

Rpt. 13

No. 52553

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 7 - 9 - 19 61. When handed in at Local Office 19 Port of ROTTERDAM.

No. in Survey held at Gorinchem Date, First Survey 21-11-1960 Last Survey 13-9-1961.
Reg. Book (No. of Visits 30)

1/40249 on the m.s. "BRITA DAN" Tons Gross 3000 Net 1700

Built at Gorinchem By whom built Bijker's Aannemingsbedrijf Yard No. 163 When built 1961.

Owners J. Lauritzen Port belonging to Esbjerg.

Installation fitted by N.V. van Rietschoten & Houwens When fitted 1961.

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. -- Radar yes

Plans, have they been submitted and approved yes System of Distribution 3 pole 3 wire Voltage of Lighting 220

Heating 440/220 Power 440 D.C. or A.C. Lighting A.C. Power A.C. If A.C. state frequency 60

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 yes Is the compound winding connected to the negative or positive pole --

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 PS, centre and stbd. side

E.R. floorlevel forward

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 1st platform E.R.

forward PS.

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 C/B's with no volt; O.L.; pref. tripping and rev. power relays

and the switch and fuse gear (or circuit breakers) for each outgoing circuit. triple pole switches and fuses and triple pole contactors with triple pole fuses as "back up" protection.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. yes. Instruments on main switchboard 24

ammeters 3 voltmeters 2 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 105% FLKW & 110% FLC, and tested yes

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

make of fuses Siemens & Artie, are all fuses labelled yes. If circuit breakers are provided for the generators, at what overload do they operate thermal relay + 150% FLC & 300 direct, and at what current do the reverse current protective devices operate - 10% FLKW

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% 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 VC, LCB & VIR, LCB HR type VC, LCB & VIR, LCB and laundries VC, LCB & VIR, LCB. State how the cables are supported or protected

Machinery spaces: clipped to steel trays or in pipe.

Acc. spaces: clipped to wooden grounds or in PVC conduit.

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 --



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

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 ampère hours...24 H. - 200 A.H. Where required to do so does it comply with 1948 International Convention...---...

Lighting, is fluorescent lighting fitted...yes... If so, state nominal lamp voltage...220... and compartments where lamps are fitted...E.R.

Steeringgear room and galley.

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...2... whether fixed or portable...fixed... 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...yes... 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...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...Kelvin Hughes... location of transmitter and receiver...frame space 92-93.

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				TYPE	PRIME MOVER	MAKER
			Kw. per Generator	Volts	Ampères	Revs. per Min.			
MAIN ...	3	Thrige	173	450	276	514	Diesel	B.M.W.	
EMERGENCY ROTARY TRANSFORMER									

GENERATOR CABLES

DESCRIPTION	No. of	Kw.	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return) in m.	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands mm.	In the Circuit	Rule			
MAIN GENERATOR ...	3	173	2	3 x 70	276	296	6	VC	LCB
" " EQUALISER ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR ...									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.)

DESCRIPTION									
Sectionboard power Accomm.	SP	1	2x1x38.7	118	150	6	VC	LCB	
Sectionboard heating	SH	1	2x1x38.7	118	150	6	"	"	
Sectionboard lighting	SL	1	2x1x38.7	150	150	6	"	"	

DESCRIPTION			CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return) in m.	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands mm.	In the Circuit	Rule			
MOTOR CABLES									
<u>From Power D.F.B. 6P</u>									
Freshw. & Seaw. coolingp.	1	12	1	3 x 4.5	14.5	21.5	20	VC	LCB
Aux. fresh & seaw. coolingp.	2	7	1	3 x 2.5	9.2	13	12	VIR	"
L.O. turbo blower	2	1.5	1	3 x 2.5	2.6	13	2	"	"
F.O. transfer pump	1	13	1	3 x 6.45	17.5	31	3	VC	"
<u>From Power D.F.B. 7P</u>									
Refr. Compressor	2	9	1	3 x 2.5	13	13	6	VIR	"
Fan condenser	4	0.5	1	3 x 1.5	4	7	25	"	"
Defroster	2	1.5 KW	1	3 x 1.5	4	7	6	"	"
<u>From Power D.F.B. 8P</u>									
Lathe	1	3 KW	1	3 x 2.5	6.4	13	8	"	"
Grinding machine	1	1	1	3 x 2.5	1.5	13	7	"	"
Welding machine	1	14.6 KVA	1	3 x 6.45	26	31	20	VC	"
Freshw. heater	1	15 KW	1	3 x 4.5	20	21.5	6	"	"
Drilling machine	1	1.5	1	3 x 2.5	4	13	8	VIR	"
<u>From Power D.F.B. 9P</u>									
Fan E.R.	2	8	1	3 x 4	11	16	5	"	LC PVC sheathed
<u>From Power D.F.B. 10P</u>									
Fan cargoholds	2	7.5	1	3 x 2.5	9.5	13	10	"	" " "
" " "	6	5	1	3 x 2.5	7	13	25	"	" " "
<u>From Power D.F.B. 11P</u>									
Press fan	2	10	1	3 x 4	12.5	16	10	"	" " "
Heater fans	4	12.8 KW	1	3 x 6	18	21	4	"	" " "
Fan prov. room	1	1	1	3 x 2.5	1.5	13	7	"	" " "
" galley	1	1	1	3 x 2.5	1.5	13	35	"	" " "
Exhaust fan toilets	1	3	1	3 x 2.5	4.2	13	7	"	" " "
<u>From Power D.F.B. 12 P</u>									
Winches midship	2	33	1	3 x 38.7	90	102	5	VC	" " "
Hanger winches	2	5	1	3 x 2.5	7	13	10	VIR	" " "
<u>From Power D.F.B. 13 P</u>									
Winches stbd.	2	33	1	3 x 38.7	90	102	5	VC	" " "
Hanger winches	2	5	1	3 x 2.5	7	13	5	VIR	" " "
<u>From Power D.F.B. 14 P</u>									
Winches PS	2	33	1	3 x 38.7	90	102	6	VC	" " "
Hanger winches	2	5	1	3 x 2.5	7	13	5	VIR	" " "
<u>From Power D.F.B. 15P</u>									
Winches	2	33	1	3 x 38.7	90	102	6	VC	" " "
Hanger winches	2	5	1	3 x 2.5	7	13	10	VIR	" " "
Compressor Spray plant	1	7.5	1	3 x 4	10	16	40	"	" " "
									P.T.O.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) in M.	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
<u>DISTRIBUTION CABLES</u>							
Power D.F.B. heating bridged.stbd.	5H	1	2 x 25	56	63	30	VIR HR type
" " " h. upperd.stbd. fore	6H	1	2 x 25	56	63	25	" " "
" " " " " stbd.aft	7H	1	2 x 25	56	63	30	" " "
" " " " " tweend. stbd.	8HA	1	2 x 10	29	49	20	" " "
" " " " " ps.	8HB	1	2 x 10	26	49	30	" " "
<u>Lighting D.F.B.'s From Sectionboard SL</u>							
"NAV"	N	1	2 x 2.5	3	15.5	5	" LCB
NAUT.	1L	1	2 x 6.45	22	39	30	VC "
Boatdeck	2L	1	2 x 6	20	29	35	VIR "
Bridgedeck ps	3L	1	2 x 6	19	29	30	" "
" " stbd.	4L	1	2 x 4	14	22.5	25	" "
Lighting upperdeck	5L	1	2 x 4	11	22.5	30	" "
" " " "	6L	1	2 x 4	16	22.5	15	" "
" " " " " tween "	7L	1	2 x 6	24	29	21	" "
Decklighting & Cargoh.	8L	1	2 x 19.35	59	93	30	VC "
Decklighting & Cargoh.	9L	1	2 x 19.35	53	93	60	" "
E.R. casing	10L	1	2 x 2.5	8	15.5	15	VIR "
E.R.	11L	1	2 x 2.5	4.5	15.5	7	" "
E.R.	12L	1	2 x 2.5	4.5	15.5	11	" "

220 V.
A.C.

DESCRIPTION	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return) in M.	INSULATION	PROTECTIVE COVERING
	No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands.	In the Circuit	Rule			
<u>DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.)</u>							
<u>Power D.F.B.'s from Main switchboard</u>							
E.R. stbd. aft	2P	1	3 x 4.5	12.4	21.5	30	VC LCB
E.R. stbd. forward	3P	1	3 x 38.7	78.5	102	5	" "
E.R. ps. forward	4P	1	3 x 14.5	33.7	54	6	" "
E.R. ps. aft	5P	1	3 x 25.8	71	78	5	" "
E.R. ps. forward	6P	1	3 x 14.5	38.5	54	23	" "
Refr. plant	7P	1	3 x 6.45	30	31	35	" "
Workshop	8P	1	3 x 19.35	44	68	11	" "
Fans E.R.	9P	1	3 x 9.35	22	40	35	" "
Vent. holds	10P	1	3 x 25.8	69.5	78	28	" "
Vent. Accommodation	11P	1	3 x 38.7	85	102	33	" "
Winches ps	12P	1	3 x 38.7	97	102	28	" "
Winches stbd.	13P	1	3 x 38.7	97	102	28	" "
Winches ps	14P	1	3 x 38.7	97	102	58	" "
Winches stbd.	15P	1	3 x 38.7	97	102	58	" "
Catering Department	1D	1	3 x 25.8	72	78	40	" "
<u>Power D.F.B. from Sectionboard SP</u>							
Power D.F.B. E.R. ps. aft	1P	1	3 x 4.5	6.6	21.5	25	" "
<u>Power D.F.B. from Sectionboard SL</u>							
Heating Nav. Bridgedeck	1H	1	2 x 25	48	63	28	VIR HR type
Domestic Service	2D	1	3 x 6	16	33	30	" LCB
<u>Power D.F.B. from Sectionboard SH</u>							
Heating boatdeck ps.	2HA	1	2 x 10	26	38	35	" HR type
Heating boatdeck stbd.	2HB	1	2 x 16	36	49	30	" " "
Heating bridgedeck ps. forward	3H	1	2 x 25	49.5	63	35	" " "
Heating bridgedeck ps. aft	4H	1	2 x 25	56	63	40	" " " (cont.)
<u>MOTOR CABLES</u>							
<u>ALL IMPORTANT MOTORS TO BE ENUMERATED</u>							
	No.	B.H.P.					
Air compressor	2	42	1	3 x 19.35	58	68	9 VC LCB
Fire extinguishing pump	1	24	1	3 x 9.35	30	40	5 " "
L.O. pump	2	24	1	3 x 9.35	32	40	30 " "
Fresh coolingw. pump	1	12	1	3 x 4.5	14.5	21.5	25 " "
Capstan	1	44	1	3 x 19.35	55	68	46 " "
Steering gear	2	12	1	3 x 4.5	16	21.5	30 " "
Windlass	1	50	1	3 x 25.8	75	78	70 " "
Turbo charger	1	27	1	3 x 9.35	35	40	25 " "
Sea coolingw. pump	1	12	1	3 x 4.5	14.5	21.5	15 " "
<u>From Power D.F.B. 1P</u>							
Hydrophores	3	2	1	3 x 2.5	2.8	13	2 VIR "
<u>From Power D.F.B. 2P</u>							
F.O. circ. pump	2	1.5	1	3 x 2.5	2.7	13	5 " "
Turning gear	1	3.5	1	3 x 2.5	7	13	15 " "
<u>From Power D.F.B. 3P</u>							
F.O. separator	2	5	1	3 x 2.5	6.4	13	9 " "
Lubr. and D.O. Sep.	2	4	1	3 x 2.5	5.5	13	15 " "
Oil preheaters	4	15 KW	1	3 x 4.5	20	21.5	8 VC "
<u>From Power D.F.B. 4P</u>							
Bilge sanitary pump	1	17	1	3 x 6.45	23	31	18 " "
Fan main switchboard	1	85 W.	1	3 x 1.5	0.1	7	3 " "
Ballast pump	1	17	1	3 x 6.45	20.5	31	3 VC "
Hotw. Circ. pump+drinking.	2	0.2	1	3 x 2.5	0.5	13	18 VIR "
Brine pump and cond.pump	2	1	1	3 x 2.5	1.4	13	11 " "
Ejector pump	1	5.5	1	3 x 2.5	6.9	13	25 " "
<u>From Power D.F.B. 5P</u>							
F.O. heater	2	15	1	3 x 4.5	20	21.5	19 VC "
Bilge sanitary pump	1	17	1	3 x 6.45	23	31	11 " "
Heating bilgewater sep.	1	6 KW	1	3 x 2.5	8	13	8 VIR "

2/6
27/1/6

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.

Van Rietschoten & Houwens
 Electrotechnische Maatschappij N.V.

Electrical Contractors.

Date

18/9/61

COMPASSES

Have the compasses been adjusted under working conditions yes

[Signature] Bijker's Aannemingsbedrijf N.V.
 IJSSELWERF
 GORINCHEM

Builder's Signature.

Date

27/9/61

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 RITVA DAN

Plans. Are approved plans forwarded herewith no If not, state date of approval Secr. letter of 5.4.1961.

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 equipment of this ship has been installed under Special Survey in conformity with the Society's Rules and Regulations and in accordance with the Secretary's letter and the approved plans or equivalent thereto.

The materials used are of a good quality and the design and workmanship are good.

On completion the equipment has been tried out under full working conditions and found satisfactory, subject to alteration of the generator sets /= This equipment is in my opinion suitable for a classed ship.

/= to make the generating equipment suitable for running in parallel up to the rated load before the 1st April, 1962.

Total Capacity of Generators 519 Kilowatts.

The amount of Fee ... £ Fl. 1079,- When applied for, 31 OCT. 1961

Travelling Expenses (if any) £ fl 264,50 When received, 19

[Signature]
 Surveyor to Lloyd's Register of Shipping
 F.N. Nootboom.

Committee's Minute FRIDAY 1-DEC 1961

Assigned Subpr. 1

5m, 3, 58—Transfer. (MADE AND PRINTED IN ENGLAND) (The Surveyors are requested not to write on or below the space for Committee Minute.)

4-VRMS
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