

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report July 13, 19 59 When handed in at Local Office July 13, 19 59 Port of Baltimore, Maryland

No. in Survey held at Baltimore, Md. Date, First Survey June 2, Last Survey June 24, 19 59
Reg. Book. (No. of Visits 2)

63506 on the M.V. "HEDDA DAN" Tons { Gross 5188
Net 3046

Built at Beaumont, Texas By whom built Pennsylvania Shipyards, Inc. Yard No. When built 1944

Owners J. Lauritzen, Inc. Port belonging to Esbjerg

Installation fitted by Pennsylvania Shipyards, Inc., Beaumont, Texas 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. - Radar yes

Plans, have they been submitted and approved ABS. USCG. System of Distribution three wire DC 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 yes

if not compound wound state distance between generators - and from switchboard - Are the generators arranged to run

in parallel yes, are shunt field regulators provided yes Is the compound winding connected to the negative or positive pole

both Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing ABS 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, inboard and outboard floor level

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 engine room, starboard on

flat above floor level.

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 metal faced, 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 1300 Amps 3 Pol. linked circuit breaker with

overload and reverse current trips and a 1600 Amp four pole isolating switch, emergency generator

80 Amp. 3 pole linked circuit breaker with 0.1 and R.C. trips outgoing circuits: two and three pole linked

and the switch and fuse gear (or circuit breakers) for each outgoing circuit circuit breaker emergency circuits 2 & 3 pole lined

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 reversed current

protection devices connected on the pole opposite to the equaliser connection. yes Earth Testing, state means provided ground

lamps and switch also ground detecting system

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

make of fuses - are all fuses labelled yes If circuit breakers are provided for the generators, at what

overload do they operate 1300 Amp, and at what current do the reversed current protective devices operate 130 Amp

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule AIEE

Cables, are they insulated and protected as per Rule yes, if otherwise than as per Rule are they of an Approved Type AIEE

state maximum fall of pressure between bus bars and any point under maximum load 3 volts, are the ends of all cables having a sectional

area of 0.01 square inch and above provided with soldering sockets yes 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 Are cables in machinery spaces, galleys, laundries, etc., lead covered yes or run in conduit -

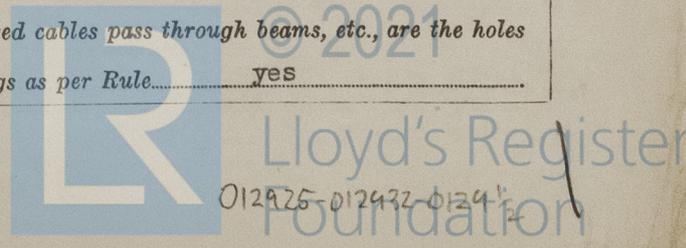
or of the "HR" type - State how the cables are supported or protected clipped to steel brackets in hold spaces

protected by sheetmetal 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 - both, where unarmoured cables pass through beams, etc., are the holes

effectively bushed yes Refrigerated Domestic chambers, are the cables and fittings as per Rule yes



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 side, diesel driven emergency generator with load transfers switch from emergency board to main switch board, and a mechanically interlocked contractor to avoid generator being connected to main switchboard.

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... -

Secondary Batteries, are they constructed and fitted as per Rule... - , are they adequately ventilated... - state battery capacity in ampere hours... -

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof... yes Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present... - if so, how are they protected... -

and where are the controlling switches fitted... - Are all fittings suitably ventilated... yes

Searchlight Lamps, 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... AIEE Standard, 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... ABS

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule... - Control Gear and Resistances, are they constructed and fitted as per Rule... AIEE Lightning Conductors, where required are they fitted as per Rule... AIEE

Ships carrying Oil having a Flash Point 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 the cables lead covered as per Rule... -

E.S.D., if fitted state maker... Submarine Signal Co., Boston, Mass. location of transmitter... frame 39/40 and receiver... frame 39/40

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.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ...	2	General Electric Co.	250	120/240	1040	450	Diesel Eng.	Enterprise Eng. Co.
EMERGENCY ROTARY TRANSFORMER	1	General Electric Co.	15	120/240	62.5	1200	" "	Catterpillar

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES. In the Circuit.	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 mm.				
MAIN GENERATOR ...	250	2	1.4140	1042	1558	60	V.C. LC & Armored
" " EQUALISER ...		2	1.4140	-	1558	40	" " " "
" " NEUTRAL		1	.2745	260	429	40	" " " "
EMERGENCY GENERATOR ...	15	1	.0521	62.5	128	40	" " " "
ROTARY TRANSFORMER: MOTOR							
" " GENERATOR...							

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

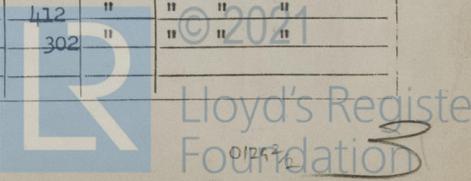
DESCRIPTION.									
Power Group Contr. Bd. Port	P.I.A.	2	.7844	852	1068	134	"	"	"
" " " " "	P.I.B.	1	.3922	410	534	134	"	"	"
" " " " Starb.	P.I.C.	1	.5890	584	696	26	"	"	"
Steering Gear Feeders P3A & P3B		1	.1318	154	273	440	"	"	"
Cargo Winches Aft.	P5	1	.5712	732	778	260	"	"	"
" " Fwd.	P16 & P17	2	.5712	732	778	266	"	"	"
Power Panel	P7	1	.0658	57	148	254	"	"	"
" " "	P8	1	.0414	72	111	246	"	"	"
" " Ventilation	P9	1	.0414	52	111	190	"	"	"
" " Workshop	P10	1	.0261	39	85	176	"	"	"
" " "	P12	1	.0261	44	85	170	"	"	"
Shore Conn	P13	2	.5712	580	778	200	"	"	"
Emerg. Sw Bd Bus Tie	P14	1	.0829	93	142	200	"	"	"
Power Panel	P20	1	.1659	241	310	84	"	"	"

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	No. in Parallel per Pole.	CONDUCTORS. Sectional Area or No. and Dia. of Strands. Sq. ins. or mm.	MAXIMUM CURRENT IN AMPERES. In the Circuit.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			ALIEE Rule.	ALIEE Rule.			
LIGHTING PANEL	BL1	1	.0261	50	70	-	V.C. L.C. & Armored
" "	BL2	1	.0658	90	122	-	" " " "
" "	L3	1	.1045	100	163	-	" " " "
" "	L4	1	.0414	70	92	-	" " " "
" "	BL5	1	.0658	90	122	-	" " " "
" "	BL6	1	.0130	25	46	-	" " " "
" "	BL8	1	.0082	15	42	-	" " " "
" "	BL9	1	.0261	50	70	-	" " " "
" "	L10	1	.0163	35	52	-	" " " "
" "	BL12	1	.0082	25	35	-	" " " "
" "	BL13	1	.0082	25	35	-	" " " "
" "	BL14	1	.0163	35	64	-	" " " "
" "	BL18	1	.0051	10	27	23	" " " "
" "	BL19	1	.0163	35	52	-	" " " "
Electric Ranges: IN-Bd & OUT-Bd		1	.0658	88	148	68	" " " "
Radio Equipment	P15	1	.0261	31	85	240	" " " "
Winch Heaters		1	.0051	1.6	27	44	V.C. L.C. & Armored
Resistor House Heaters		1	.0051	6.5	27	28	" " " "
Generator Fuel Oil Heaters		1	.0082	22	42	152	" " " "
Mag. Coupling P&S	P23 & P24	1	.1045	92	237	138	" " " "
Test Panel		1	.0261	50	70	252	" " " "
Emerg. Ltg. Panel	EL1A & EL1B	1	.0082	25	35	-	" " " "
" " "	EL2	1	.0163	35	52	-	" " " "
" " "	EL3	1	.0206	45	61	-	" " " "
" " "	EL4	1	.0082	15	42	-	" " " "
" " "	EL5	1	.0032	10	17	-	" " " "
" " "	EL6	1	.0032	6	17	-	" " " "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Salt Water Circ. Pumps	3	25	1	.1045	93.3	194	58	V.C. L.C. & Armored
Fire & Gen Service Pump	1	50	1	.1659	178.0	310	66	V.C. " " " "
Bilge Pump	1	15	1	.0414	56.8	111	86	" " " "
Fresh Water & Circ. Pumps	3	15	1	.0414	56.9	111	96	" " " "
Priming Pump	1	1	1	.0051	4.1	27	72	" " " "
Lube Oil Pumps	3	20	1	.0658	73.8	148	74	" " " "
Fuel Oil Transfer Pump	1	10	1	.0261	37.9	85	106	" " " "
" " Booster Pumps	2	.75	1	.0051	3.2	27	210	" " " "
Lube Oil Purifier Pumps	2	2	1	.0051	7.7	23	60	" " " "
Fuel " " "	2	2	1	.0051	7.7	23	60	" " " "
Starting Air Compressor	1	5	1	.0082	20.5	35	206	" " " "
Refrig. Comp	1	5	1	.0082	19.8	35	38	" " " "
" Cond. Circ. Pump	1	.75	1	.0051	3.1	27	80	" " " "
Lub. Oil Red. Gear Pumps	2	5	1	.0082	20	35	114	" " " "
Eng. Rm. Vent Star.	1	7.5	1	.0261	30	85	160	" " " "
" " " Port	1	8.5	1	.0261	34	85	140	" " " "
Ballast Pump	1	15	1	.0414	57	111	92	" " " "
Aux. Bilge Pump	1	15	1	.0414	57	111	92	" " " "
Salt Water Sanitary	1	5	1	.0082	19	35	48	" " " "
Fire Pump	1	50	1	.1659	178	310	110	" " " "
F.W. Circ. Make Up Pump	1	1.5	1	.0051	6.5	23	48	" " " "
" Drinking "	2	5	1	.0082	19	35	50	" " " "
Chilled Drinking Water Pmp	1	.5	1	.0051	2.3	27	220	" " " "
Main Air Comp. No. 1 & No. 2	2	50	1	.1659	180	310	48	" " " "
Steering Gear Motors	2	35	1	.1045	127	237	174	" " " "
Warping Winch	1	35	1	.1045	130	237	542	" " " "
Cargo Winches	12	50	1	.1318	183	273	60	" " " "
Misc. Vent Motor	20	Max 2	1	.0051	8.5	23	276	" " " "
Grinder	1	3	1	.0051	11.2	27	90	" " " "
Lathe	1	2	1	.0051	8.1	27	128	" " " "
Shaft Turning Gear	1	2	1	.0051	8.3	23	250	" " " "
Anchor Windlass	1	50	1	.1659	183	310	548	" " " "
Lifeboat Winches No. 1 & No. 2	2	20	1	.0658	75	148	412	" " " "
Eng. Turning Gears P & S	2	5	1	.0082	18.5	35	302	" " " "



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..... Yes, June 1959 by Wilfrid O. White, Baltimore.

..... 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..... yes If so, state name of vessel..... "MARNA DAN", "PAULA DAN", "GERDA DAN"

Plans. Are approved plans forwarded herewith..... yes 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, whether insulation tests, etc., have been made, opinions as to class, etc.).....

List of plans forwarded herewith.

Power System - Table of wire sizes and losses.

Emergency Power System - Elementary Wiring Diagram

Power System - Elementary wiring

Emergency Lighting - Elementary Wiring

Main Lighting System - Elementary Wiring

2m. 9.46.—Transfo. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minutes.)

Total Capacity of Generators..... 515 Kilowatts.

The amount of Fee £ \$300	:	When applied for,
		 19.....
Travelling Expenses (if any) £	:	:	When received,
		 19.....

William Insam
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... NEW YORK JUL 15 1959

Assigned..... Electric Light.



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