

21 NOV 1958

Rpt. 13.

No. 17277

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

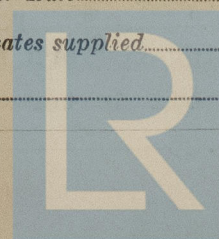
Received at London Office

Date of writing Report 13-11-1958 When handed in at Local Office 19 Port of Copenhagen
 No. in Survey held at Elsinore Date, First Survey 17-9-58 Last Survey 6-11-1958
 Reg. Book. (No. of Visits 19)
64196 on the m.v. "TENNA DAN" (ex "HÖEGH TRADER") Tons { Gross 5114.76
 Net 2839.55
 Built at Beaumont - Texas By whom built Pennsylvania SHPYDS Inc Yard No. 295 When built 1944
 Owners J. Lauritzen Port belonging to Esbjerg
 Installation fitted by Pennsylvania Shipyards Inc. When fitted 1944
 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 Three - Wire Voltage of Lighting 120
 Heating 240 Power 240 D.C. or A.C., Lighting DC Power DC 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 -
 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 - Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule - Position of Generators In engine room
starboard side - inboard and outboard
 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 starboard on first platform
 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 Steel plate dead front & totally inclosed 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 Each generator:- 1200 Amp. 3 pole linked circuit breaker with overload and reverse current trips and a five pole isolating switch.
Emergency generator:- 100 Amp. 3 pole linked circuit breaker with overload & reverse - current trips.
and the switch and fuse gear (or circuit breakers) for each outgoing circuit 2 and 3 pole linked circuit breakers
Emergency circuit:- 2 & 3 pole linked switches & fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 6
 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 yes Earth Testing, state means provided ground lamps and switch & ground detecting system Preference Tripping, state if provided -, and tested -
 Switches, Circuit Breakers and Fuses, are they as per Rule yes - A.J.E.E., are the fuses an Approved Type yes A.J.E.E. make of fuses -, are all fuses labelled yes If circuit breakers are provided for the generators, at what overload do they operate 25%, and at what current do the reverse current protective devices operate 10% Cables, are they insulated and protected as per Rule A.I.E.E. standards if otherwise than as per Rule are they of an Approved Type yes, state maximum fall of pressure between bus bars and any point under maximum load 3 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 Lead covered, galleys Lead covered and laundries - State how the cables are supported or protected Clipped to steel brackets
 In hold spaces protected by sheet metal guards - clipped to brackets in accommodation -

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 Domestic 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 yes



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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 Boat deck starboard-diesel driven emergency generator with load transference switch from emergency board to main switch board and a mecha interlocked contractor to avoid generator be 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 - 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 1 whether fixed or portable Portable are they of the carbon arc or of the filament type yes AIEE-Standards

Heating and Cooking, is the general construction as per Rule - 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 - 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 - location of transmitter and receiver -

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	2	General Electric	250	240/120	1042	450	Diesel oil	ENTERPRISE Eng. & Fdry. Co.
EMERGENCY ROTARY TRANSFORMER	1	General Electric	15	240/120	62,5	1500	" "	Caterpillar Tractor Co.

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 Sq. ins. of conductors.	In the Circuit.	Rule.			
MAIN GENERATOR	2	250	2	1.4114	✓	1042	1606	54	V.C. Lead covered and
" " EQUALISER	2		2	1.4114	✓	-	1606	22	V.C. Basket Weave
Neutral	1		1	.274	✓	-	417	40	V.C. " " "
EMERGENCY GENERATOR	1	15	1	.052	✓	62,5	99	40	V.C. " " "
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR									

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

DESCRIPTION.									
Power Croup panel port - P.1.A.	2	.7844	853	1058	134	V.C.	Lead covered and		
" " " " - P.1.B	1	.3922	410	529	134	V.C.	Basket weave		
" " " " Stb. - P.1.C	1	.589	585	705	26	V.C.	armoured		
Cargo Winch feeders-P.5-P.16-P.17	2	.4712	732	752	266	V.C.	" " "		
Lifeboat " " P.27 & 28	1	.0658	75	117	412	V.C.	" " "		
Warping " " P.4	1	.104	130	219	542	V.C.	" " "		
Steering gear " P.3A - P.3B	1	.1318	154	256	444	V.C.	" " "		
Power distribution panel P 7	1	.0658	58	117	254	V.C.	" " "		
" " " " P 8	1	.0414	72	88	246	V.C.	" " "		
" " " " P 9	1	.0414	52	88	190	V.C.	" " "		
" " " " P10	1	.0261	39	65	160	V.C.	" " "		
" " " " P12	1	.0261	44	65	170	V.C.	" " "		
Magnetic coupling feeders P.23-24	1	.01045	92	219	138	V.C.	" " "		
Generator fuel oil heaters P.21-P.22	1	.008	21,7	30	152	V.C.	" " "		
Test panel - P.25	1	.0261	50	65	252	V.C.	" " "		

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 Sq. ins. of conductors.	In the Circuit.	Rule.			
Shore connection box - P.13	2	.4712	600	752	200	V.C.	Lead covered &
Emergency switchboard- P.14	1	.0829	100	134	186	" "	basket weave
Lighting Distribution panel - BL 1	1	.0261	50	65	200	" "	armoured
" " " " - BL 2	1	.0658	90	117	-	" "	" "
" " " " panel HOLDS-L 3	1	.104	100	158	-	" "	" "
" " " " " L12	1	.008	10	30	-	" "	" "
" " " " " L14	1	.0414	70	88	-	" "	" "
" " " " " L13	1	.008	10	30	-	" "	" "
" " " " Eng. room BL 5	1	.0658	90	117	-	" "	" "
" " " " BL 6	1	.013	25	41	-	" "	" "
" " " " BL 9	1	.0261	50	65	-	" "	" "
" " " " L 10	1	.0163	35	47	-	" "	" "
" " " " L 14	1	.0163	35	47	-	" "	" "
" " " " Bridge BL19	1	.0163	35	47	400	" "	" "
" " " " Gally P 20	1	.1659	242	299	84	" "	" "
Wireless panel P.15	1	.261	31	65	240	" "	" "
Feeders EL.1A & EL.1B to emerg. lighting	1	.008	15	30	180	" "	" "
Panel bridge							
Emergency lighting panel EL 2	1	.0163	30	47	-	" "	" "
" " " " EL 3	1	.0206	40	55	-	" "	" "
" " " " EL 4	1	.008	10	30	-	" "	" "
" " " " EL 5	1	.0032	3	15	-	" "	" "
" " " " EL 6	1	.0032	1	15	-	" "	" "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.									
No.	B.H.P.								
Ballast pump	1	15	1	.0414	57	✓	88	92	V.C. Lead covered & basket
F.W. cooling pump	3	15	1	.0414	57	✓	88	58	" weave armoured
S.W. " "	3	25	1	.1045	93	✓	158	56	" " "
Lubricating oil pumps gear	3	20	1	.0658	74	✓	117	74	" " "
Lub. oil pumps f. reduction	2	5	1	.008	20	✓	30	110/114	" " "
Aux. bilge pump	1	15	1	.0414	57	✓	88	92	" " "
Main " "	1	15	1	.0414	57	✓	88	86	" " "
Fire pump	1	50	1	.1659	178	✓	299	110	" " "
Fire & general service pump	1	50	1	.1659	178	✓	299	66	" " "
Fuel oil transference pump	1	10	1	.0261	38	✓	65	106	" " "
Main start. air compr.	2	50	1	.1659	180	✓	299	48	" " "
Make up air compressor	1	5	1	.008	20,5	✓	30	-	" " "
Priming pump	1	1	1	.0051	4,1	✓	22	72	" " "
Sanitary pump	1	5	1	.008	19	✓	30	48	" " "
Fuel oil purifier	2	2	1	.0051	8,5	✓	22	60/52	" " "
Lubricating oil purifier	2	2	1	.0051	8,5	✓	22	60/62	" " "
Main engines turning gear	2	5	1	.008	18,5	✓	30	232	" " "
Reduction gear " "	1	2	1	.005	8,3	✓	22	250	" " "
Warping Winch	1	35	1	.104	130	✓	219	542	" " "
Anchor Windlass	1	50	1	.1659	183	✓	299	548	" " "
Steering gear pumps	2	35	2	.104	127	✓	219	30	" " "
Cargo winch forward	8	50	2	.1318	183	✓	256	260	" " "
" " after	4	50	2	.1318	183	✓	256	206/210	" " "
Fuel oil booster pumps	2	2	1	.0051	3,2	✓	22	140/160	" " "
Engine room ventilators	2	7,5	1	.0261	30	✓	65	412	" " "
Life boat winches	2	20	1	.0658	75	✓	117		" " "

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.

Is this installation a duplicate of a previous case. If so, state name of vessel.

Plans. Are approved plans forwarded herewith. 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.)

Classing:-

The electrical installation to the requirements of the American Bureau of Shipping has been in operation since 1944 and accepted by Det Norske Veritas. The plans attached have been examined and found to be in accordance with A.I.E.E. Marine Standards and generally in accordance with the Rules.

The material and workmanship are good and the installation has been examined under working condition and found to be satisfactory.

The dimensions in this Report have been taken from the A.B.S. approved plans. These dimensions have been checked as far as possible on the ship and found correct.

In my opinion the electrical installation is such as could be accepted by the Committee for Classification.

Total Capacity of Generators 515 Kilowatts.

ENTERED IN COPENHAGEN ROUGH FEE BOOK ON THE 19 NOV. 1958

The amount of Fee ... kr. 1260,- : When applied for, 19 NOV. 1958 19

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

C. E. Larsen.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIDAY 2 JAN 1959

Assigned See Rpt. 1.



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