

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 25th Oct, 1940 When handed in at Local Office 3.10 OCT 1940 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 19th July Last Survey 25th Oct, 1940  
Reg. Book. Suppt. (Number of Visits.....) 7

88054 on the M.V. "FULTALA" Tons { Gross... 5251  
Net... 2828

Built at Sunderland By whom built Tom Doxford & Sons, Ltd. Yard No. 664 When built 1940

Owners British Overseas Airways Corp. Ltd. Port belonging to London

Electrical Installation fitted by The Sunderland Eng. Co. Ltd. Contract No. 664 When fitted 1940

Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. No 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..... Power 110 Direct or 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..... 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 starboard side forward

....., 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 on

forward bulkhead

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 Asbestos, 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 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

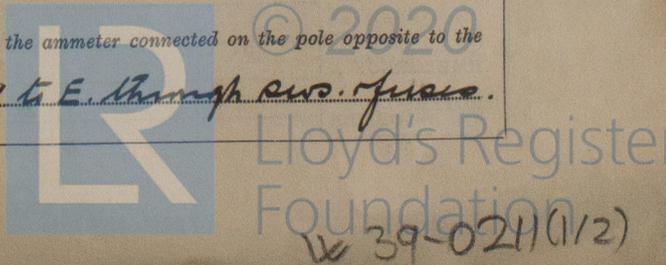
knives switch and double pole fuse

and for each outgoing circuit Double pole double throw knives switch and double pole fuse

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 2wv

ammeters 2wv 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 2wv. fuses



Switches, Circuit Breakers and Fuses, are they as per Rule Y, are the fuses an approved type Y, are all fuses labelled as per Rule Y, are the reversed current protection devices connected on the pole opposite to the equaliser connection Y, have they been tested under working conditions Y. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Y. Cables, are they insulated and protected as per the appropriate Tables of the Rules Y, if otherwise than as per Rule are they of an approved type Y, state maximum fall of pressure between bus bars and any point under maximum load 5.3 volts, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Y. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Y with insulating compound Y or waterproof insulating tape Y. 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 Y, are cables laid under machines or floorplates Y, if so, are they adequately protected Y. Are cables in machinery spaces, galleys, laundries, etc., lead covered Y or run in conduit Y. State how the cables are supported and protected. V.I.R. cables run in galvanized pipe in forward and aft stowage spaces. V.I.R. cables run in galv. pipe and L.C.B. cables clipped to surface in machinery spaces. L.C. cables clipped to wood grounds or to surface in accommodation. Are all lead sheaths, armoring and conduits effectually bonded and earthed Y. Refrigerated chambers, are the cables and fittings as per Rule Y. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Y, where unarmoured cables pass through beams, etc., are the holes effectually bushed Y and with what material Lead or fibre. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Y. Emergency Supply, state position Y and method of control Y.

Navigation Lamps, are they separately wired Y controlled by separate single pole switches Y and fuses Y. Are the switches and fuses in a position accessible only to the officers on watch Y, is an automatic indicator fitted Y. Secondary Batteries, are they constructed and fitted as per Rule Y, are they adequately ventilated Y. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Y. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present Y, if so, how are they protected Y.

and where are the controlling switches fitted Y, are all fittings suitably ventilated Y, are all fittings and accessories constructed and installed as per Rule Y. Searchlight Lamps, No. of Y, whether fixed or portable Y, are their fittings as per Rule Y. Heating and Cooking, is the general construction as per Rule Y, are the frames effectually earthed Y, are heaters in the accommodation of the convection type Y. Motors, are all motors constructed and installed as per Rule Y and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Y, if situated near unprotected combustible material state minimum distance from same horizontally Y and vertically Y.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Y. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Y. Control Gear and Resistances, are they constructed and fitted as per Rule Y. Lightning Conductors, where required are they fitted as per Rule Y. 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 Y, are all fuses of the cartridge type Y, are they of an approved type Y. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type Y. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Y, are they suitably stored in dry situations Y. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory Y.

cuts to follow

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	25	110	227	685	Single expansion steam engines		
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	2 x 25	1	37.083	227	296	75 x 100	V.C.	L.C.
" " EQUALISER								
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						
Accom. Ltg. db. feed:-		1	19.064	51	83	150 V.I.R. In galv. pipe
Cargo Ltg. db. feed:-		1	19.052	43.7	64	150 V.I.R. In galv. pipe
P. Pump & E. Fans db. feed:-		1	19.052	38.5	64	10 V.I.R. In galv. 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	19.064	25	83	240 V.I.R. In galv. pipe & L.C.
NAVIGATION LIGHTS		1	7.044	10	31	240 V.I.R. In galv. pipe & L.C.
LIGHTING AND HEATING						
Lower Ltg. Acc. Feed		1	7.036	10	24	120 V.I.R. L.C.
Captain's Ltg. db.		1	7.036	7	24	70 V.I.R. L.C.
Officer's Ltg. db.		1	7.044	16	31	70 V.I.R. L.C.
Engg. Ltg. db.		1	7.044	18	31	80 V.I.R. L.C.
Aft Ltg. db.		1	7.044	10	31	600 V.I.R. In galv. pipe
Forward Cargo db.		1	7.044	20	31	160 V.I.R. In galv. pipe
Aft & Mainship Cargo db.		1	7.044	23.7	31	100 V.I.R. In galv. pipe
Engine Room Ltg. db.		1	7.044	30	31	240 V.I.R. In galv. pipe

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.
Running Gear	1	10	1	19.072	84	97	140 V.I.R. L.C.
Oil Separator	2	3	1	7.044	25.1	31	140 V.I.R. In galv. pipe
Oil Burning Fan	1	5	1	7.044	41.5	46	220 V.I.R. In galv. pipe
Panama Pump	1	1.5	1	7.036	13.5	24	200 V.I.R. In galv. pipe
Refrig. Motor	2	4.1	1	7.044	33.49	46	160 V.I.R. In galv. pipe
Engine Room Crane	1	2	1	7.044	17	31	80 V.I.R. In galv. pipe
Workshop Motor	1	2	1	7.044	17.3	31	300 V.I.R. In galv. pipe
Engine Room Vent. Fans	2	1.5	1	7.036	12.5	24	180 x 260 V.I.R. In galv. pipe

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.

*No. 10* Sunderland Forge & Co Ltd Electrical Engineers. Date 26-10-1940  
*A. J. Lunn*

COMPASSES.

Minimum distance between electric generators or motors and standard compass 62 feet

Minimum distance between electric generators or motors and steering compass 62 feet

The nearest cables to the compasses are as follows:—

A cable carrying 1/2 hp Ampères on the feet from standard compass 8 feet from steering compass.

A cable carrying 1/2 hp Ampères 8 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.

WILLIAM DOXFORD & SONS, Limited. Builder's Signature. Date 29<sup>th</sup> Oct. 1940.

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 and the workmanship are good. On completion the equipment was run under working conditions with satisfactory results and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a classed vessel.

*Noted*  
*JY*  
*7/11/40*

Total Capacity of Generators 50 Kilowatts.

The amount of Fee ... £ 27 : 10 : 280 Oct 1940 When applied for,  
 Travelling Expenses (if any) £ : : 30 Oct 1940 When received.

Sturston  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 19 NOV 1940  
 Assigned See Atd. J.C. 32996

2m.10.38.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)

