

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report. 29.8.1941 When handed in at Local Office.....19. Port of Middlesbrough

No. in Survey held at Haverton Hill on Tees Date, First Survey 20.6.41 Last Survey 26.8.1941
Reg. Book. (Number of Visits.....7.....)91049 on the S/S "EMPIRE AMETHYST" Tons {Gross 8032.20
Net 4675.62.

Built at Haverton Hill on Tees By whom built Furness S. Bldg. Co. Ltd Yard No. 330 When built 1941

Owners Ministry of Shipping Port belonging to Middlesbrough

Electrical Installation fitted by Furness Shipbuilding Co. Ltd Contract No. 330 When fitted 1941

Is vessel fitted for carrying Petroleum in bulk Yes 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 two-wire insulated Voltage of supply for Lighting 110

Heating Power 110 Direct or Alternating Current, Lighting Yes Power 40 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 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 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 aft of main engine on raised

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 aft of main engine on

raised platform - near 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 "Sindanyo" 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 switch and double pole fuse.

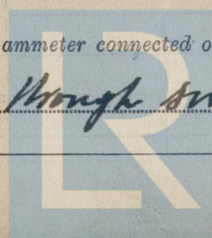
and for each outgoing circuit double pole, double throw quick break knife switch and

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 synchronising devices For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection Earth Testing, state means provided E lamps coupled to E through bus & fuses.



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Switches, Circuit Breakers and Fuses, are they as per Rule 448, are the fuses an approved type 448, are all fuses labelled as per Rule 448, are the reversed current protection devices connected on the pole opposite to the equaliser connection None fitted, have they been tested under working conditions None. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule 448. Cables, are they insulated and protected as per the appropriate Tables of the Rules 448, if otherwise than as per Rule are they of an approved type None, state maximum fall of pressure between bus bars and any point under maximum load 4.4 V., are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets 448. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends 448 with insulating compound None or waterproof insulating tape 448. 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 448, are cables laid under machines or floorplates None, if so, are they adequately protected None. Are cables in machinery spaces, galleys, laundries, etc., lead covered 448 or run in conduit None. State how the cables are supported and protected L.C.A.B. cables clipped to plate on underside of fore-and-aft gangway: L.C.A.B. cables run in pipe with expansion joint on deck for emergency supply: L.C.A.B. cables in machinery spaces L.C.B. cables in accommodation. Are all lead sheaths, armouring and conduits effectually bonded and earthed 448. Refrigerated chambers, are the cables and fittings as per Rule 448. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands 448, where unarmoured cables pass through beams, etc., are the holes effectively bushed 448 and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule 448. Emergency Supply, state position None and method of control None.

Navigation Lamps, are they separately wired 448 controlled by separate double pole switches 448 and fuses 448. Are the switches and fuses in a position accessible only to the officers on watch 448, is an automatic indicator fitted 448. Secondary Batteries, are they constructed and fitted as per Rule None, are they adequately ventilated None. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof 448. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present 448, if so, how are they protected D.S.

"Disproportionate" flameproof Lighting Fittings as approved installed in Centronette and where are the controlling switches fitted in officers accommodation, are all fittings suitably ventilated 448, are all fittings and accessories constructed and installed as per Rule 448. Searchlight Lamps, No. of None fitted, whether fixed or portable None, are their fittings as per Rule None. Heating and Cooking, is the general construction as per Rule None, are the frames effectually earthed None, are heaters in the accommodation of the convection type None. Motors, are all motors constructed and installed as per Rule 448 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil 448, if situated near unprotected combustible material state minimum distance from same horizontally None and vertically None.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing None. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule None. Control Gear and Resistances, are they constructed and fitted as per Rule 448. 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 448, are all fuses of the cartridge type 448 are they of an approved type 448. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type None. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule 448, are they suitably stored in dry conditions 448. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory 448.

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	20	110	182	600	Single Cylinder Steam Engine		
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 Core.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATORS ...	2 x 20	1	19/083	182	191	36 x 44	V.C.	L.C.A.B.
" " EQUALISER ...								
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR ...								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...							
Sub. Switchboard (Main feed)	1	37/093	48	343	640	V.C.	L.C.A.B.
Sub. Switchboard (Emergency feed)	1	37/093	48	343	650	V.C.	L.C.A.B.
Aft. Lighting & B.B. feed	1	19/052	28	104	140	V.C.	L.C.A.B.
Shore Connection	1	19/083	—	191	230	V.C.	L.C.A.B.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ... (off. Sub. Switch Bd.)	1	7/044	15	42	120	V.C.	L.C.B.
NAVIGATION LIGHTS (off. Sub. Switch Bd.)	1	7/044	7	42	280	V.C.	L.C.B.
LIGHTING AND HEATING ...							
Engine Room 1st DB: No. 1	1	7/044	17	42	66	V.C.	L.C.A.B.
Engine Room 1st DB: No. 2	1	7/044	13	42	70	V.C.	L.C.A.B.
2 Off. 1st DB's (off. Main Switch Bd.)	1	7/044	7+10	42	80+120	V.C.	L.C.B.
Forecastle 1st DB	1	7/044	5	42	460	V.C.	L.C.A.B.
Mainst. Hold 1st DB							
Mid. Portables DB							
Pumps Room 1st DB							
2 Engine Room 1st DB's (off. 4th S.B.)	1	7/044	14+18	42	16+70	V.C.	L.C.A.B.
4th Portables DB (off. 4th S.B.)	1	7/044		42	60	V.C.	L.C.A.B.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Aft. Ventilation Fan	1	3	1	7/044	28	42	140	V.C. L.C.A.B.
Mid. " "	1	3	1	7/044	28	42	140	V.C. L.C.A.B.

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.

FURNESS SHIPBUILDING CO. LIMITED

P. L. Glover

Electrical Engineers.

Date 11th Sept 1941

COMPASSES.

Minimum distance between electric generators or motors and standard compass 280

Minimum distance between electric generators or motors and steering compass 275

The nearest cables to the compasses are as follows:—

A cable carrying 14 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.

FURNESS SHIPBUILDING CO. LIMITED.

Builder's Signature.

Date 11th Sept 1941

Jas. M. Robertson

Secretary.

Is this installation a duplicate of a previous case yes If so, state name of vessel "Empire Gold"

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 with the Ministry of Shipping Specification and amendments thereto. The materials used are of good quality and design and the workmanship is good. On completion trials of the equipment were witnessed and found satisfactory, and the insulation resistance of all circuits was measured and found satisfactory. This equipment is in my opinion suitable for a Classed Vessel.

Noted
L.P.
22/9/41

Total Capacity of Generators (2x20) 40 Kilowatts.

The amount of Fee ... £ 25 : 0 : 0

When applied for,

11.9.1941.

Travelling Expenses (if any) £ :

When received.

.....19.....

Surveyor to Lloyd's Register of Shipping.

A. S. Ward

TUE. 23 SEP 1941

Committee's Minute

Assigned

See Mdb SE 17097



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