

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 30 MAY 1951

Received at London Office

Date of writing Report 15-3 1951 When handed in at Local Office 17-3 1951 Port of Rotterdam

No. in Survey held at Rotterdam Date, First Survey 30-6-49 Last Survey 2-3-1951
Reg. Book. (No. of Visits 42)

95576s on the Motor Tanker "SAN LORENZO" Tons Gross 11673.73 Net 6526.12

Built at Rotterdam By whom built Messrs P. Smit Yard No. 598 When built 3-51

Owners Yacimientos Petroliferos Fiscales Port belonging to Buenos Aires

Installation fitted by Messrs A. de Hoop N.V. When fitted 3-51

Is vessel equipped for carrying Petroleum in bulk. yes 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 insulated Voltage of Lighting 110

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, 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

negative pole Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing. yes Have certificates of test for machines under 100 kw. been supplied. yes and the results found as per Rule. yes

Position of Generators Main generators: E.R. floor level Motor generators (lighting): Boat deck Main generator 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. Power: E.R. 1st platform against forward bulkhead. lighting: boat deck

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 switchboards, 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 3-pole manually operated L.B. with O/C trips in twin poles and P/C trip in positive pole; third pole used for equaliser. L.B. equipped with P/R and a h/V. trip

and the switch and fuse gear (or circuit breakers) for each outgoing circuit D.P. or D.P. D.T. switches and D.P. fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. yes Instruments on main switchboard 9

ammeters. 2 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 earth

indicating lamps protected by D.P. fuses and connected to E through D.P. push button

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

make of fuses Schess, are all fuses labelled. yes If circuit breakers are provided for the generators, at what overload do they operate. DIRECT WORKING 1900 Amps - 20 SEC. WITH TIME DELAY 1300 Amps and at what current do the reversed current protective devices operate. 75 amp

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

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

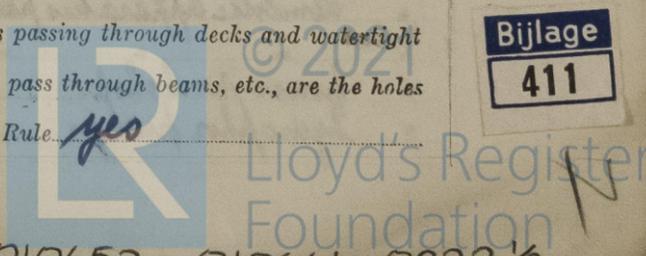
state maximum fall of pressure between bus bars and any point under maximum load. 66% are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets. yes

Are all paper insulated and varnished cambric insulated cables sealed at the ends. - 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. partly yes

or of the "HR" type. - State how the cables are supported or protected. Machinery spaces: h.l. & h.v.B. cable clipped to metal frame work or perforated plating Accommodation spaces: h.l. cable clipped to surface or held grounds under fire safe gangway. h.l. & h.v.B. cable fitted in a sheet iron trunk & covered with sheet iron plates

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



Bijlage 411

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

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes Emergency Supply, state position main supply
 Emergency battery placed on boat deck supplied part of lighting equipment auto-matically in case of failure yes
 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 and fitted as per Rule yes are they adequately ventilated yes
 state battery capacity in ampere hours Em. battery nickel iron type 92 cells / 100 amp hours / 110 volts make safe
 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 yes
 if so, how are they protected Flame proof fittings outside these spaces Are all fittings suitably ventilated yes
 and where are the controlling switches fitted outside these spaces Are they of the carbon arc or of the filament type —
 Searchlight Lamps, No. of —, 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
 Control Gear and Resistances, are they constructed and fitted as per Rule yes Lightning Conductors, where required are they fitted as per Rule — 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 yes, are all fuses of an Approved Cartridge Type yes, make of fuse Lehens Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships yes Are the cables lead covered as per Rule yes
 E.S.D., if fitted state maker Phyphes M.S. 21 location of transmitter double bottom p. 51 and receiver double bottom p. 51
 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			Revs. per Min.	TYPE.	MAKER.
			Kilowatts per Generator.	Volts.	Ampères.			
MAIN	2	B.T.M.	230	220	1045	420	Diesel engine Puhonmeister & Welsch	
	2	Smit Nikkerson	26	110	235	2000	elect. motor Smit Nikkerson	
Harbour	1	B.F.M.	30	220	139	1000	Diesel engine Krumpholt	
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) in meters.	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	230	5	185	1045	1175	30		
" EQUALISER	230	3	185	1045	705	14		
" EQUALISER	230	5	185	1045	1175	32		
lighting generator I	26	1	185	235	235	8		
" II	26	1	185	235	235	12		
HARBOUR GENERATOR	30	1	120	139	175	16		
ROTARY TRANSFORMER: MOTOR								
" GENERATOR								

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

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return) in meters.	INSULATION.	PROTECTIVE COVERING.
From main generators only							
Aux. switchboard placed on boat deck	1	110	100	175	90		N.H.R. h.l. & M.W.B.
central starting panel placed in E.R. controlled by P/R.	2	105	450	470	8		
G.F.B. domestic app. fan etc. aft	1	4	12.6	22.5	66		N.H.R. h.l. & M.W.B.
middle M.B.	1	35	66	70	100		
either from main generators or from harbour net controlled by P/R.							
G.F.B. refrigerating plant aft	1	35	61	70	200		
domestic apparatus fan etc. aft	1	4	12.5	22.5	164		N.H.R. h.l. & M.W.B.
power workshop	1	4	13.5	22.5	112		
hydrophor pumps	1	10	32	38	54		
	1	25	65	63	84		

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) in meters.	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.			
Continuation main distribution cables							
Supplied from aux. switchboard 220 volts; placed on boat deck							
Wireless equipment	1	25	6	63	220		N.H.R. h.l. & M.W.B.
alt. supply emergency bilge pump	1	50	87	99	20		
alt. supply part of main switchboard	1	50	46	99	102		
Aut. helms mark + RADAR + GYROCOMPASS	1	25	29	63	220		
Supplied from main switchboard lighting 110 volts; placed on boat deck							
From motor generators only							
Aux. lighting switchboard in E.R. part of main switchboard	1	185	235	235	20		N.H.R. h.l. & M.W.B.
From motor generators all from emergency battery							
G.F.B. emerg. lighting aft	1	4	9	22.5	66		
" " midship	1	4	45	22.5	60		
" " fore	1	4	16	22.5	230		
" " " " " " " "	1	4	12	22.5	100		N.H.R. h.l. & M.W.B.
" " " " " " " "	1	4	4	22.5	28		
" " " " " " " "	1	4	4	22.5	28		
" " " " " " " "	1	16	6	40	246		
" " " " " " " "	1	4	2	22.5	256		
Supply charging equipment 24 volts battery	1	1.5	7	15.5	20		
Supplied from aux. lighting switchboard 110 volts; placed in E.R. (part of main switchboard 220v)							
G.F.B. lighting aft	1	10	25	30	32		
" " midship	1	10	26	30	108		
" " fore	1	25	40	63	160		N.H.R. h.l. & M.W.B.
" " " " " " " "	1	16	14	40	162		
" " " " " " " "	1	4	14	22.5	52		
" " " " " " " "	1	4	17	22.5	40		
" " " " " " " "	1	4	14	22.5	116		
" " " " " " " "	1	16	16	40	166		

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) in meters.	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.			
Supplied from main switchboard 220 volts; from main generators only									
Steering gear motor 1	1	40	1	120	130	175	184		
" " 2	1	40	1	120	130	175	152		N.H.R. h.l. & M.W.B.
Turning gear motor 1	1	15	1	25	60	63	66		
" " 2	1	15	1	25	60	63	68		
Emergency bilge pump	1	22	1	60	87	99	108		
Oil fuel transfer pump controlled by P/R.	1	8	1	10	22.9	25	64		N.H.R. h.l. & M.W.B.
Ventilation fans accomm.	4	3.8	1	4	15.6	22.5	76-10		
Supplied either from main generators or from harbour net; controlled by P/R.									
Sub. oil separator	2	1	1	40	28	30	26-30		
Oil fuel centrifuges	2	1	1	10	28	30	70-72		N.H.R. h.l. & M.W.B.
Tackle motors	2	6	1	6	26.5	24	30-34		
Sanitary pump	1	6.5	1	40	27.3	30	60		
Harbour linking water pump	1	4	1	4	17.1	22.5	32		
Oil fuel day pump	1	1.5	1	2.5	4	15.5	70		
Supplied from aux. switchboard 220 volts; placed on boat deck									
Motor of motor generator lighting 1	41	1	1	120	157	175	25		N.H.R. h.l. & M.W.B.
" 2	41	1	1	120	157	175	52		
Supplied from central starting panel									
Sub. oil pump	1	110	2	150	400	410	31		
Fresh sealing water pump	1	36	1	95	130	150	20		N.H.R. h.l. & M.W.B.
Sub. oil pump	1	140	2	150	400	410	27		
Spare sealing water pump	1	36	1	95	130	150	26		
Sea sealing water pump	1	36	1	95	130	150	34		
Supplied from G.F.B. M.B. E.R.									
Hot water circulating pump	1	1	1	15	4.5	9.5	6		
Sea water hydrophor pump	1	3	1	4	12.7	22.5	8		N.H.R. h.l. & M.W.B.
Fresh water hydrophor pump	1	3	1	4	12.7	22.5	8		
Sealing water pump rep. equipm.	1	1.5	1	1.5	4.5	9.5	10		
Fresh water hydrophor pump	1	2	1	2.5	8.05	15.5	10		
Fresh water hydrophor pump	1	2	1	2.5	8.05	15.5	12		

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.

H. Vanderwijk

Electrical Contractors.

Date 20th April 1951

COMPASSES.

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

M. [Signature]

Builder's Signature.

Date 23rd April 1951.

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

*Limit 596 "Ductor Madriaga"
Limit 597 "La Plata"*

Plans. Are approved plans forwarded herewith. *no*

If not, state date of approval

9-3-50

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

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical equipment of this vessel has been installed under Special Survey in conformity with the Society's Rules and Regulations and in accordance with the approved plans, with the exception of the flame proof fittings in tween deck spaces. These fittings however are covered by a report issued by the K.K.M.A. (a Dutch independent testing Authority) and they are moreover altered in accordance with the Secretary's letter.

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.

This equipment is in my opinion suitable for a classed vessel having the notation "Carrying Petroleum in Bulk"

Note See 13/6/51

Total Capacity of Generators *400* Kilowatts.

The amount of Fee ...

£ 1425.-

When applied for, *22/2 19 51*

Travelling Expenses (if any) *£ 50.-*

When received, *14/3 19 51*

M. [Signature]

(H.V.D. SLUIS)

Surveyor to Lloyd's Register of Shipping.

FRI. 15 JUN 1951

Committee's Minute

Assigned

See FF mclly rpt.

