

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 14th January 40 19... When handed in at Local Office..... 19... Port of Copenhagen

No. in Survey held at Stockholm Date, First Survey 20th Dec 39 Last Survey 4th January 1940
 Reg. Book. (Number of Visits... 16...)

✓ on the Single Sc. Motor Tanker "SATURNUS" Tons { Gross 9964.73
 Net 5817.86

Built at Stockholm By whom built Asa Skibsvarf Yard No. 91 When built 1940

Owners Rederi 40 Saturnus (Sve. Ligning) Port belonging to Stockholm

Electrical Installation fitted by The ship builders Contract No. - When fitted 1940

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

Have plans been submitted and approved yes System of Distribution 2 conductor insulated Voltage of supply for Lighting 110

Heating..... Power 220 Direct or Alternating Current, Lighting direct Power direct 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..... no, please see London letter
dated 28/1/39 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 In the engine room, floor level, one port &
one starboard side, 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 no woodwork etc. 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 forward end
of 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 no woodwork etc. and vertically....., what insulation

material is used for the panels Sindango & silica, 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"

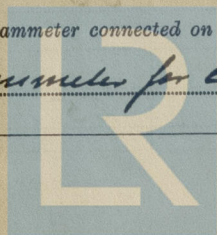
side of switches yes Description of Main Switchgear for each generator and arrangement of equaliser switches A - 3 pole circuit
breaker with overload & reversed current trips

and for each outgoing circuit A - 2 pole switch with fuses on each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 7

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 set of earth lamps & ohmmeter for each pressure



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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 yes, state maximum fall of pressure between bus bars and any point under maximum load 6.3 mll, 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 yes 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 no, if so, are they adequately protected yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered yes or run in conduit yes. State how the cables are supported and protected Lead covered - wire armoured cable used throughout the vessel, laid on steel plates and secured by steel clips, spaced as per Rules.

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 none and method of control yes.

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 yes, are they adequately ventilated yes.

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 cables laid in gas light tubes, approved vented lamps fitted.

and where are the controlling switches fitted in the bridge accommodation, are all fittings suitably ventilated yes, are all fittings and accessories constructed and installed as per Rule yes. Searchlight Lamps, No. of one, whether fixed or portable portable, are their fittings as per Rule yes. 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 none. 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 no wood work etc and vertically yes.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing none. 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	2x150	220	2x682	375	24 cyl 2SCSA Diesel	Cond oil	above 150°F
" ...	1	30	220	136	450	1-cyl steam w/p		
						Rock-Son type SF 9		
EMERGENCY ...	1	25	110	227	1650	4-40 HP electric motor		
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) in feet.	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
2 MAIN GENERATOR ...	2x150	2	2x400	682	780	46 30	India	Lead covered and wire armoured.
" " EQUALISER ...		1	400		390	23 15	rubber	wire armoured.
1 Steam driven generator	30	1	95	136	152	18		
" " Equaliser		1	70		124	9		
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR ...	40 HP	1	120	160	177	16		
" " GENERATOR ...	25	1	185	227	232	16		

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...								
Main Light	1	185	227	232	16			
Coal w. pump for aux w/p. etc	1	16	42	49	34			
Purifier - oil transfer pump	1	35	76	78	80			
Boiler fan, Exhaust pump & Crane	1	35	76	78	80			
Workshop	1	10	34	38	14			
Bilge pump, turning gear, purifier	1	50	98	98	84			

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...								
NAVIGATION LIGHTS ...	1	16	35	49	150			
LIGHTING AND HEATING ...	1	2.5	15	16	150			
Deck lights	1	25	35	65	130			
Engine room	1	16	25	49	44			
Officer's cabin	1	16	20	49	24			
Light stidships	1	16	25	49	130			
Engine room	1	25	60	65	12			
Galley	1	120	165	177	40			

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
2 sea water cooling pumps	2	2x30	1	70	120	124	66 70	
1 fresh water pump	1	30	1	70	120	124	78	
2 lubricating oil pumps	2	2x45	1	120	165	177	88 92	
turning gear	1	12	1	16	48	49	short	
lubricating oil purifier	1	3.5	1	2.5	14	16		
bilge pump	1	9	1	10	36	38		
expanding oil strainer	1	0.35	1	1.5	2	9		
Galley	1	3	1	2.5	12	16		
drilling strainer	1	2	1	1.5	8	9		
strapping strainer	1	3	1	2.5	12	16		
CO. Exhaust pump	1	9	1	10	36	38	100	
Cooling w. pump (refrig)	1	2	1	2.5	8	16	84	
Crane	1	7.5	1	10	30	38	short	
Boiler fan	1	3	1	2.5	12	16		
Exhaust	1	3.5	1	2.5	14	16		
2 main boiler w/p. pumps	2	3.5	1	4	20	22		
2 fuel oil purifiers	2	3.5	1	2.5	14	16		
fuel oil transfer pump	1	12	1	16	48	49		
Sea w. cool pump aux w/p	1	6	1	6	24	29		
Fresh " " "	1	4	1	4	16	22		
Exhaust oil pump	1	0.5	1	1.5	2	9		
Steering gear	2	40	1	120	160	177	90	

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.

AKTIESELSKABET
NARVØY SKIBSVÆRFT

Electrical Engineers.

Date

COMPASSES.

Minimum distance between electric generators or motors and standard compass

approx. 0.25 HP - 6 m

Radio transmitter 14 m

Minimum distance between electric generators or motors and steering compass

5 m

13 m

The nearest cables to the compasses are as follows:—

A cable carrying 0.14 Ampères *the magnetic system in* feet from standard compass *and* feet from steering compass.

A cable carrying Ampères feet from standard compass 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

The maximum deviation due to electric currents was found to be 0 degrees on *any* course in the case of the

standard compass, and 0 degrees on *any* course in the case of the steering compass.

AKTIESELSKABET
NARVØY SKIBSVÆRFT

Builder's Signature.

Date

Is this installation a duplicate of a previous case *no*

If so, state name of vessel

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

The electric installation as described herein has been constructed & fitted under special survey in accordance with the Rules the approved plans and the Sverdrup's letter dated

The material used in construction is in accordance with the Rules and the workmanship is good.

On completion the whole installation was tested as required by the Rules and under full power working conditions and found satisfactory in every respect.

Noted

7/2/40

Total Capacity of Generators 330 Kilowatts.

The amount of Fee ...

£ 1097.60

When applied for,

19/1/40

Travelling Expenses (if any) £

When received,

19/2/40

21/2

J. Langkilde Jensen.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

See Copy JE 11091