

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

29 MAY 1957

Received at London Office

Date of writing Report 8-5-1957 When handed in at Local Office 25.5.1957 Port of GLASGOW

No. in Reg. Book 91677 Survey held at GREENOCK Date, First Survey 30.11.56 Last Survey 2.5.1957  
(No. of Visits 9)

on the S.S. "AYRSHIRE" Tons { Gross 9360 Net 5302

Built at GREENOCK By whom built THE GREENOCK DOCKYARD CO. LTD Yard No. 488 When built 1957

Owners THE CLAN LINE STEAMERS LTD. Port belonging to GLASGOW

Installation fitted by ARCH<sup>d</sup>. WATSON & DUNDAS LTD. When fitted 1957

Is vessel equipped for carrying Petroleum in bulk NO 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 Two wire Voltage of Lighting 220

Heating 220 Power 220 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 — Position of Generators Port and starboard

sides, aft 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

thwartships, aft 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 "Sindango", 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 breaker fitted with

overcurrent, reverse current and undervoltage trips. and the switch and fuse gear (or circuit breakers) for each outgoing circuit Double pole circuit breaker fitted with overcurrent trips, or double pole knife switch and fuses.

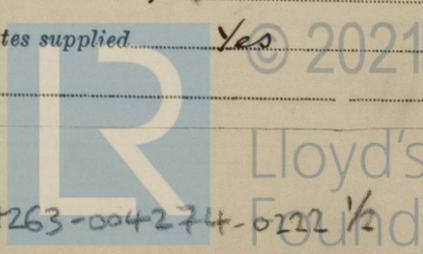
Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 4 ammeters 4 voltmeters — synchronising devices. For compound machines in parallel are the ammeters and reverse current protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided Earth lamps Preference Tripping, state if provided Yes, and tested Yes

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses Antic, 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 —, 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 1/2 lbs. 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 LCB and laundries LCB State how the cables are supported or protected Machinery spaces, LCB or LCAB cables clipped to steel plate or perforated tray. Main LCB or LCAB cables clipped to steel plate or perforated tray, or LCB cables in steel pipe. Accommodation LCB cables clipped to woodwork or steelwork.

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 Yes and test certificates supplied Yes Are the motors accessible for maintenance at all times Yes



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, except engine room floodlights which are drip-proof

Searchlights, No. of Wiring only 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 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 Yes Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes

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 \_\_\_\_\_, are all fuses of an Approved Cartridge Type \_\_\_\_\_, make of fuse \_\_\_\_\_ Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships \_\_\_\_\_ Are all cables lead covered as per Rule \_\_\_\_\_

E.S.D., if fitted state maker Helvin Hughes location of transmitter and receiver Frame space 104-105

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	4	W. H. Allen Sons & Co. Ltd.	300	220	1364	500	Oil	Ruston Hornsby.
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return test).	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	4	300	2	0.75"	1364	1564	168	VC	LC
" EQUALISER									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR GENERATOR									

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

DESCRIPTION.	No. of	Kw.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return test).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	In the Circuit.	Rule.		
Cargo Refrig Switchboard	4		2	0.5"	2120	2288	80 VC LC
Shore Supply	1		1	0.5"	500	572	180 "
Galley Equipment	1		1	0.06"	130	143	90 "
Forward Winches (Midship Contactor House)	1		1	0.4"	480	492	180 " LCAB
" (Main Mast House)	1		1	0.4"	387	492	360 "
" (Forecastle Contactor Room)	1		1	0.4"	240	492	240 "
Midship Winches (No 4 Hatch fwd)	1		1	0.2"	303	314	180 " LC
" (No 4 " aft No 5 fwd)	1		1	0.2"	247	314	180 "
Aft Winches (Capstan Contactor House)	1		1	0.15"	240	260	240 " "
" (No 5 Hatch aft No 6 fwd)	1		1	0.15"	240	260	180 " "

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 test).	INSULATION.	PROTECTIVE COVERING.	
			In the Circuit.	Rule.				
Navigation lighting and instruments etc	DB	1	7/044	22	31	150	Rubber	LC
Forward Accom. lighting	DB	1	7/044	23	31	150	"	"
Poop & aft lighting	DB	1	7/044	27	31	540	"	LCB
Midship lighting, port	DB	1	0.0225"	32	80	150	VC	"
" " starboard	DB	1	0.0225"	48	80	240	"	"
State Room lighting	DB	1	0.0225"	44	80	270	"	"
Saloon lighting	DB	1	0.0225"	30	80	150	"	"
Aft Cargo Space lighting	DB	1	7/044	23	31	360	Rubber	LCAB
Aft Cargo Space lighting	DB	1	7/044	10	31	60	"	LCB
Projector Illumination	DB	1	7/036	13	24	150	"	LC
Midship lighting	DB	1	7/044	22	31	540	"	LCAB
Aft Cargo lighting	DB	1	7/036	15	24	60	"	LC
Engine Room lighting, port	DB	1	0.0225"	26	80	60	VC	LCB
" " starboard	DB	1	0.0225"	26	80	120	"	"
Galley Equipment	DB	1	0.0225"	30	80	150	"	LC
Pantry Equipment (Bridge deck aft)	DB	1	0.0225"	70	80	180	"	"
" " " " fwd)	DB	1	0.0225"	30	80	330	"	"
Domestic Refrig. Equipment	DB	1	0.04"	95	110	180	"	LCB
Aft Accom. Ventm. & Power	DB	1	7/044	21	31	540	Rubber	LCAB
Midship Ventm.	DB	1	0.0225"	61	80	150	VC	LC
Engine Room Ventm.	DB	1	0.0225"	65	80	240	"	"
Sk. W. Oil Heater Unit (Engine Room)	DB	1	0.0225"	41	80	180	"	"
Workshop Machinery	DB	1	7/044	18	31	90	Rubber	LCB
Gyro Compass	DB	1	7/036	10	24	360	"	"
Winches	DB	1	0.0225"	15	80	390	VC	LC
Radar	DB	1	0.0225"	7	80	390	"	"
CO2 Heater (Refrig Machinery)	DB	1	7/044	15	31	150	Rubber	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return test).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	In the Circuit.	Rule.		
Steering Gear	2	55	1	0.15"	210	260	570 VC LC
Extraction Pumps	2	18	1	0.0225"	72	80	160 " "
Forced Lub Oil Pumps	2	20	1	0.03"	78	92	160 " "
Oil Burning Units	2	4.5	1	7/036	19.5	24	260 Rubber " "
F.W. Air Pump	1	6	1	7/044	25	31	180 " "
Main Air Water Pump	1	105	1	0.3"	400	408	270 VC " "
Gen. Service & Ballast Pumps	2	29	1	0.06"	114	143	240 " "
Forced Draught Fans	2	32	1	0.06"	125	143	240 " "
Bilge & Sanitary Pumps	2	14	1	0.0225"	56	80	270 " "
Oil Fuel Transfer Pumps	2	11	1	0.0225"	42	80	240 " "
Air Compressor	1	5	1	7/044	21	31	240 Rubber " "
Turning Gear	1	6	1	7/044	25	31	180 " "
Engine Room Vent Fans	6	4	1	7/036	16	24	300 " "
Winches	1	64	1	0.2"	242	314	180 VC " "
Winches	20	34	1	0.06"	140	143	240 " "
Capstans	2	34	1	0.06"	140	143	180 " "
Cargo Refrig Motors.	3	105	1	0.3"	390	408	180 VC LC
Compressors	5	10	1	7/064	41	46	90 Rubber " "
Brine Pumps	2	18	1	0.0225"	72	80	270 VC " "
Air Water Pumps	4	15	1	0.0225"	59	80	480 " "
Cooler Fans	4	11.4	1	0.0225"	44	80	330 " "
" " " "	2	7.25	1	0.0225"	30	80	480 " "
" " " "	2	5.5	1	7/044	23	31	480 Rubber " "
" " " "	4	4.9	1	7/036	19	24	480 " "
" " " "	2	3.8	1	7/036	16	24	330 " "

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.

*Wm Watson & Co Ltd* Electrical Contractors. Date *10/5/57*  
*W. Watson (Wm Watson)*

COMPASSES.

Have the compasses been adjusted under working conditions. *Yes*

**THE GREENOCK DOCKYARD CO. LTD.**  
*James Brown* Builder's Signature. Date *13/5/57*  
 SECRETARY

Have the foregoing descriptions and schedules been verified and found correct. *Yes*

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

Plans. Are approved plans forwarded herewith. *No* If not, state date of approval. *18-9-1956*

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.*

Total Capacity of Generators *1200* Kilowatts.

The amount of Fee ...	£ 162 : -	When applied for,
<i>1/5th to London</i>	£ 32 : 8	<i>at 19</i>
<i>4/5ths to Glasgow</i>	£ 129 : 12	
Travelling Expenses (if any)	£ 3 : 15	When received,
<i>London</i>		19
<i>Glasgow</i>	£ 2 : 1	

*Fred B. Mox*  
 Surveyor to Lloyd's Register of Shipping.

GLASGOW 28 MAY 1957

Committee's Minute  
 Assigned *See Greenock Report No 25915*

2m.455.—Transfer. (MADE AND PRINTED IN ENGLAND) (The Surveyors are requested not to write on or below the space for Committee Minutes.)

*SMC 25/5/57*

