

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 11 APR 1952

Date of writing Report 18. 3. 52 19 When handed in at Local Office APR - 2 1952 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 28.11.51 Last Survey 20.3.52 19
Reg. Book. (No. of Visits 15)40546 on the m.v. "SANDALWOOD". Tons { Gross. 10061
Net. 5915

Built at Sunderland By whom built J.L.Thompson & Sons Id. Yard No. 672 When built 1952

Owners John I. Jacobs Ltd. Port belonging to London

Installation fitted by Sunderland Forge & Engineering Co. Ltd When fitted 1952

Is vessel equipped for carrying Petroleum in bulk Yes Is vessel equipped with D.F. yes E.S.D. yes Gy.C. yes Sub.Sig. no Radar yes

Plans, have they been submitted and approved yes System of Distribution 2-wire ins. Voltage of Lighting 110

Heating - Power 110 D.C. or A.C., Lighting D.C. Power D.C. If A.C. state frequency -

Prime Movers, has the governing been found as per Rule when full load is thrown on and off yes Are turbine emergency governors fitted

with a trip switch - Generators, are they compound wound yes, and level compounded under working conditions yes,

Are the generators arranged to run in parallel no Is the compound winding connected to the negative or positive pole negative

Have machines 100 kw. and over 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 yes Position of Generators on raised deck, engine

room starboard.

is the ventilation in way of generators satisfactory yes are they clear of inflammable material and protected from mechanical injury and

damage from water, steam and oil yes Switchboards, where are main switchboards placed on angle-iron framework,

adjacent to generators

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water,

steam and oil yes, what insulation is used for the panels ebony "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 construction as per Rule, including locking of screws and nuts yes Description of Main Switchgear

for each generator and arrangement of equaliser switches a double-pole air-break circuit-breaker fitted with

O/L tripping device on each pole, for Steam Generators: For Diesel, A Double-pole Knife

switch and fuses.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit a double-pole quick-break knife switch

and fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 3

ammeters 3 voltmeters - synchronising devices. For compound machines in parallel are the ammeters and reverse current

protection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided E lamps

Preference Tripping, state if provided - and tested -

Switches, Circuit Breakers and Fuses, are they as per Rule yes, are the fuses an Approved Type yes

make of fuses "ZED", are all fuses labelled yes If circuit breakers are provided for the generators, at what

overload do they operate 20%, and at what current do the reverse current protective

devices operate - Cables, are they insulated and protected as per Rule 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 less than 6. volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends 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 any cables laid under machines or floorplates no, if so, are they adequately protected - State

type of cables (if in conduit this should also be stated) in machinery spaces L.C. on metal tray, galleys L.C.A.B.

and laundries - State how the cables are supported or protected Main feeders and sub-mains

along fore and aft gangways, V.C.L.C.A.B. cables clipped to solid steel trough.

Accommodation, L.C. cables clipped to the surface of wooden grounds and protected where

necessary by wood or metal guards.

Are all lead sheaths, armouring and conduits effectually bonded and earthed 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

effectively bushed yes Refrigerated chambers, are the cables and fittings as per Rule yes

Have refrigeration fan motors been constructed under survey - and test certificates supplied -

Are the motors accessible for maintenance at all times -

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. yes Emergency Supply, state position

Navigation Lamps, are they separately wired. yes controlled by separate double pole switches 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 Is an alternative supply provided. yes

Secondary Batteries, are they constructed, fitted and adequately ventilated as per Rule. - state battery capacity in ampere hours - Where required to do so does it comply with 1948 International Convention. -

Lighting, is fluorescent lighting fitted. no If so, state nominal lamp voltage. - and compartments where lamps are fitted. -

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. yes

Searchlights, No. of -, whether fixed or portable. -, are they of the carbon arc or of the filament type. -

Heating and Cooking, is the general construction as per Rule. -, are the frames effectually earthed. -, 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 protected from damage from water, steam and oil. yes

Are motors coupled to oil fuel transfer and 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 sea services been supplied and the results found as per Rule. yes

Lightning Conductors, where required are they fitted as per Rule. -

Ships carrying Oil having a Flash Point of less than 150° F. Have all the special requirements of the Rules for such ships been complied with. yes, are all fuses of an Approved Cartridge Type. yes make of fuse. "ZED" Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. no see Secretary's letter 8.11.51

E.S.D., if fitted state maker. Hughes location of transmitter and receiver. Aft C.dam Port, & ditto Starboard.

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and 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	MAKER.	RATED AT				PRIME MOVER.	
			Kw. per Generator.	Volts.	Amps.	Revs. per Min.	TYPE.	MAKER.
MAIN	2	S.F.&Eng.Co.Ltd. Nos.41204 & 41206	45	110	409	640	Steam	S.F.&Eng. Co.Ltd. 41205 & 41207
EMERGENCY ROTARY TRANSFORMER	1	S.F.&Eng. Co.Ltd No. 43603	25	110	228	1000	Diesel	McLaren & Co.Ltd No.30890

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	No.1.	45	2	37/.072	409	520	40	V.C.	L.C.B
"	No.2.	45	2	37/.072	409	520	52	"	"
"	No.3.	25	2	19/.083	228	404	308	"	" A.B.
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
"									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

DESCRIPTION.	No. of	Kw.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	
Midship Ltg.& Power Section	3		19/.083	246	606	674	V.C. L.C.A.B.
Aft ditto	1		37/.072	190	260	152	" "
Workshop Section	1		19/.064	62	143	268	" "
Purifier Section	1		19/.083	96	202	72	" "
Priming Pump Section	1		7/.052	14	37	60	V.I.R. "
Ventilation Section	1		19/.064	80	143	188	V.C. "
Shore Connection	2		19/.083	300	404	156	" "
Fridge Machinery Section	1		7/.064	46.7	80	280	" "

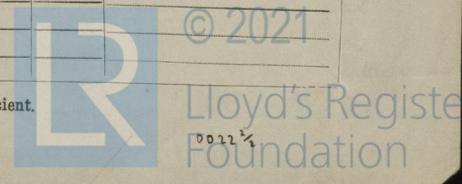
DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.).

DESCRIPTION.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.			
Navigation - main supply	2c. 7/.029	3	15	337	V.I.R.	L.C.A.B.
do. - alt supply	I 7/.029	-	15	160	"	L.C.B.
W/T supply	I 19/.064	30	143	337	V.C.	L.C.A.B.
Radar Supply	I 19/.064	25	143	337	"	"
Battery Charging Supply	I 7/.036	10	24	152	V.I.R.	L.C.
Echo Sounding Supply	I 7/.036	5	24	152	"	"
Gyro Compass Supply	I 7/.036	10	24	160	"	"
Navigating Bridge Ltg. D-I	I 7/.064	33	80	152	V.C.	"
Upper Bridge Ltg. D-2	I 7/.064	33	80	130	"	"
Bridge Deck Ltg. D-3, Port	I 7/.036	20	24	20	V.I.R.	"
" " " D-4, Star.	I 7/.036	17	24	20	"	"
Cargo D-5	I 7/.064	24	80	20	V.C.	"
Forecastle D-6	2c 7/.029	4	15	190	V.I.R.	L.C.A.B.
Suez Canal Projector	I 19/.064	27	143	1050	V.C.	"
Poop Deck Ltg. D-7, Port	I 7/.044	29	31	150	V.I.R.	L.C.
" " " D-8, Star.	I 7/.044	26.5	31	42	"	"
" " " Power D-9	I 7/.064	30	80	250	V.C.	"
Upper Deck Ltg. D-10, PF.	I 7/.036	14.5	24	190	V.I.R.	"
" " " D-II, SF.	I 7/.036	16.5	24	70	"	"
" " " D-I2, PA.	I 7/.036	13.5	24	260	"	"
" " " D-I3, SA.	I 7/.036	12	24	150	"	"
Engine Room Ltg. D-I4 Port	I 7/.036	21	24	268	"	L.C.A.B.
" " " D-I5 Star.	I 7/.036	21	24	48	"	"
Capt's.Kettle & Radar Board	I 7/.036	23	24	14	V.I.R.	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	
Midship Vent Fan	1	4	I 7/.064	35	80	64	V.C. L.C.
Aft Vent Fans	2	3	I 7/.044	26	31	2/20	V.I.R. "
Galley Exhaust Fans	2	0.2	2c 3/.036	1.7	10	18.63	" "
Galley Supply Fan	1	0.5	2c 3/.036	5.4	10	21	" "
Fridge Exhaust Fan	1	0.2	2c 3/.036	1.7	10	27	" "
Galley Blower	1	1	I 7/.029	10	15	21	" "
Fridge Compressor	1	4	I 7/.064	35	80	58	V.C. L.C.A.B.
" Circ.Pump	1	21	2c 7/.036	10	24	150	V.I.R. "
" Fan	1	0.125	2c 3/.036	1.7	10	30	" "
Crane Motor	1	3	I 7/.044	26	31	120	" "
Lathe Motor	1	2	I 7/.044	18	31	66	" "
Drilling M/c.	1	1	I 7/.036	10	24	66	" "
Grinder Motor	1	.75	I 7/.036	7	24	66	" "
Oil Purifiers	3	3	I 7/.044	26	31	av.37	" "
Priming Pump Motor	1	1.5	I 7/.036	14	24	66	" "
Engine Room Vent Fans	2	3	I 7/.044	26	31	22.24	" "
Boiler Room do.	2	1.75	I 7/.036	14	24	100.64	" "
Pantry Exhaust Fan	1	0.125	2c 3/.036	1.7	10	60	V.I.R. L.C.
Saloon Domestic Fridge	1	0.5	2c 3/.036	5.4	10	18	" "

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.



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.

P. PRO THE SUNDERLAND FORCE & ENGINEERING Co. LTD.

Electrical Contractors. Date 19/3/52

COMPASSES.

Have the compasses been adjusted under working conditions. yes

FOR AND ON BEHALF OF
JOSEPH L. THOMPSON & SONS, LIMITED.

Builder's Signature. Date 31-3-52

Chairman

Have the foregoing descriptions and schedules been verified and found correct. yes

Is this installation a duplicate of a previous case. no If so, state name of vessel. -

Plans. Are approved plans forwarded herewith. yes If not, state date of approval. -

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

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.) The pump room lighting arrangements are in accordance with the Secretary's letter of 8.II.51. The electrical equipment of this vessel has been installed under special survey in accordance with the approved plans and the 'as-fitted' diagram attached. The installation complies with the Electrical rules with special regard to Section 15 thereof. The materials and workmanship are good. On Completion, satisfactory trials of the equipment were witnessed and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a classed vessel.

2m.8.50.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators (2 x 45, 1 x 25) 115 Kilowatts.

The amount of Fee ... £59. 5. 0. : When applied for, APR - 7 1952
 19

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

B. D. Mann
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 6 MAY 1952

Assigned Su F.E. Welch, rpt



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