

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 22nd Sept. 43 When handed in at Local Office 8 OCT 1943 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 8th July Last Survey 29th Sept. 1943
Reg. Book. Suppt. (Number of Visits 13)

40251 on the S.S. "WRENWOOD" Tons {Gross 2847
Net 1588

Built at Sunderland By whom built S.P. Austin & Co. Ltd. Yard No. 368 When built 1943

Owners W. Grace Fenwick & Co. Ltd. Port belonging to London

Electrical Installation fitted by The Sunderland Prop. & Eng. Co. Ltd. Contract No. 368 When fitted 1943

Is vessel fitted for carrying Petroleum in bulk no Is vessel equipped with D.F. no 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 no Power no Direct no Alternating Current, Lighting yes Power no If Alternating Current state periodicity no 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 no Generators, are they compound wound yes, are they level compounded under working conditions yes,

if not compound wound state distance between generators no and from switchboard no 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 no 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 aft on

main 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 no and vertically no, 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 aft

beside 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 no and vertically no, what insulation

material is used for the panels "Ebony Linsampt", 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 no 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 no Instruments on main switchboard two

ammeters two voltmeters no synchronising devices no For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection no Earth Testing, state means provided ELamps coupled to E through one of 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 no, are the reversed current

protection devices connected on the pole opposite to the equaliser connection no, have they been tested under working conditions, and at what current

did they operate no 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 4.4v, are the ends of all cables having a sectional area of 0.01

square inch and above provided with soldering sockets yes Are paper insulated and varnished cambric insulated cables sealed at the ends knives fitted

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 Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit _____ State how the cables are supported and protected L.C.B. cables clipped in wood casing through after hold: W.E. cables run in pipe through forward hold: L.C.A.B. cables clipped to surface in machinery spaces: L.C. cables clipped to surface in access.

Are all lead sheaths, armoring 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 or fibre Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes Emergency Supply, state position _____ 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 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 Yes

are all fittings and accessories constructed and installed as per Rule Yes Searchlight Lamps, No. of _____, 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 _____ 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 _____ Control Gear and Resistances, are they constructed and fitted as per Rule _____

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				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	10	110	91	380	Single expansion steam engine		
	1	8	110	73	1000	Low expansion diesel engine	Fuel Oil Above 150°F	
EMERGENCY						diesel engine		
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	10	1	19/083	91	118	20	W.E.	L.C.A.B.
" " EQUALISER	8	1	19/064	73	83	24	W.E.	L.C.
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 ...							
Midship Lighting A.B.	1	19/064	23	64	470	W.E.	L.C.A.B.
Cargo Lighting A.B.	1	19/064	24	64	470	W.E.	L.C.A.B.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS	1	7/0114	5	31	530	W.E.	L.C.A.B.
NAVIGATION LIGHTS A.B. (off Midship A.B.)	1	7/036	6	24	60	W.E.	L.C.
LIGHTING AND HEATING							
Alt. Trav. Lig. A.B. fwd.	1	7/036	6	24	60	W.E.	L.C.
Saloon Lig. A.B. } off mid. A.B.	1	7/036	8	24	4	W.E.	L.C.
Heater } off mid. A.B.	1	7/036	9	24	80	W.E.	L.C.
Fwd. Cargo Lig. T.B. } off Cargo A.B.	1	7/0114	9	31	290	W.E.	In pipe
Aft Cargo Lig. T.B. } off Cargo A.B.	1	7/0114	9	31	513	W.E.	L.C.
Charging Board	1	7/0114	6	31	60	W.E.	L.C.
Engineers' Lig. A.B.	1	7/064	12	46	100	W.E.	L.C.
Engine Room Lig. A.B.	1	7/036	10	24	36	W.E.	L.C.A.B.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.
<i>No motors fitted</i>		

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.

By *H. H. H. H.*
of The Sunderland Forge & Engineering Co. Ltd.
Pallin, Sunderland.

Electrical Engineers.

Date 23rd Sept. 1943

COMPASSES.

Minimum distance between electric generators or motors and standard compass 174 feet

Minimum distance between electric generators or motors and steering compass 170 feet

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.

FOR S. P. AUSTIN & SON, LIMITED.

S. P. Austin

Builder's Signature.

Date

MANAGING DIRECTOR.

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

Plans. Are approved plans forwarded herewith *Yes* If not, state date of approval *13/2/42 & 25/9/42*

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

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
arrangements. The materials used are of good quality and the
workmanship is good. In comparison 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 closed vessel.*

*Noted
L.H.
25/10/43.*

Total Capacity of Generators 18 Kilowatts.

The amount of Fee ... £ 16 : 10 : - 7 OCT 1943

Travelling Expenses (if any) £ : : When received. 19

G. Harrison

Surveyor to Lloyd's Register of Shipping.

TUES, 26 OCT 1943

Committee's Minute

Assigned *See J. E. Machy rpt.*

5m. 4. 3. Transfer. (MAIL AND PRINTED IN ENGLAND.)

(The Surveyors are requested to write on or below the space for Committee's Minute.)



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