

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office - 7 JUL 1941

Date of writing Report 30.6.41 When handed in at Local Office 5th July 1941 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 4th June Last Survey 20th June 1941
Reg. Book. Supp. (Number of Volls. 8)

87769 on the M.V. Daltonhall Tons { Gross 7253 Net 5022

Built at Sunderland By whom built Wm Doxford & Sons Ltd. Prod No. 672 When built 1941

Owners The West Hartlepool Steam Nav. Co. Ltd. Port belonging to West Hartlepool.

Electrical Installation fitted by Campbell & Inderwood Ltd. Contract No. 672 When fitted 1941

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

Have plans been submitted and approved System of Distribution Two-Wire insulated Voltage of supply for Lighting 110 V.

Heating 110 Power 110 Direct or Alternating Current, Lighting Yes Power Yes 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 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 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 aft.

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 near

Generating sets

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 Epoxy Sindonyo, 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 A double pole

circuit-breaker with overload trip on each pole and time-lag device

and for each outgoing circuit a 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 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 Earth lamps Coupled to "E" through fuses

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 150-A, are the reversed current

protection devices connected on the pole opposite to the equaliser connection none fitted, 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 4.4 V, 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 Yes

with insulating compound — 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 No, if so, are they adequately protected. — Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected. V.I.R Cables run in heavy gauge screened Conduit in 'T' enclosures and in machinery spaces, L.C. & B. Cables clipped to surface or to Wood grounds in accommodation

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 Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. — Emergency Supply, state position Mainstard side aft of main engine and method of control a double pole circuit breaker with overload trip and time-lag. 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 Yes. Secondary Batteries, are they constructed and fitted as per Rule. —, are they adequately ventilated. — what is the battery capacity in ampere hours. —

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 No, if so, how are they protected. —

and where are the controlling switches fitted. —, are all fittings suitably ventilated. —

are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of none fitted, whether fixed or portable. —, are their fittings as per Rule. — 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 none fitted. 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 — 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 none fitted. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing none fitted. 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. — 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			Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.			Fuel Used.	Flash Point of Fuel.
MAIN	2.	15.	110	136	600	Single Cylinder Steam Engines		
EMERGENCY	1	10	110	91	1000	Pelapone 2-Cylinder Diesel	Renovd 9/58 & Repaired by 28 Kw. 9/58	
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 15	1	19/083	136.5	191	90.80	V.C.	L.C. & B
" " EQUALISER	1 x 10	1	19/083	91	191	180	V.C.	L.C. & B
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 Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS							

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/064	15	46	480	V.I.R	In conduit and L.C.	
NAVIGATION LIGHTS	1	7/044	6	31	480	V.I.R	do.	do.
LIGHTING AND HEATING								
Saloon and Captain's D.B.'s	1	7/064	20	46	400+40	V.I.R	do.	do.
Engineers 4/2 D.B.	1	7/044	15	31	130	V.I.R	do.	-
Aft Lighting D.B.	1	7/044	10	31	560	V.I.R	do.	-
Cargo 4/2 Section D.B.	1	7/064	25	46	130	V.I.R	do.	-
Engine and Blg. Rm D.B.	1	7/044	24	31	30	V.I.R	do.	-

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Refrigerator Motor	1	1	7/044	16	31	400	V.I.R	In #4 Conduit
Crane Motor	1	3	7/044	25	31	100	V.I.R	" "
Workshop Motor	1	2	7/044	20	31	180	V.I.R	" "
Trimming Pump Motor	1	1.5	7/044	15	31	160	V.I.R	" "
Boiler Rm Fan Motor	1	5	7/064	45	46	200	V.I.R	" "
Oil Separator Motor	1	3	7/044	25	31	160	V.I.R	" "
" " " "	2	1	7/044	25	31	160	V.I.R	" "

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.

CAMPBELL & ISHERWOOD, LTD.

Thomas Head

Electrical Engineers.

Date 4th July 1941

COMPASSES.

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

Minimum distance between electric generators or motors and steering compass 120 feet

The nearest cables to the compasses are as follows:—

A cable carrying 14 Ampères 2 1/2 feet from standard compass 7 feet from steering compass.

A cable carrying 14 Ampères 7 feet from standard compass 2 1/2 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,

B. J. Fletcher

Builder's Signature.

Date 5/7/41

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

Plans. Are approved plans forwarded herewith If not, state date of approval 14-2-40

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

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 and in accordance with the approved plans, and the Ministry of Shipping Specification and amendments thereto. The materials used are of good quality and the workmanship is 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
 J. H.
 8/7/41

Total Capacity of Generators 40 Kilowatts.

The amount of Fee ... £25 : 0 : When applied for, 1. 7. 19. 41

Travelling Expenses (if any) £ : : When received, 3. 7. 19. 41

S. D. Wood
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 11 JUL 1941

Assigned See Std. J.C. 33/35

501, 4, 39.—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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