

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office FEB - 1 1939

Date of writing Report 26th Jan 1939 When handed in at Local Office 30th Jan 1939 Port of GOTHENBURG
 No. in Survey held at GOTHENBURG Date, First Survey 5th Dec 1938 Last Survey 23rd January 1939
 (Number of Visits 12)
 Reg. Book Supplement 90505 on the Twin Sc. M/S VENEZUELA Tons { Gross 6991
 Net 4060
 Built at Gothenburg By whom built Aktiebolaget Götaverken Yard No. 530 When built 1939
 Owners Rederiaktiebolaget Nordstjernan Port belonging to Stockholm
 Electric Light Installation fitted by Aktiebolaget Götaverken Contract No. 530 When fitted 1939
 Is the Vessel fitted for carrying Petroleum in bulk no.

System of Distribution two wire system
 Pressure of supply for Lighting motorroom 220 volts, Heating - volts, Power 220 volts.
 Direct or Alternating Current, Lighting direct Power direct
 If alternating current system, state frequency of periods per second -
 Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off yes
 Generators, do they comply with the requirements regarding temperature rise yes, are they compound wound yes
 are they over compounded 5 per cent. yes, if not compound wound state distance between each generator -
 Where more than one generator is fitted are they arranged to run in parallel yes, is an adjustable regulating resistance fitted in series with each shunt field yes Have certificates of test results for machines under 100 kw. been submitted and approved yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing yes
 Have certificates for generators under 100 kw. been supplied and approved yes
 Are all terminals accessible, clearly marked, and furnished with sockets yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched yes Are the lubricating arrangements of the generators as per Rule yes
 Position of Generators two at the starboard and two at the port side of the motorroom, is the ventilation in way of the generators satisfactory yes are they clear of all inflammable material yes if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators - and -, are the generators protected from mechanical injury and damage from water, steam or oil yes, are their axes of rotation fore and aft yes
 Earthing, are the bedplates and frames of the generating plant efficiently earthed yes are the prime movers and their respective generators in metallic contact yes Main Switch Boards, where placed on a platform aft in the motorroom
 If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard -
 Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes yes, are they protected from mechanical injury and damage from water, steam or oil yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards - and -, are they constructed wholly of durable, non-ignitable non-absorbent materials of marble, is all insulation of high dielectric strength and of permanently high insulation resistance yes, is it of an approved type yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework yes, is the non-hygroscopic insulating material of an approved type yes, and is the frame effectively earthed yes Are the fittings as per Rule regarding:— spacing or shielding of live parts yes, accessibility of all parts yes, absence of fuses on back of board yes, temperature rise of omnibus bars yes, individual fuses to voltmeter, pilot or earth lamp yes, are moving parts of switches alive in the "off" position no are all screws and nuts securing connections effectively locked yes are any fuses fitted on the live side of switches no
 Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches For each generator: A double pole linked circuit breaker with overload and reversed current trips and a single pole equalizer switch. For each outgoing circuit: A single pole switch and a fuse at each pole.
 Are turbine driven generators fitted with emergency trip switch as per rule - Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material yes Instruments on main switchboard 10 ammeters 6
 voltmeters - synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection yes Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system ohm meters Switches, Circuit Breakers and Fusible Cut-outs, yes have the reversed do these comply with the requirements of the Rules yes are the fusible cutouts of an approved type yes

current protection devices been tested under working conditions. **yes** are all fuses labelled as per rule **yes**

Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule **yes**

Cables: Single braid, **are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules** **yes**

If the cables are insulated otherwise than as per Rule, are they of an approved type **2 v. + 3 pr cent for lighting** **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load **2 v. + 5 " " " power** **Cable Sockets**, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets **yes** **Paper Insulated and Varnished Cambric Insulated Cables**, If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound **or waterproof insulating tape** **Cable Runs**, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable 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, bathrooms and lavatories lead covered or run in conduit **yes**

Support and Protection of Cables, state how the cables are supported and protected **supported by metal clips. All power cables lead covered and armoured. Lighting cables lead covered in cabins. For the rest lead covered and armoured.** If cables are run in wood casings, are the casings and caps secured by screws **yes**, are the cap screws of brass **yes**, are the cables run in separate grooves **no** If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII **yes**

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements **yes**

Joints in Cables, state if any, and how made, insulated, and protected **no joints in main cables, joints in section cables as per rule**

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands **yes** **Bushes in Beams and Non-watertight Partitions**, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed **yes** state the material of which the bushes are made **lead**

Earthing Connections, state what earthing connections are fitted and their respective sectional areas **are their connections made as per Rule**

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule **yes** **Emergency Supply**, state position and method of control of the emergency supply and how the generator is driven **generator and switchboard placed in motor casing. Generator driven by diesel motor**

Navigation Lamps, are these separately wired **yes**, controlled by separate switch and separate fuses **yes**, are the fuses double pole **yes**, are the switches and fuses grouped in a position accessible only to the officers on watch **yes**

has each navigation lamp an automatic indicator as per Rule **yes** **Secondary Batteries**, are they constructed and fitted as per Rule **yes**

are they ventilated as per Rule **yes**

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight **yes**

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected **are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected** **how are the cables led**

where are the controlling switches situated **are all fittings suitably ventilated** **yes**, are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials **yes**

Heating and Cooking Appliances, are they constructed and fitted as per Rule **yes**, are air heaters constructed and fitted as per Rule **are the brushes, brush holders, terminals and lubricating arrangements as per Rule** **yes**, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material **yes**, are they protected from mechanical injury and damage from water, steam or oil **yes** are their axes of rotation fore and aft **all except the turning motors**, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type **yes**, if not of this type, state distance of the combustible material horizontally or vertically above the motors **and**

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing **have certificates for all motors for essential services been supplied and approved** **yes** **Control Gear and Resistances**, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule **yes** **Lightning Conductors**, where lightning conductors are required, are these fitted as per Rule **yes** **Ships carrying Oil having a Flash Point less than 150° F.** Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings **are all fuses of the fitted cartridge type** **are they of an approved type**

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces **Spare Gear**, if the vessel is for open sea service have spares been supplied as per Rule **yes** are they suitably stored in dry situations **yes**

PARTICULARS OF GENERATING PLANT.										
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.			
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.		
MAIN	4	100	220	455	300	Diesel engine	Diesel oil	Above 150° F.		
AUXILIARY										
EMERGENCY	1	12	110	109	900	" "	" "	" "		
ROTARY TRANSFORMER	1	20	220	125	1,150					
			110	182						
GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	No. per Pole.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) <u>Feet.</u>	Insulated with	HOW PROTECTED.
		Total Nominal Area per Pole <u>Sq. mm.</u>	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATOR	3	285	37	1.83	455	450	34-45-40-53	Rubber	Lead covered and armoured	
EQUALISER CONNECTIONS	3	285	37	1.83			34-45-40-53	"	" " " "	
AUXILIARY GENERATOR										
EMERGENCY GENERATOR	1	50	19	1.83	109	100	4	"	" " " "	
ROTARY TRANSFORMER	1	70	37	1.55	125	123	10	"	" " " "	
GENERATOR	1	120	37	2.03	182	170	10	"	" " " "	
ENGINE ROOM										
BOILER ROOM	1	16	19	1.04	32	50	10	"	" " " "	
AUXILIARY SWITCHBOARDS										
Refrigerating fans	2	140	37	1.55	218.3	246	64			
" pumps	1	150	37	2.66	205	200	64	"	" " " "	
Separators	1	95	37	1.83	130.6	150	60	"	" " " "	
Water heaters thermo-										
tanks	1	150	37	2.26	233	275	56	"	" " " "	
ACCOMMODATION	1	6	7	1.05	8	29	180	"	" " " "	
shelter deck starb.	1	10	7	1.35	16	39	60	"	" " " "	
port	1	10	7	1.35	16	39	75	"	" " " "	
prgm. deck starb.	1	10	7	1.35	16	39	115	"	" " " "	
port	1	10	7	1.35	16	39	108	"	" " " "	
boat deck	1	10	7	1.35	16	39	110	"	" " " "	
forward	1	10	7	1.35	16	39	170	"	" " " "	
Deck forward	1	10.16	7.19	1.45	14.20	39.50	110-150	"	" " " "	
art	1	10	7	1.35	20	39	80	"	" " " "	
Lanterns	1	1.5	1	1.38	1.5	9	134	"	" " " "	
WIRELESS	1	6	7	1.05	20	29	117	"	" " " "	
SEARCHLIGHT										
MASTHEAD LIGHT	1	1.5	1	1.38	0.3	9	190-210	"	" " " "	
SIDE LIGHTS	1	1.5	1	1.38	0.3	9	80-80	"	" " " "	
COMPASS LIGHTS	1	1.5	1	1.38	0.3	9	10	"	" " " "	
POOP LIGHTS	1	1.5	1	1.38	0.3	9	240	"	" " " "	
CARGO LIGHTS										
Heaters for water	1	2.5-16-50	7-19-19	0.67-1.04	14-45-90	16-50-100	30-80-32	"	" " " "	
HEATERS	1	25	19	1.30	54	62	20-32	"	" " " "	
oil										
MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) <u>Feet.</u>	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Nominal Area per Pole <u>Sq. mm.</u>	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	2	140	37	1.55	218	246	67	Rubber	Lead covered and armoured
Thermotank fans	3	1	2.5	7	0.67	11	16	88-79-39	"	" " " "
Thermotank fans	3	1	2.5-1.5	7-1	0.67-1.38	11-0.6	16-9	46-53-66	"	" " " "
Fire extinguishing & bilge	1	1	35	19	1.53	69	75	53	"	" " " "
EMERGENCY BILGE PUMP	1	1	10	7	1.35	31.6	39	55	"	" " " "
SANITARY PUMP	1	1	10	7	1.35	31.6	39	55	"	" " " "
CIRC. SEA WATER PUMPS	2	1	95	37	1.83	135	150	87-87	"	" " " "
oil pump	1	1	1.5	1	1.38	6.7	9	24	"	" " " "
CIRC. FRESH WATER PUMPS	2	2	140	37	1.55	228	246	82-84	"	" " " "
AIR COMPRESSOR	1	1	2.5	7	0.67	12.8	16	80	"	" " " "
FRESH WATER PUMP	1	1	10	7	1.35	31.5	39	59-53	"	" " " "
ENGINE TURNING GEAR	2	1	70	37	1.55	120	123	82-82	"	" " " "
ENGINE REVERSING GEAR	2	1	70	37	1.55	120	123	82-82	"	" " " "
LUBRICATING OIL PUMPS	1	1	35	19	1.53	69	75	25	"	" " " "
OIL FUEL TRANSFER PUMP	1	1	150	37	2.26	243	275	204	"	" " " "
WINDLASS	1	1	120	37	2.03	222	230	167-171	"	" " " "
WINCHES, FORWARD	2-2	1	95	37	1.83	184	190	178-133-143	"	" " " "
" "	2-2-2	1	95	37	1.83	184	190	106-118-153	"	" " " "
WINCHES, AFT	2-2-2	1	95	37	1.83	184	190	106-118-153	"	" " " "
Galley board	1	1	10	7	1.35	27	39	29	"	" " " "
STEERING GEAR										
Emergency bilge pump	1	1	16	19	1.04	44	50	24	"	" " " "
(a) Motor for bilge pump	2	1	50	19	1.83	98	100	150-142	"	" " " "
STEERING GEAR										
(b) MAIN MOTOR	2	1	2.5	7	0.67	13	16	86	"	" " " "
WORKSHOP MOTOR	1	1	2.5	7	0.67	13	16	86	"	" " " "
VENTILATING FANS motor room	2	1	1.5	1	1.38	6.7	9	26-40	"	" " " "
" " " " " "	3	1	2.5	7	0.67	12.1	16	46-82-48	"	" " " "
" " " " " "	5	1	4	7	0.86	21	23	100-56-86	"	" " " "
" " " " " "	2	1	10	7	1.35	38.5	39	44-102	"	" " " "
Refrigerators	3	2	190	37	1.83	288	300	63-70-76	"	" " " "
Brine pumps	4	1	16	19	1.04	39.5	50	47-45-45-42	"	" " " "
Cooling water pump	2	1	6	7	1.05	23.5	29	30-35	"	" " " "
" " " " " "	1	1	4	7	0.86	18.5	23	42	"	" " " "
Separators	3	1	2.5	7	0.67	12.5	16	17-23-22	"	" " " "
Bath water pump	1	1	1.5	1	1.38	8.5	9	78	"	" " " "
Salt " "	1	1	4	7	0.86	16.5	23	86	"	" " " "

The Electrical Equipment is installed in accordance with the approved plans.
All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
The foregoing is a correct description.

AKTIEBOLAGET GÖTAVERKEN

Folke Carssel

Electrical Engineers.

Date Jan. 23rd, 1939.

COMPASSES.

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

Minimum distance between electric generators or motors and steering compass " 7 "

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 5 feet from standard compass 6 feet from steering compass.

A cable carrying 1.5 Ampères 15 feet from standard compass 3 feet from steering compass.

A cable carrying 25 Ampères 15 feet from standard compass 15 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 degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

AKTIEBOLAGET GÖTAVERKEN

Folke Carssel

Builder's Signature.

Date Jan. 23rd, 1939.

Is this installation a duplicate of a previous case Yes If so, state name of vessel M/s PERU

General Remarks (State quality of workmanship, opinions as to class, etc.)

The electric installation of this ship has been fitted on board under my inspection and to my satisfaction.

The workmanship is good and all the Requirements of the Rules have been complied with.

Certificates of the generators and of the electric motors are attached herewith.

Wid
L.Y.

3/2/39

Total Capacity of Generators 412 Kilowatts.

The amount of Fee ... Kr. 762.90

(Charged for testing of generators) Kr. 246.00

Travelling Expenses (if any) £

When applied for,

20th Jan. 1939

When received,

1st Feb. 1939

Folke Carssel.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 7 FEB 1939

Assigned

See fol. 2E 12306



© 2021

Lloyd's Register Foundation