

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

OCT 22 1937.

Received at London Office

Date of writing Report 13/10 1937 When handed in at Local Office

Port of

Copenhagen

No. in Survey held at Odense

Date, First Survey 26/8

Last Survey 5/10

1937

Reg. Book.

(Number of Visits 6)

38466 on the Sigsbee Tanker "HÖEGH RAY"

Tons { Gross 9357.32
Net 5659.41

Built at Odense

By whom built Odense Haslebygaard

Hurd No. 66.

When built 1937

Owners H. B. 9, Aresia (Leif Höegh, 1937) Port belonging to Oslo

Electric Light Installation fitted by P. S. Dansk Elektricitets-Compagni Contract No. — When fitted 1937

Is the Vessel fitted for carrying Petroleum in bulk *yes*System of Distribution *Two conductor insulated system*

Pressure of supply for Lighting 110 volts, Heating — volts, Power 110 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 *yes*Where more than one generator is fitted are they arranged to run in parallel *No*, is an adjustable regulating resistance fitted inseries with each shunt field *yes* Have certificates of test results for machines under 100 kw. been submitted andapproved *yes* Have machines over 100 kw. been inspected by the Surveyors during manufacture and testingHave 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 *part of engine room, floor level*, is the ventilationin way of the generators satisfactory *yes* are they clear of all inflammable material *yes* if situated near unprotectedwoodwork or other combustible material, state distance of same horizontally from or vertically above the generators *yes* andare 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 generatorsin metallic contact *yes* Main Switch Boards, where placed *in the engine room, in the vicinity of generators*

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 mechanicalinjury and damage from water, steam or oil *yes*, if situated near unprotected woodwork or other combustible material, state distance of samehorizontally from or vertically above the switchboards *yes* and *yes*, are they constructed wholly of durable, non-ignitable non-absorbentmaterials *yes*, 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 othernon-hygroscopic insulating material, and the slab similarly insulated from its framework *yes*, is the non-hygroscopic insulating material of an approvedtype *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 ofomnibus 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 ofswitches *No* Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equaliser switches

GENERATORS AND OUTGOING CIRCUITS: Double pole linked switches with a fuse on each pole.

Are turbine driven generators fitted with emergency trip switch as per rule *yes* Are cupboards or compartments containing switchboards composed offire-resisting material or lined with approved material *yes* Instruments on main switchboard 1 ammeters 1voltage meters *yes* synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

1 set of milliamperes fuses.

Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules *yes* are the fusible cutouts of an approved type *yes* have the reversed

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, twin, concentric, or multicore *single* are the cables insulated and protected as per Tables IV, V, VI, VII, VIII of the Rules *yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type *yes* **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *5 Volts*

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 *yes* or waterproof insulating tape *yes*

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 *clips, on deck, and when necessary shielded by steel casings*

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 *yes* 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*

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 *yes* are their connections made as per Rule *yes*

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 *The emergency generator is placed on the main deck in the poop space and is worked by a 1-cyl. 2500 revs per min engine*

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 stakeholds 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 *yes*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *lamps in poop room contained in glass globe protected by steel grids through gratings the tubes coming straight into lamp holders* how are the cables led *where are the controlling switches situated in the deck house amidships*

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 *yes*

Searchlight Lamps, No. of *non fixed* whether fixed or portable *yes* are their fittings as per Rule *yes*

Motors, are their working parts readily accessible *yes* are the coils self-contained and readily removable for replacement *yes* 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 *yes* 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 *yes* and *yes*

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *yes* 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 *yes* are all fuses of the fitted cartridge type *yes* are they of an approved type *yes*

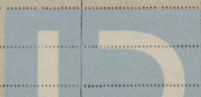
If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces *yes*

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 ...	2	16	110	146	600	shown			
AUXILIARY ...									
EMERGENCY ...	1	7	110	63.7	550	1-cyl. 2500 OIL ENGINE	crude oil	> 150° F	
						(H.I.A.S.)			
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. mm.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR ...	1	95	19	2.52	146	147	20 24	rubber	lead covered and
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR...									also wire armoured
EMERGENCY GENERATOR	1	35	19	1.53	63.7	77	4	"	
ROTARY TRANSFORMER MOTOR GENERATOR...									
ENGINE ROOM...									
HEATER ROOM ...	1	25	7	2.13		63			
AUXILIARY SWITCHBOARDS	1	16	7	1.70	70	48	40	"	"
FOR LIGHT									
ENGINE ROOM	1	10	7	1.35	10	38	40	"	"
ACCOMMODATION ...									
AWDISHIAS	1	16	7	1.70	40	48.7	170	"	"
AFT	1	10	7	1.35	30	38	10	"	"
WIRELESS	1	16	7	1.70	19	48.7	200	"	"
SEARCHLIGHT (ABLE LAD)	1	35	19	1.53		77	275	"	"
MASTHEAD LIGHT ...									
SIDE LIGHTS ...									
COMPASS LIGHTS ...	1	10	7	1.35	5	38	20	"	"
POOP LIGHTS ...									
CARGO LIGHTS									
HEATERS ...									

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. mm.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...										
MAIN BILGE LINE PUMPS ...										
GENERAL SERVICE PUMP ...										
EMERGENCY BILGE PUMP										
SANITARY PUMP ...										
CIRC. SEA WATER PUMPS ...										
CIRC. FRESH WATER PUMPS...										
AIR COMPRESSOR ...										
FRESH WATER PUMP ...										
ENGINE TURNING GEAR...	1	1	35	19	1.53	54	77	44	RUBBER	lead covered and
ENGINE REVERSING GEAR										also wire armoured
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP...										
WINDLASS ...										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR...										
(b) MAIN MOTOR ...										
WORKSHOP MOTOR	1	1	10	7	1.35	28	38	48	"	"
VENTILATING FANS										
OIL PURIFIER	1	1	10	7	1.35	24	38	32	"	"
"	1	1	10	7	1.35	24	38	41	"	"
"	1	1	10	7	1.35	24	38	40	"	"

 © 2021

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.

Dansk Elektricitetscompagni

Electrical Engineers.

Date 19-10-1937

COMPASSES.

Minimum distance between electric generators or motors and standard compass

40'

Minimum distance between electric generators or motors and steering compass

30'

The nearest cables to the compasses are as follows:—

A cable carrying 5 Ampères 12 feet from standard compass 12 feet from steering compass.

A cable carrying 1/2 Ampères 12 feet from standard compass 5 feet from steering compass.

A cable carrying 1/5 Ampères 8" feet from standard compass 8" 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 any course in the case of the standard

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

ODENSE STAALSKIBSVÆRFT

VED A. P. MØLLER

Builder's Signature.

Date 16-10-37

Is this installation a duplicate of a previous case If so, state name of vessel

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

The electric light and power installation as herein described has been fitted in accordance with the Society's Rules, the approved plans and the requirements contained in the Surveyor's letter E dated 18/5.24/937.

On inspection the whole installation was tested under full power working conditions and as required by the Rules and found satisfactory.

W. S. J. P.
25/10/37.

Total Capacity of Generators 39 Kilowatts.

The amount of Fee ...

14.554.40

When applied for,

20.10.37

Travelling Expenses (if any) £

—

When received,

1.10.37

Ch. S. J. P.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 26 OCT 1937

Assigned See other F.B. report