

Report on Electrical Equipment.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office **9 APR 1951**

Date of writing Report **19th March 51.** When handed in at Local Office **4th April 1951.** Port of **Gothenburg**

Survey held at **Uddevalla** Date, First Survey **26th Oct., 1950** Last Survey **1951.**
(Number of Visits **8**)

No. in Reg. Book **90078** on the **Twin Screw Motor Tanker "I S L A S O R C A D A S"** Tons {Gross **9809** Net **5582**

Built at **Uddevalla** By whom built **Uddevallavarvet A-B.** Yard No. **112** When built **1951**

Owners **Argentine Government (Yacimientos Petroliferos Fiscales)** Port belonging to **Buenos Aires**

Electrical Installation fitted by **Uddevallavarvet A-B.** Gen. Nos. **164477, 164478, 164479, 164480** When fitted **1951**
Radar **XXXXXX**

Is vessel fitted for carrying Petroleum in bulk **Yes.** Is vessel equipped with D. F. **Yes.** E. S. D. **Yes.** Gy. C. **Yes.** ~~XXXXXX~~ **Yes.**

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

Heating **---** 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

Negative 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, port and starboard, fore and aft. Steam driven gen: ER 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 aft in the engine room.**

are they in accessible positions, free from inflammable gases and acid fumes **Yes.** 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 **Steatit.** 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 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 reversed current trips and a single pole equaliser switch.**

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 **Yes.** Instruments on main switchboard **For 110 V. 3 For 220 V. 16**

ammeters **3** voltmeters **5** 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 - metres.**



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 **---** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets **Yes** Are paper insulated and varnished cambric insulated cables sealed at the exposed ends **Yes** with insulating compound **---** or waterproof insulating tape **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 cables laid under machines or floorplates **Yes** (only about 3.5 Metres) 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. All cables lead sheathed. Main cables armoured or steel wire braided.**

Are all lead sheaths, armoring 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 **In a separate room on the boat deck** and method of control **A double pole switch with overload current trips** **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 ~~engine~~ 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 **Flameproof fittings (Maxlinne FP 6445) and gastight piping** and where are the controlling switches fitted **Accommodations amidship** are all fittings suitably ventilated **Yes** are all fittings and accessories constructed and installed as per Rule **Yes** **Searchlight Lamps**, No. of **12**, whether fixed or portable **Fixed** are their fittings as per Rule **---** **Heating and Cooking**, is the general construction as per Rule **---** are the frames effectually earthed **---** are heaters in the accommodation of the convection type **---** **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 **Yes** 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 **Not supplied** **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	4	320	230	1391	600	Diesel engines	Diesel oil	Above 150° F.
STEAM GENERATOR	1	100	230	435	450	Steam engine	---	---
EMERGENCY	1	20	115	260	1100	Diesel engine	Diesel oil	Above 150° F.
ROTARY TRANSFORMER	2	25	115	218	2900	Electric motor	---	---

GENERATOR CABLES.

DESCRIPTION	KILOWATTS	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead ply return ft)	INSULATED WITH	HOW PROTECTED.
		No. in Parallel Per Pole	Sectional Area or No. and Dia. of Strands Sq. mm. or Sq. in.	In the Circuit	Rule			
MAIN GENERATOR	320	4	185	1391 ✓	1496	78	Paper	Lead covered & armoured
" " EQUALISER		4	185	---	1496	78	"	" "
STEAM ENGINE DRIVEN GENERATOR	100	2	95	435 ✓	484	32	"	" "
" " " " EQUAL.		2	95	---	484	32	"	" "
EMERGENCY GENERATOR	30	2	50	260 ✓	318	30	"	" "
ROTARY TRANSFORMER: MOTOR	30	1	50	156 ✓	159	60	"	" "
" " GENERATOR	25	1	95	227 ✓	242	85	"	" "

MAIN DISTRIBUTION CABLES.

DESCRIPTION	No.	Sectional Area or No. and Dia. of Strands Sq. mm. or Sq. in.	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead ply return ft)	INSULATED WITH	HOW PROTECTED.	
AUX. SWITCHBOARDS AND SECTION BOARDS							
Engine room purifiers and transfer pump	1	25	100 ✓	102	130	Paper	Lead covered & armoured
Engine room pumps and Prov. refr. mchy	1	25	90 ✓	102	45	"	" "
Engine room workshop motors	1	10	20 ✓	38	90	Rubber	" "
Fans aft	1	25	87 ✓	102	65	Paper	" "
Fans amidship	1	25	30 ✓	102	600	"	" "
Refr. compressor	1	16	50		200	"	" "

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION	No.	Sectional Area or No. and Dia. of Strands Sq. mm. or Sq. in.	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead ply return ft)	INSULATED WITH	HOW PROTECTED.	
WIRELESS	1	35	50 ✓	126	700	Paper	Lead covered & armoured
NAVIGATION LIGHTS	1	2.5	4 ✓	13	725	Rubber	" "
LIGHTING XXXXXXXXXX							
Boat deck, Officers' accommodation	1	6	23 ✓	29	190	"	" "
Boat deck, Crew accommodation	1	4	14 ✓	21	160	"	" "
Poop deck, Passengers' accomm., starboard	1	4	16.5 ✓	21	140	"	" "
Poop deck, Passengers' accomm., port	1	4	16.5 ✓	21	100	"	" "
Poop deck, Passengers' accomm., aft	1	6	23 ✓	29	170	"	" "
Section board amidship	1	70	118 ✓	200	600	Paper	" "
Engine room, starboard	1	6	17.5 ✓	29	90	Rubber	" "
Engine room, port	1	6	17.5 ✓	29	25	"	" "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	Sectional Area or No. and Dia. of Strands Sq. mm. or Sq. in.	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead ply return ft)	INSULATED WITH	HOW PROTECTED.		
Steering engine	2	14 KW	1	25	80 ✓	102	210	Paper	Lead covered & armoured
Scavenge air blower	4	250	4	95	884 ✓	968	85	"	" "
Main cooling water pump	3	65	1	120	228 ✓	282	150	"	" "
Main lubricating oil pump	3	55	1	95	194 ✓	242	190	"	" "
Ballast pump	1	20	1	16	78 ✓	78	100	"	" "
Transfer pump	1	9	1	16	36.5 ✓	48	30	"	" "
Booster pump	3	1	1	1.5	4.9 ✓	8	7	Rubber	" "
Manoeuvring compressor	2	73	1	120	282 ✓	282	60	Paper	" "
Turning motor	2	15	1	16	63 ✓	78	50	"	" "
Sanitary pump	1	5	1	6	21.1 ✓	29	80	Rubber	" "
Purifier	3	7	1	16	28 ✓	48	30	"	" "
Hydrofor pump	2	2	1	4	9.1 ✓	21	110	"	" "
Refr. compressor, provision	3	4.1 KW	1	6	22 ✓	29	10	"	" "
Cooling water pumps for the refrigerating machinery	3	0.7 KW	1	6	4.2 ✓	29	220	"	" "

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. H. Schuman

Electrical Engineers. Date *28. 3. 51*

COMPASSES.

Minimum distance between electric generators or motors and standard compass **15 feet**

Minimum distance between electric generators or motors and steering compass **16 feet**

The nearest cables to the compasses are as follows:—

twin
 A/cable carrying **10** Ampères **8** feet from standard compass **12** feet from steering compass.

twin
 A/cable carrying **0.5** Ampères **3** feet from standard compass **4** 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.

UDDEVALLAVÄRDET
AKTIEBOLAG
J. J. Sjöberg

Builder's Signature. Date

Is this installation a duplicate of a previous case **Yes** If so, state name of vessel **M/S "Islas Malvinas", Gothenburg**
First Entry Report No. 17660.

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

This electrical installation has been fitted in the vessel under my inspection and to my satisfaction and has been tested and found satisfactory.

The workmanship is good and the Rule requirements have been complied with.

Lloyd's and Makers' certificates in respect of generators and motors are attached.

Note sub 19/4/51

Total Capacity of Generators **1410** Kilowatts.

The amount of Fee **(4/5)** Kr. **2200:00** { When applied for, **4/4 19. 51**
 Travelling Expenses (if any) Kr. **---** { When received **--- 19. ---**

Anders Sjögren
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUES. 24 APR 1951**

Assigned *See F.E. ncky opt.*

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

