13.

No. 18730

Report on Electrical Equipment.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office .....

writing Report 5.1. 19 52 *When handed in at Local Office* 14.1 19 52. *Port of* Gothenburg

Survey held at Gothenburg *Date, First Survey* 8.10. *Last Survey* 21.12. 19 51.

in Book. (*Number of Visits* 27.)

48 *on the* Motor Tanker "S H E T L A N D" *Tons* Gross 10560 Net. 6170

at Gothenburg *By whom built* AB. Lindholmens Varv *Yard No.* 1017 *When built* 1951.

rs A/S Det Dansk-Franske Dampskibsselskab *Port belonging to* Copenhagen

rical Installation fitted by AB. Lindholmens Varv *Contract No* - *When fitted* 1951.

ssel fitted for carrying Petroleum in bulk yes *Is vessel equipped with D. F.* yes *E. S. D.* yes *Gy. C.* yes *Radar* ~~XXXX~~ *Sub. Sig.* yes

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plans been submitted and approved yes **System of Distribution** Two wire **Voltage** *of supply for Lighting* 115

g. - *Power* 230 *Direct or Alternating Current, Lighting* DC *Power* DC *If Alternating Current state frequency* - **Prime Movers,**

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

itch as per Rule - **Generators,** *are they compound wound* yes *are they level compounded under working conditions* yes

compound wound state distance between generators - *and from switchboard* - *Where more than one generator is fitted are they*

d 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*

machines under 100 kw. been supplied yes *and the results found as per rule* yes *Are the lubricating arrangements and the construction*

generators as per rule yes **Position of Generators** 2 x 140 KW on starboard, 1 x 140 KW on port side

E R floor *is the ventilation in way of generators satisfactory* yes *are they clear of inflammable material* yes *if situated*

) KW on a platform on port side

) KW on port side in the ER floor

protected combustible material state distance from same horizontally - *and vertically* -, *are the generators protected from mechanical*

nd damage from water, steam and oil yes, *are the bedplates and frames earthed* yes *and the prime movers and generators in metallic*

yes **Switchboards,** *where are main switchboards placed* On a platform at the forward end in the E.R.

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

yes, *if situated near unprotected combustible material state distance from same horizontally* - *and vertically* -, *what insulation*

is used for the panels Mica, *if of synthetic insulating material is it an Approved Type* -, *if of*

lating material (slate or marble) are all conducting parts insulated therefrom as per Rule - *Is the frame effectually earthed* yes

nstruction as per Rule yes, *including accessibility of parts* yes, *absence of fuses on the back of the board* yes, *individual fuses*

nd earth lamps, voltmeters, etc., yes *locking of screws and nuts* yes *labelling of apparatus and fuses* yes, *fuses on the »dead»*

itches yes *Description of* **Main Switchgear** *for each generator and arrangement of equaliser switches* A double pole linked

it breaker with overload and reversed current trips and a single pole equaliser switch

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

rtments containing switchboards composed of fire-resisting material or lined as per Rule yes **Instruments** *on main switchboard* 9

6 *voltmeters* - *synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the*

nnection 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* Below Rule permit *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* No *if so, are they adequately protected* – *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, cables lead covered and armoured or steel wire braided. Behind panels run in conduits.

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* In a separate well ventilated compartment on poop deck *and method of control* automatic **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* flameproof fitting *and where are the controlling switches fitted* Out side the compartment *are all fittings suitably ventilated* yes *are all fittings and accessories constructed and installed as per Rule* yes **Searchlight Lamps,** *No. of* 1 *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* – **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* – **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 Kilowatts.	Volts.	Ampéres.	Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE Fuel Used.	Flash Point of Fuel.
MAIN	3	140	230	610	450	Heavy oil engine	Diesel oil	Above 150°F
	1	40	230	174	600	Steam engine		
	1	30	230	131	1000	Heavy oil engine	Diesel oil	Above 150°F
EMERGENCY								
ROTARY TRANSFORMER	2	33	115	287	1400	Electric motor		

GENERATOR CABLES.

DESCRIPTION	KILOWATTS	CONDUCTORS No. in Parallel Per Pole	CONDUCTORS Sectional Area Sq. mm.	MAXIMUM CURRENT IN AMPERES In the Circuit	MAXIMUM CURRENT IN AMPERES Rule	APPROX. LENGTH (lead plus return feet).	INSULATED WITH	HOW PROTECTED.
MAIN GENERATOR	140	3	95	610	726	18-18-26	Paper	Lead covered and arm.
„ „ EQUALISER	---	3	95	---	726	-"-	-"-	- " -
Steam driven generator	40	1	70	174	200	12	-"-	- " -
Equaliser	---	1	70	---	200	-"-	-"-	- " -
Harbour light generator	30	1	50	131	159	16	-"-	- " -
Equaliser	---	1	50	---	159	-"-	-"-	- " -
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR	50 BHP	1	70	185	200	16-18	-"-	- " -
„ „ GENERATOR	33 KW	2	50	287	318	-"-	-"-	- " -

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS								
Power Section Broad No.	I.	1	50	32	99	5	Rubber	Lead covered and arm.
- " -	II.	1	70	99.0	125	38	-"-	- " -
- " -	III.	1	70	184	200	70	Paper	- " -
- " -	IV.	1	70	184	200	75	-"-	- " -
- " -	V.	1	70	190	200	75	-"-	- " -
- " -	VI.	1	10	24	38	42	Rubber	- " -
- " -	VII.	1	50	92	99	140	-"-	- " -

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	10	--	38	150	Rubber	- " -
NAVIGATION LIGHTS	1	2.5	3	13	150	-"-	- " -
LIGHTING AND HEATING							
Distribution board I (Engine room)	1	16	37	48	4	-"-	- " -
- " - II (Crew.acc.p.s.)	1	25	25	63	80	-"-	- " -
- " - III (" " s.s.)	1	25	25	63	30	-"-	- " -
- " - IV (Eng.acc. p.s.)	1	25	35	63	40	-"-	- " -
- " - V (" " s.s.)	1	25	30	63	60	-"-	- " -
- " - VI (Lower bridge acc.)	1	70	47	125	140	-"-	- " -
- " - VII (Officers acc.)	1	70	45	125	150	-"-	- " -
- " - VIII (Forecastle)	1	16	20	48	290	-"-	- " -

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
Main salt/fresh water circulating pumps and	2	37	1	50	148	159	18	Paper	Lead covered and arm.
Main salt and fresh water spare pump	1	28	1	70	107	125	18	Rubber	- " -
Main lubr. oil pumps	2	62	1	120	221	282	14	Paper	- " -
Auxiliary engine cooling water pump	2	4.5	1	4	18.2	21	22	Rubber	- " -
Bilge pump	1	9	1	16	35.5	48	36	-"-	- " -
Fire pump	1	34	1	50	127.0	159	42	Paper	- " -
Transfer pump	1	6	1	6	25.4	29	42	Rubber	- " -
Manouvrecompressors	2	60	1	120	230	282	16	Paper	- " -
Cooling pumps for fuel needle valve	2	4.5	1	6	19.5	29	10	Rubber	- " -
Turning motor	1	13	1	25	51.0	63	40	-"-	- " -
Emergency compressor	1	2	1	2.5	9.5	13	18	-"-	- " -
Purifiers	3	3.2	1	4	18	21	48	-"-	- " -
Steering engine	2	24	1	50	94	99	78	-"-	- " -

11C 61122.

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 LINDHOLMENS VARV ELEKTRISKA AVDELNINGEN

Tryggve Lefdal ..... *Electrical Engineers. Date* 11.1.1952.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 11 metres

Minimum distance between electric generators or motors and steering compass 8 metres

The nearest cables to the compasses are as follows:—

A cable carrying 3 *Ampères* 6 *feet from standard compass* 4 *feet from steering compass.*

A cable carrying 1.5 *Ampères* 4 *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.*

AKTIEBOLAGET LINDHOLMENS VARV ELEKTRISKA AVDELNINGEN

Tryggve Lefdal ..... *Builder's Signature. Date* 11.1.1952

M/T "SLIEDRECHT" L.V. 1013
M/T "NERMA DAN" L.V. 1015

Is this installation a ~~duplicate~~ similar *of a previous case* Yes *If so, state name of vessel* M/T "CHRISTIANSBORG" L.V. 1015

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

This electric installation has been fitted in the vessel under our inspection and has been tested under full power and found satisfactory.

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

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

Noted ADH 12-2-52

Total Capacity of Generators 490 *Kilowatts.*

The amount of Fee (4/5) Kr. 1540:– When applied for, 14/1 19 52.

Travelling Expenses (if any) Kr. – When received – 19 –

TUES. 19 FEB 1952

Sten Johnson N.O. Tillberg
Surveyors to Lloyd's Register of Shipping.

Committee's Minute .....

Assigned See F.E. mchy spt

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

Elanders, Gbg. 3683. 11.45.