

22 OCT 1959

No. 116492

Rpt. 13.

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report 19-9-59 When handed in at Local Office 19.10.59 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Smith's Docks, North Shields Date, First Survey 31.7.59 Last Survey 14.9.59

Reg. Book. (No. of Visits 9)

12420 on the Tanker M.V. "PULBOROUGH" ex "GERTRUDE WIENER"

Built at Bremen By whom built Rolandwerft G.m.b.H. Yard No. - When built 1956

Owner Stephenson Clarke Limited, Port belonging to London, British. When fitted 1956

Installation fitted by Siemens Schuckertwerke T.B. Bremen

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

Plans, have they been submitted and approved Noted System of Distribution D.C. &amp; A.C. 2 wire 3 phase 3 wire. Voltage of Lighting 110

Heating - Power 380 D.C. or A.C., Lighting A.C. &amp; D.C. Power A.C. If A.C. state frequency 50

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 - and level compounded under working conditions -

Are the generators arranged to run in parallel No Is the compound winding connected to the negative or positive pole - Have certificates of test for machines

Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing - Position of Generators in engine room, main alternator

under 100 kw. been supplied and the results found as per Rule - sets port and starboard shaft generator aft, rotary converter set above main switchboard.

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 in engine room along forward,

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 dead front type if of synthetic insulating

material is it an Approved Type - 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 O/L trips, closing of

circuit breaker also operates bus bar splitter switch preventing alternators from operating in parallel

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Triple pole or double pole circuit breakers

fitted with thermal O/Ls

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule - Instruments on main switchboard 6-A.C. 3-D.C.

ammeters 3 D.C. 3 Frequency Meters 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 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 are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 50% Cables, are they insulated and protected as per Rule -

devices operate - 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. -

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 V.I.R. Mesh Braided, galleys V.I.R. Mesh Braided

and laundries - State how the cables are supported or protected Clipped to tray, woodwork or metal

work, mains along tank tops in pipe

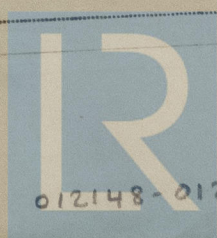
Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes Are all cables passing through decks and watertight

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 -

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

Are the motors accessible for maintenance at all times -



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes Emergency Supply, state position 110 volt Battery in Box Boat Deck.

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 Yes state battery capacity in ampere hours 110 volts, 100 A.H. 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 -

Searchlights, No. of 1 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 Yes 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 -

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 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 Atlas Werke location of transmitter and receiver D.B.ford. of ford. cofferdam stbd. side

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.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN A.C.	2	Hans Still A.G. Hamburg	45	230	400 81	1000	Diesel	Daimler Benz
D.C.	1	Siemens Schuckert	40	230	174	1000/1500	Chain Driven from Prop. Shaft.	
EMERGENCY ROTARY TRANSFORMER	1	Siemens Schuckert	37 KVA	380	56	1500	Motor	Siemens Schuckert

#### 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. mm.	In the Circuit.	Rule.			
MAIN GENERATOR A.C.	2	45	1	50	81	65	40	Rubber	L.C. Mesh B. 3C
EQUALISER									
" Shaft (D.C.)	1	40	1	95	174	152	70	"	" 2C
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR	1	34	1	95	179	152	18	"	" 2C
" GENERATOR	1	37 KVA	1	25	56	45	12	"	" 3C

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

DESCRIPTION.

#### 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. mm.	In the Circuit.	Rule.			
FROM MAIN SWITCHBOARD 380 VOLTS A.C.							
Shore Connection Box	1	35	60	55	80	Rubber	L.C. MESH B. 3C
Calorifier 6 KW.	1	2.5	13	15	50	"	" 3C
Oil Heater 4 KW.	1	1.5	8.7	7	60	"	" 3C
Wireless Supply.	1	2.5	10	15	120	"	" 3C
Aux. Boiler Panel	1	1.5	6.1	7	65	"	" 3C
Gyro Compass Supply	1	1.5	10	7	120	"	" 3C
Galley Range 2.5 KW.	1	1.5	4.1	7	100	"	" 3C
FROM MAIN SWITCHBOARD 110 Volts A.C.							
Bridge Lighting	1	4	12	20	120	"	" 3C
Engine Room Lighting Port							
" " " Stbd.	1	6	20	24	100	Rubber	" 3C
Accom. Lighting Panel II	1	4	15	20	120	"	" 3C
Radar Supply							
FROM MAIN SWITCHBOARD 110 Volts D.C.							
Battery Charging	1	6	24	30	100	"	" 2C
Emergency Lighting Eng. Room							
Socket Outlets " "							
" " Upper Deck	1	4	12	20	100	Rubber	" 2C
Emergency Lights. Panel II	1	2.5	10	15	100	"	" 2C
Galley Panel	1	1.5	9	7	100	"	" 2C
Water Boiler	1	2.5	8	15	130	"	" 2C
Navigation Light Panel	1	2.5	5	15	250	"	" 2C
Suez Canal S/L							

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.				INSULATION.	PROTECTIVE COVERING.
FROM MAIN SWITCHBOARD.								
Steering Gear	1	2.8	1	1.5	6	7	110	Rubber L.C. MESH B. 3C
Engine Room Vent Fans	2	.5	1	1.5	1.1	7	100	" " 3C
Accom. Vent Fans	2	.5	1	1.5	1.1	7	100	" " 3C
Boiler Blower	1	1	1	1.5	2.1	7	80	" " 3C
Forced Draught Fan	1	1	1	1.5	2.1	7	80	" " 3C
Boiler Feed Pump.	1	3	1	1.5	5	7	70	" " 3C
Cargo Oil Pumps.	2	41	1	35	60	55	40	" " 3C
O.F. Transfer Pump.	1	1	1	1.5	2.1	7	50	" " 3C
S.W. Cooling Pump.	1	11	1	4	17	20	65	" " 3C
General Service Pump.	1	11	1	4	17	20	250	" " 3C
Condensate Pump.	1	1	1	1.5	1.5	7	65	" " 3C
Refrig. Compressor.	1	1.5	1	1.5	2.8	7	100	" " 3C
Windlass Motor	1	15	1	6	23	24	250	" " 3C
Spare L.O. Pump.	1	4	1	1.5	8.7	7	40	" " 3C
L.O. Pump.	1	.5	1	3/.036	1.1	10	60	" L.C.B. 3C
Cond. Circ. Pump.	1	3	1	1.5	5.1	7	60	" L.C. MESH B 3C
FROM MAIN SWITCHBOARD 110 VOLTS A.C.								
Tank Gas Freeing Fan.	1	.5	1	1.5	1.1	7	100	Rubber " 3C
Socket Outlets								
FROM MAIN SWITCHBOARD 110 VOLTS D.C.								
F.W. Pump.	1	1	1	1.5	10	7	45	Rubber L.C. MESH B. 2C
S.W. Pump.	1	1	1	1.5	10	7	45	" " 2C

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.

Electrical Contractors.

Date

#### COMPASSES.

Have the compasses been adjusted under working conditions.

Builder's Signature.

Date

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 (Noted)** If not, state date of approval.

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

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.)

The electrical equipment of this vessel was originally installed under Germanischer Lloyds survey, and so far as can be ascertained has been operating satisfactorily.

The equipment has been surveyed at this time for purpose of classification and the following modifications have been effected :-

Pump room vent fan of the watertight type fitted in ventilation ducting now removed from ship. Access manholes to cofferdam in space now used as ships office on port side welded up, (one access manhole to this cofferdam is situated in pump room).

On completion of repairs, and modifications, the equipment was seen under working conditions during sea trials. Electric windlass, and steering gear tested, shaft driven generator tried, and all found to be in order. The loading on the generators was found to be satisfactory with regard to main cables (See London letter dated 10.9.59.) The gas-freeing equipment is by Messrs. Siemens Schuckertwerke and was placed in good order. Insulation test of all circuits taken and found satisfactory.

The equipment as installed is suitable in my opinion for a ship classed with this Society.

Total Capacity of Generators **130** Kilowatts.

The amount of Fee **SEE Rpt 9** : When applied for,

19.

When received,

19.

Travelling Expenses (if any) £

Surveyor to Lloyd's Register of Shipping.

J.C. WRIGHT.

Committee's Minute

Assigned

See Rpt 1

FRIDAY 4 DEC 1959



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