

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)

95576 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 R/L 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 2.P. or 2.P. 2.T. switches and 2.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 2.P. fuses and connected to E through 2.P. push button

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

make of fuses Scher, 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 750 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 46%, 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 from side by iron 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

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 automatically in case of failure
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 life*
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*
and where are the controlling switches fitted. *outside these spaces* Are all fittings suitably ventilated. *yes*
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. *chess* 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 make. *Alphagel M.S. 21* location of transmitter. *double bottom* *5/1* and receiver. *double bottom* *5/1*
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.

PARTICULARS OF GENERATOR						PRIME MOVER.		
DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT			Revs. per Min.	TYPE.	MAKER.
			Kilowatts per Generator.	Volts.	Ampères.			
MAIN	2	B.T. Al.	230	220	1045	420	Diesel engine	Armstrong & Co. Ltd.
	2	Smith Lickhiser	26	110	235	2000	Elect. motor	Smith Lickhiser
	1	B.T. Al.	30	220	139	1000	Diesel engine	Thornhout
Harbaur								
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH	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.	feet plus return ^{50%}		
MAIN GENERATOR I	230	5	185	1045	11 7/5	28	N.Y.R. L.L. & M. W.B.	
" " EQUALISER		3	185		7 05	14		
" " II	230	5	185	1045	11 7/5	32		
" " EQUALISER		3	185		7 05	16		
lighting generator I	26	1	185	235	2 35	8		
" " II	26	1	185	235	2 35	12		
HARBOR EMERGENCY GENERATOR	30	1	120	139	1 7/5	16		
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

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

Supplied from main distribution cables (to Section)

DESCRIPTION.
From main generators only

Anne smithboard placed on boat deck	1	40	100	75	98	N.H.R.
central starter panel placed in E.R.	2	105	450	470	8	R.C. & M.W.B.
→ controlled by P.R.						
[G.F.B. domestic app. heating circ. cl. "H.L."	1	4	12.6	22.5	66	N.H.R. R.C. & M.W.B.
" pentilation fans etc aft "H.A"	1	35	66	78	100	
" middle "H.P." "	1	10	33	30	160	
Either from main generators or from harbor net controlled by S/R.						
G.F.B. refrigerating plant aft "H.F."	1	35	61	78	200	N.H.R. R.C. & M.W.B.
" domestic apparatus penins. "H.G."	1	4	12.5	22.5	164	
" " " " "H.E."	1	4	13.5	22.5	112	
" power workshop "H.H."	1	10	32	38	54	
" hydrophor pumps "H.Y."	1	25	55	63	84	

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

DESCRIPTION.	CONDUCTORS.			MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return open).	INSULATION.	PROTECTIVE COATING.
	No. in Parallel or 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								
Airless equipment	1	25	6✓	63	229			N.B.R. & L. & M.W.B.
Alt supply emergency bilge pump	1	50	8✓	99	20			
Alt supply part of main switchboard	1	50	46✓	99	102			
Aut. helm motor + RADAR + GYROCOMPASS	1	25	29✓	63	229			
Supplied from main switchboard lighting 110 volts ; placed on boat deck								
From motor generators only	1	185	235✓	235	20			N.B.R. & L. & M.W.B.
Aux. lighting switchboard in E.P. [part of main switchboard]	1	150	200✓	105	98			
From motor generators all from emergency battery								
G.F.B. emerg. lighting aft "N.A." "B."	1	9	9✓	22.5	66			N.B.R. & L. & M.W.B.
" " " " "M."	1	4	4✓	22.5	60			
" " " " "midship "A."	1	4	16✓	22.5	230			
" " " " "fore "F."	1	4	72✓	22.5	100			
" " " " "aft "H.F."	1	4	4✓	22.5	25			
" " " " "navigation "N."	1	16	6✓	49	246			
" " " " "nav. lighting "N."	1	4	2✓	22.5	256			
Supply charging equipment 24 volt battery		2.5	7✓	15.5	20			
Supplied from aux. lighting switchboard. 110 volts ; placed in E.P. (part of main switchboard 220V)								
G.F.B.'s lighting aft "H.H." "L."	1	10	25✓	30	32			
" " " " "M.L."	1	10	26✓	30	108			
" " " " "midship "G.L."	1	25	40✓	63	160			
" " " " " & fore "G.B."	1	16	19✓	49	162			
" " " " "aft ship "G.F."	1	4	14✓	22.5	52			
" " " " "fore "F.?"	1	4	14✓	22.5	40			
" " " " "aft "D."	1	4	14✓	22.5	116			
" " " " "cargo lighting "S."	1	16	16✓	49	166			

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.	MOTOR CRANKS.			
Supplied from main switchboard 220 volts; from main generators only							
Steering gear motor 1	1	40	1	120	120	175	184
" " 2	1	40	1	120	120	175	152
Turning gear motor 1	1	15	1	25	60.5	63	66
" " 2	1	15	1	25	60.5	63	68
Emergency bilge pump	1	22	1	50	87	99	108
Controlled by P/R.							
Oil fuel transfer pump	1	8	1	10	32.9	35	54
Ventilation fans accom.	4	3.8	1	4	15.6	22.5	70-70
Supplied either from main generators or from harbour net; controlled by P/R.							
lub. oil separators	2	7	1	10	28	38	26-38
Oil fuel centrifuges	2	7	1	10	28	38	70-72
Tackle motors	2	6	1	6	25.5	29	30-31
Sanitary pump	1	6.5	1	10	27.5	30	60
Harbour coaling water pump	1	4	1	4	17.1	22.5	32
Oil fuel day pump	1	15	1	25	7	15.5	78
Supplied from aux. switchboard 220 volts; placed on heat deck							
Motor of motor generator lighting 1	1	41	1	120	157	175	25
" " 2	1	41	1	120	157	175	52
Supplied from central starting panel							
lub. oil pump	1	40	2	150	400	440	31
Fresh coaling water pump	1	36	1	95	130	150	30
lub. oil pump	1	140	1	150	400	440	27
Harbour coaling water pump	1	36	1	95	130	150	26
Sea coaling water pump	1	36	1	95	130	150	34
Supplied from G.F.B. & L.P.							
Hot water circulating pump	1	1	1	15	45	95	6
Sea water hydropneum. pump	1	3	1	4	12.7	22.5	8
Sea water hydropneum. pump	1	3	1	4	12.7	22.5	8
Coaling water pump rep. equipm.	1	1.25	1	15	7.5	9.5	10
Fresh water hydropneum. pump	1	2	1	2.5	8.25	15.5	10
Fresh water hydropneum. pump	1	2	1	2.5	8.25	15.5	12

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

H. Vanderlijk

Electrical Contractors.

Date 20th April 1951

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

10

Builder's Signature.

Date 23rd April 1954.

P. mit 596 Inutor Madenaga
P. mit 597 ka Platai

Is this installation a duplicate of a previous case.....yes

...If so, state name of vesse

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 KEMA (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 glassed vessel having the notation "Carrying Petroleum in Bulk"

Noted End 13/6/51

Total Capacity of Generators.....440.....Kilowatts.

The amount of Fee ...

1425.

When applied for,

22 1/2 19 57

Travelling Expenses (if any)

50.-

When received,

1957

Surveyor to Lloyd's Register of Shipping.

FRI. 15 JUN 1951

Committee's Minute.

Assigned

See F.E. incl. rpt.