

3.1 MAR 1954

Rpt. 13.

No. 81616

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 6-3-1954 When handed in at Local Office 25-3-1954 Port of GLASGOW

No. in Survey held at GLASGOW, PORT GLASGOW & GREENOCK Date, First Survey 21st Dec. 1953 Last Survey 3rd March 1954
Reg. Book. 35963 (No. of Visits 15)

on the M. V. "DAVANGER" Tons { Gross 11826.54
Net 6483.07

Built at PORT GLASGOW By whom built LITHGOWS LTD Yard No. 1079 When built 1954

Owners WESTFAL-LARSEN & CO A/S Port belonging to BERGEN

Installation fitted by THE SUNDERLAND FORGE & ENGINEERING CO. LTD. When fitted 1954

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. — Radar YES

Plans, have they been submitted and approved Yes System of Distribution Two wire Voltage of Lighting 110

Heating 110 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 Yes 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 Yes Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule Yes Position of Generators Port and starboard

sides, forward end of engine room.

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 platform,

starboard side, forward engine room bulkhead.

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 "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 Triple pole circuit breakers, fitted with

overload, reverse current and undervoltage trips.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Double pole circuit breaker fitted with

overload trips, or double pole knife switch and cartridge fuses.

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

ammeters Three 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 Yes Earth Testing, state means provided —

Earth lamps Preference Tripping, state if provided No, and tested —

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

make of fuses Siemens "Zed", are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 150% Full load current., and at what current do the reverse current protective devices operate 10-15% Full load current 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 under 6% B.B. 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 Yes, if so, are they adequately protected Yes State type of cables (if in conduit this should also be stated) in machinery spaces LCB & LCAB, galleys LC & LCB

and laundries LC State how the cables are supported or protected Machinery spaces LCAB

cables clipped to steel plate, perforated tray or steelwork. Mains LCAB cables

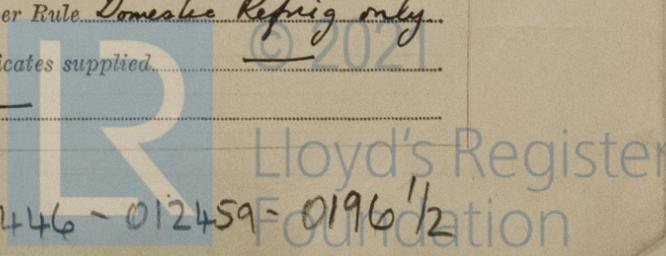
clipped to steel plate or perforated tray. Accommodation LC cables clipped

to woodwork.

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 Domestic Refrig only

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

Are the motors accessible for maintenance at all times —



012446 - 012459 = 0196 1/2

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, weather proof... Yes, except engine room floodlights which are drip-proof

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

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 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... Siemens "Zed" Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships... Yes Are all cables lead covered as per Rule... Yes

E.S.D., if fitted state maker... Kelvin Hughes location of transmitter and receiver... Same space 48-49

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.	
			Kv. per Generator.	Volts.	Amps.	Revs. per Min.	TYPE.	MAKER.
MAIN	2	Campbell & Spenwood	150	110	1363	500	Oil	National Gas
	1	Grompton Parkinson.	75	110	682	500	Steam	W. Sisson & Co.
EMERGENCY ROTARY TRANSFORMER								

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	2	150	4			
" EQUALISER			2	37/103		816	60	"	"
	1	75	2	37/103	681	816	30	"	"
			1	37/103		408	15	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" GENERATOR									

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

DESCRIPTION.	No. of	Kw.	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).	INSULATION.	PROTECTIVE COVERING.
Crew Aft Lighting Section Panel	1		19/083	168	202	160	VC	LCAB	
Galley Range	1		37/072	208	260	280	"	"	
Stoke Connection Box	1		37/083	300	314	140	"	"	
Midship Sub Switchboard	1		37/103	200	408	510	"	"	
Air Conditioning Midships Section Panel	1		37/103	222	408	600	"	"	
Air Conditioning Aft Upper Deck Section Panel	1		19/064	124	143	140	"	"	
Air Conditioning Aft Boat Deck Section Panel	1		19/064	96	143	300	"	"	

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

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
			Workshop Machinery D.B.	1			
Domestic Repairing Gear	1	7/064	58	80	170	"	"
Aft Lighting Upper Deck Stbd D.B.	1	7/044	26.6	31	180	VIR	LC
Aft Lighting Poop Deck Port D.B.	1	7/064	36	80	80	VC	"
Engine Room Aux D.B. No. 4	1	19/064	50	143	60	"	LCAB
Crew Aft Power D.B.	1	19/064	85.8	143	300	"	"
Calorifier Aft	1	19/064	36	143	160	"	"
Engine Room Aux D.B. No. 1	1	19/064	101.6	143	40	"	"
Engine Room Aux D.B. No. 3	1	7/064	57	80	110	"	"
Engine Room Lighting Section Box	1	19/064	63	143	80	"	"
Engine Room Lighting Port Stbd D.B.	1	7/044	17.7	31	90	VIR	"
Engine Room Lighting Stbd Bottom D.B.	1	7/044	12	31	40	"	"
Suez Canal Searchlight	1	19/064	35	143	600	VC	"
Calorifier Midships	1	7/064	36	80	50	"	LC
Bridge Deck Lighting Stbd D.B.	1	7/064	37	80	20	VC	"
Bridge Deck Lighting Port D.B.	1	7/064	38	80	60	VC	"
Gyro Compass	1	7/044	12	31	70	VIR	"
Upper Bridge Deck Lighting D.B.	1	7/044	27	31	80	"	"
Winches	1	7/064	27.3	80	110	VC	"
Radar	1	7/064	45.4	80	110	"	"
Echo Sounder	1	7/029	10	15	110	VIR	"
Navigation Lighting & Instruments D.B.	1	7/064	30	80	130	VC	"
Boat & Mast Lighting D.B.	1	7/064	34	80	130	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	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).	INSULATION.	PROTECTIVE COVERING.
Fire & Sanitary Pump	1	20	1	19/083	158	202	90	VC	LCAB
Air Compressor	1	47.5	1	37/103	374	408	100	"	"
Air Compressor, Air Cond. Aft	1	47	1	37/103	355	408	300	"	"
Air Compressor, Air Cond. Midship	1	22	1	19/083	170	202	40	"	LC
Steering Gear	2	20	1	19/083	158	202	300	"	LCAB
Trimming Gear	1	25	1	19/083	189	202	110	"	"
Fuel Valve Control Pumps	2	1	1	7/029	10	15	50	VIR	LCAB
E.R. Vent Fans	2	2.75	1	7/044	25	31	80	"	"
Repairing Compressor	1	6	1	7/064	51	80	20	VC	"
Air Conditioning Fans	3	4.5	1	7/064	35	80	40	"	LC
Air Conditioning Fans	1	2.5	1	7/044	22	31	40	VIR	"
Air Cond. Water Pump	1	5	1	7/064	39.5	80	60	VC	LCAB
Air Cond. Water Pump	1	3.5	1	7/044	27.5	31	60	VIR	"
Hydrofore Pumps	3	5.5	1	7/064	45	80	20	VC	"
Purifiers	3	3.5	1	7/044	28.5	31	45	VIR	"

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.

per pro. THE SUNDERLAND FORGE & ENG. CO. LTD., Electrical Contractors. Date 15.3.54.
J. C. Slank DIRECTOR.

COMPASSES.

Have the compasses been adjusted under working conditions... Yes
 LITHGOWS LIMITED.

D. Cunningham Director. Builder's Signature. Date 19th March, 1954.

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... No If not, state date of approval 4-11-1953

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 electrical installation of this vessel has been fitted on board under Special Survey, tested under working conditions and found satisfactory. The quality of materials and workmanship is good.

SMW
26/3/54

noted JS
8/4/54

Total Capacity of Generators 375 Kilowatts.

The amount of Fee ... £ 98 : 5 :
 1/5th to Liverpool £ 19 : 13 :
 4/5th to Glasgow £ 78 : 12 :
 Travelling Expenses (if any) £ 1 : 18 : 6
 Glasgow.

When applied for, At L.R. 19
 When received, 19

Fred B. Mort
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 30 MAR 1954

Assigned See Genl. F.E. Mch. Rpt. 25109

30.1.53. - 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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