

Report on Electrical Equipment.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

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Date of writing Report 11th Dec. 1945. When handed in at Local Office 19 Port of Gothenburg

Survey held at Gothenburg Date, First Survey 26th Oct. 42 Last Survey 4th Dec. 1945. (Number of Visits 12)

No. in Reg. Book 31760 on the Motor Tanker "SAN ANTONIO" Tons {Gross 11163 Net 6676

Built at Gothenburg By whom built A-B. Götaverken Yard No. 546 When built 1945

Owners Argentine Government Port belonging to Buenos Aires

Electrical Installation fitted by A-B. Götaverken Contract No. 546 When fitted 1945

Is vessel fitted for carrying Petroleum in bulk Yes. Is vessel equipped with D. F. Yes. E. S. D. Yes. Gy. C. No. Sub. Sig. No.

Have plans been submitted and approved Yes System of Distribution Two Wire Voltage of supply for Lighting 110

Heating 220 Power 220 Direct or Alternating Current, Lighting D.C. Power D.C. If Alternating Current state frequency Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off Yes Are turbine emergency governors fitted with a

trip switch as per Rule Generators, are they compound wound Yes are they level compounded under working conditions Yes

if not compound wound state distance between generators and from switchboard Where more than one generator is fitted are they

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

Positive 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 Are the lubricating arrangements and the construction

of the generators as per rule Yes Position of Generators Engine room floor

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material Yes if situated

near unprotected combustible material state distance from same horizontally and vertically are the generators protected from mechanical

injury and damage from water, steam and oil Yes are the bedplates and frames earthed Yes and the prime movers and generators in metallic

contact Yes Switchboards, where are main switchboards placed On a platform in the engine room

are they in accessible positions, free from inflammable gases and acid fumes are they protected from mechanical injury and damage from water, steam

and oil Yes, if situated near unprotected combustible material state distance from same horizontally and vertically, what insulation

material is used for the panels Steel panels, mica insulation, 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 frame effectually earthed Yes

Is the construction as per Rule Yes, including accessibility of parts Yes, absence of fuses on the back of the board Yes, individual fuses

to pilot and earth lamps, voltmeters, etc., Yes locking of screws and nuts Yes labelling of apparatus and fuses Yes fuses on the dead

side of switches Yes Description of Main Switchgear for each generator and arrangement of equaliser switches A double pole circuit breaker

with overload and reverse current trips and a single pole equaliser switch interlocked as per Rule

and for each outgoing circuit A double pole switch and a fuse on each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Instruments on main switchboard 6

ammeters 4 voltmeters synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection Yes Earth Testing, state means provided Ohm meters



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Switches, Circuit Breakers and Fuses, are they as per Rule **Yes** are the fuses an approved type **Yes** are all fuses labelled as per Rule **Yes** are the reversed current protection devices connected on the pole opposite to the equaliser connection **Yes** have they been tested under working conditions **Yes** **Joint Boxes, Section Boards and Distribution Boards**, is the construction and position as per Rule **Yes**

Cables, are they insulated and protected as per the appropriate Tables of the Rules **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 **6 v. lighting 12 v. power** are the ends of all cables having a sectional area of 0.04 square inch and above provided with **bolted clamps** **Yes** Are paper insulated and varnished cambric insulated cables sealed at the exposed ends **Yes** with insulating compound **Yes** or waterproof insulating tape **---** 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 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 **---** State how the cables are supported and protected **Supported by metal clips. Power cables lead covered and armoured.**

Are all lead sheaths, armouring and conduits effectually bonded and earthed **Yes** Refrigerated chambers, are the cables and fittings as per Rule **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** and with what material **Lead** **Alternative Lighting**, are the groups of lights in the engine and boiler rooms arranged as per Rule **Yes** **Emergency Supply**, state position **---** and method of control **---**

Navigation Lamps, are they separately wired **Yes** controlled by separate double pole switches **Yes** 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** **Secondary Batteries** are they constructed and fitted as per Rule **---** are they adequately ventilated **---**

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof **Yes** Are 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 **---**

Lamps in gastight fittings. Cables in gastight tubing. and where are the controlling switches fitted **Outside the spaces** are all fittings suitably ventilated **Yes**

are all fittings and accessories constructed and installed as per Rule **Yes** **Searchlight Lamps**, No. of **---** whether fixed or portable **---** are their fittings as per Rule **---** **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 **Yes** and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil **Yes** if situated near unprotected combustible material state minimum distance from same horizontally **---** and vertically **---**

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 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 **Yes** **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 the cartridge type **Yes** are they of an approved type **Yes** If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type **Yes** **Spare Gear**, if the vessel is for open sea service have spares been provided as per Rule **Yes** are they suitably stored in dry situations **Yes** **Insulation Tests**, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory **Yes**

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	110	220	500	450	Diesel engines	Diesel oil	
	1	85	220	386	450	Steam engine		
EMERGENCY								
ROTARY TRANSFORMER	1	20	110	182	1500	Electric motor		

GENERATOR CABLES.

DESCRIPTION	KILOWATTS	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (Lead plus return, feet, M.T.F.)	INSULATED WITH	HOW PROTECTED.
		No. in Parallel Per Pole	Sectional Area of Conductor Sq. In. or Sq. Mm.	In the Circuit	Per Pole			
MAIN GENERATOR	110	2	120	500	564	80-30	Paper	Lead covered and armoured.
" " EQUALISER		2	120	-	564	80-30	"	" "
" " EQUALISER	85	2	70	386	400	20	"	" "
" " EQUALISER		2	70	-	400	20	"	" "
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR	24	1	35	122	126	24	"	" "
" " GENERATOR	20	1	70	182	200	16	"	" "

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS								
Separators	1	95	208	243	40	"	"	" "
Galley board	1	35	95	126	70	"	"	" "
Water heaters	1	25	62	102	190	"	"	" "

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	35	15	77.5	240	Rubber	" "
NAVIGATION LIGHTS	1	4	2	22.2	240	"	" "
LIGHTING XXXXXXXXXX							
Accommodation, starboard aft (A)	1	10	29	38.2	70	"	" "
" port " (B)	1	6	28	29.4	40	"	" "
" midships (C)	1	70	73	200	220	Paper	" "
Forward (E)	1	10	10	38.2	300	Rubber	" "
HEATING							
Accommodation, starboard aft	1	25	79.5	102	50	Paper	" "
" port aft	1	95	138	150	80	Rubber	" "
" midships	1	120	126	175	220	"	" "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B. H. P.						
Main cooling pumps	2	60	1	95	220	243	36-42	Paper
Main lubricating oil pumps	2	55	1	95	200	243	80-80	"
Transfer pump	1	15	1	10	58	60	90	"
Bilge- and sanitary pump	1	12	1	10	47	60	80	"
Man. air compressor	1	40	1	95	153	150	90	Rubber
Ballast pump	1	12	1	16	47	48	70	"
Turning gear	1	10	1	10	40	38.2	80	"
Auxiliary cooling pump	1	4	1	4	16.5	22.2	40	"
Refrigerator	1	10	1	10	39	38.2	40	"
Cooling pump for refrigerator	1	2	1	1.5	8.7	9.3	40	"
Workshop motor	1	3	1	2.5	12.5	12.8	30	"
Engine room fans	2	1.4	1	1.5	6.6	9.3	70-80	"
Sanitary pumps	2	3	1	2.5	12.5	12.8	66-50	"
Steering gear	1	20	1	35	80	126	130	Paper

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.

AKTIEBOLAGET GÖTAVERKEN

Electrical Engineers. Date Dec. 15th 1945.

COMPASSES.

Minimum distance between electric generators or motors and standard compass about 9 meters

Minimum distance between electric generators or motors and steering compass about 8 meters

The nearest cables to the compasses are as follows:—

A cable carrying 15 Ampères 15 feet from standard compass 15 feet from steering compass.

A cable carrying 2 Ampères 7 feet from standard compass 7 feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power Yes

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted Yes

The maximum deviation due to electric currents was found to be 0 degrees on every course in the case of the standard compass, and 0 degrees on every course in the case of the steering compass.

AKTIEBOLAGET GÖTAVERKEN

Builder's Signature. Date Dec. 15th 1945.

Is this installation a duplicate of a previous case Yes. If so, state name of vessel m.s. "Buenos Aires" (now San José)

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

This electrical installation has been fitted under special survey in accordance with the 1938-39 Rules and approved plans. The workmanship and materials are good. The generators above 100 kW. have been inspected by the Stockholm Surveyors during construction and testing and Makers' certificates of test for the 85 kW. generator and the electric motors are attached.

On completion of the work the installation were megger tested, examined under full power conditions and found satisfactory.

Total Capacity of Generators 305 Kilowatts.

The amount of Fee	Got. ac. Kr. 725:80	When applied for, 24/12 1945.
	Skm. ac. " 181:45	
Travelling Expenses (if any)	Kr. 49:00	When received — 19
	Skm account	

Stein Johansson for H.D. Siggers
 Surveyor to Lloyd's Register of Shipping.

FRI. 18 JAN 1946

Committee's Minute

Assigned See F.E. machy. rpt.

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

