workmanship and materials are good and when tried under working conditions and tested as required by the Admiralty and the Rules the installation was found satisfactory in every respect.

HOLID
KIN
27. 7. 42

Total Capacity of Generators 15 Kilowatts.

The amount of Fee ... £ 30: -

When applied for, 22 JUL 1942

Travelling Expenses (if any) £ :

When received, 19.....

W. S. Shields

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 28 JUL 1942

Assigned

See Sub 2C 51681

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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