

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

APR 25 1940

Received at London Office.....

Date of writing Report 6th April, 1940, When handed in at Local Office 2 APR 1940 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 5th Dec, 1939 Last Survey 5th April, 1940  
Reg. Book. Supp. (Number of Visits 2)

39275 on the S.S. "HARPAGUS" Tons { Gross 5173  
Net 2980

Built at Sunderland By whom built Barton & Co, Ltd. Yard No. 282 When built 1940

Owners Bowland S.S. Co. Ltd. Port belonging to London

Electrical Installation fitted by Barton & Co, Ltd. Contract No. 282 When fitted 1940

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

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

Heating 110 Power 110 Direct Alternating Current, Lighting Yes Power Yes 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 Yes Generators, are they compound wound Yes, are they level compounded under working conditions Yes,

if not compound wound state distance between generators Yes and from switchboard Yes 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

Positive 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 Main: Engine room starboard side aft

Auxiliary - Engine, is the ventilation in way of generators satisfactory Yes are they clear of inflammable material Yes, if situated

room situated in mess at forward level near unprotected combustible material state distance from same horizontally Yes and vertically Yes, 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: Engine room starboard side on

after bulkhead Auxiliary - Engine room in mess near engine 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 Yes and vertically Yes, what insulation

material is used for the panels Linoleum, 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 Yes 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 or

double pole double throw knife switch and double pole fuse

and for each outgoing circuit Double pole double throw knife switch and

double pole fuse

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

ammeters Two voltmeters Two 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 Edwards coupled to 8 Amps and 1000



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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 5.5 lbs 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 L.C.A.B. cables clipped to surface or on tray in machinery spaces; V.I.R. cables run in pipes in 'tween decks; L.C. cables clipped to surface on wood grates in accommodation. 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 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 Yes and method of control Yes. Navigation Lamps, are they separately wired Yes controlled by separate single 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 Yes, whether fixed or portable 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, 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.

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	Two	16	110	146	500	Single engines		
Auxiliary	One	10	110	91	850	Steam engine		
EMERGENCY						Three engines	Fuel Oil Above 150° F	
ROTARY TRANSFORMER						Diesel engine		

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	2x16	1	27/072	146	152	13	V.I.R.	L.C.A.B.
EQUALISER								
Auxiliary Generator	1x10	1	19/083	91	118	106	V.I.R.	L.C.A.B. 5 cables, earthed and in pipe from frame to generator
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS						
Cable to S.B. feed:-		1	7/024	24	31	92 V.I.R. L.C.A.B.
Supply - two S.B.		1	7/036	12	24	340 V.I.R. In pipe
App. S.B.		1	7/036	12	24	160 V.I.R. In pipe

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS		1	7/024	15	31	330 V.I.R. L.C.A.B. in pipe & L.C.
NAVIGATION LIGHTS		1	3/036	6	12	372 V.I.R. L.C.A.B. in pipe & L.C.
LIGHTING AND HEATING						
Saloon Lig. S.B.		1	19/052	31	64	280 V.I.R. L.C.A.B. in pipe
Engineers' Lig. S.B.		1	7/024	20	31	92 V.I.R. L.C.A.B.
Crew Accom. Lig. S.B.		1	7/024	20	31	352 V.I.R. L.C.A.B. in pipe
Engine Room Lig. S.B.		1	7/024	23	31	16 V.I.R. L.C.A.B.

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.
Repair. Pump	1	3	7/024	25	46	296 V.I.R. L.C.A.B. in pipe	
Repair. Pump	1	1	7/036	9	24	320 V.I.R. In pipe	
Workshop motor	1	3	7/024	25	31	160 V.I.R. L.C.A.B.	

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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 AND ON BEHALF OF  
 BARTRAM and SONS, LTD.

*Cecil McFetrich*

Electrical Engineers.

Date 13/4/40

(CECIL MCFETRICH)  
 DIRECTOR & SECRETARY

COMPASSES.

Minimum distance between electric generators or motors and standard compass 128 feet

Minimum distance between electric generators or motors and steering compass 124 feet

The nearest cables to the compasses are as follows:—

A cable carrying 16 Ampères on the feet from standard compass 7 feet from steering compass.

A cable carrying 14 Ampères 7 feet from standard compass on the 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.

FOR AND ON BEHALF OF  
 BARTRAM and SONS, LTD.

*Cecil McFetrich*

Builder's Signature.

Date 13/4/40

DIRECTOR & SECRETARY

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 has been installed under special  
survey. The materials used are of good quality and  
the workmanship is good. On completion the equipment  
was run under working conditions with satisfactory  
results, the governing, regulation and compounding of  
the generating sets were tested, the insulation resistance  
of all circuits was measured and the space was  
inspected. This installation is in my opinion  
suitable for a second vessel.

*Noted*  
*L.Y.*  
26/4/40

Total Capacity of Generators 42 Kilowatts.

The amount of Fee ... £ 25 : 10 : 0 When applied for, 3 APR 1940

Travelling Expenses (if any) £ : : When received, 10/5/40

*D. Harrison*

Surveyor to Lloyd's Register of Shipping.

TUE. 30 APR 1940

Committee's Minute \_\_\_\_\_

Assigned see minute on

*Meby Rpt.*

2m.10.33.—Transfer. (MADE IN ENGLAND.)  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

