

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

20 OCT 1939

Date of writing Report 10 October 39 When handed in at Local Office 19 Port of Copenhagen
 No. in Survey held at Elsinore & Odense Date, First Survey 24 July Last Survey 1 October 1939
 Reg. Book. Turn New Motor Vessel INDIAN REEFER (Number of Visits 2)
 on the Turn New Motor Vessel INDIAN REEFER Tons Gross 2814.86
Elsinore By whom built A/S Helsingør's Jernskibs- og Maskinbyggeri Yard No. 259 When built 1939
 Owners J. Lauritzen Port belonging to Esbjerg
 Electrical Installation fitted by A/S Helsingør's Jernskibs- og Maskinbyggeri Contract No. 1939
 Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. No E.S.D. No Gy.C. No Sub.Sig. No

Have plans been submitted and approved yes System of Distribution Two wire Voltage of supply for Lighting 220
 Heating 220 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 pole 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 In the port side of the motor room
✓, is the ventilation in way of generators satisfactory yes are they clear of inflammable material yes, if situated
No combustible material
 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 level with the top of the
main engines at 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 combustible material and vertically ✓, what insulation
 material is used for the panels Sindanyo, if of synthetic insulating material is it an Approved Type yes, if of
No slate or
marble semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule yes 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 three pole
circuit breaker with overload and reverse current trips
 and for each outgoing circuit A double pole switch and a fuse in each pole. For each of the 3
125 HP motors and for the switchboard for the control fans: A two-pole circuit breaker with
overload and reverse current trips.
 Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 8
 ammeters 3 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 2 sets of earth lamps, 1 Voltmeter with Ohm scale.

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 9 volts, 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 only for the oil pump, 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 The cables are supported by screw clips in insulated spaces arranged on galvanised steel plates (please see Surveyor's letter E 265-39). Lead covered and steel wire armoured cables used.

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 Yes 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 No, if so, how are they protected Yes.

and where are the controlling switches fitted Yes, 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 from bridge to forecabin 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 Yes. 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 unprotected work and vertically Yes.

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 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 ...	3	240	220	1090	500	Heavy oil engine	Crude oil	above 150° F
	1	15	220	68	1050	" " "	" " "	" " "
EMERGENCY ...								
ROTARY TRANSFORMER								

Rpt. 9a.

Port of Copenhagen Continuation of Report No. 11024 dated 10 October 1939 on the

Steel Twin Screw Motor Vessel INDIAN REEFER of Esbjerg
Yard No 259 by H. Hering's Jernstøber-og Maskinbyggeri, Ålborg

MAIN DISTRIBUTION CABLES

	NO PER POLE	AREA "in ²	AMPS CIRCUIT RULE	LENGTH M	INSUL	PROTECTED
Cooling water pumps for aux. motor	1	35	64 78	24	Vulcan	Lead covered
Cooling water pumps ref. mach.	1	70	102 124	30	rubber	steel wire
Pumps for sanitary purposes	1	16	44 49	20	rubber	armoured
Workshop motor	1	4	18 22	24	"	"
Turning gear	1	25	64 69	50	"	"
Cooler fans	2	2 x 240	515 554	16	"	"
Oil purifier	1	35	68 78	60	"	"
Crane and engine room ventilator	1	35	78 78	24	"	"
Fuel oil heater	1	150	182 205	60	"	"
" " "	1	50	91 98	12-12	"	"
Lubricating oil heater	1	50	91 98	60	"	"
Fresh water heater	1	50	69 98	20	"	"

LIGHTING - AND HEATING CABLES.

Heater for Tween Deck I	1	4	2.5	18.2 10	22 16	12 12	"	"
" " Hold I	1	6	2.5	23 10	29 16	12 12	"	"
" " " II	1	35	10	64 27	78 38	12 12	"	"
" " " III	1	35	16	73 36	78 49	12 12	"	"
" " " IV	1	35	16	73 36	78 49	12 12	"	"
" " " V	1	16	6	41 23	49 29	12 12	"	"

Steel Twin Screw Motor Vessel INDIAN REEFER of Esbjerg
yard No 259 by P. Helsingør Jensen & Søn - of Maskinbyggeri, Esbjerg

LIST OF ELECTROMOTORS

	No.	H.P.	CONSTRUCTION	DESCRIPTION
	1	15	compound	ballast pump
	2	8.5	shunt	bilge- and sanitary pumps
	1	5.5	shunt	fuel oil transfer pump
	3	20	compound	cooling seawater & fresh water pumps, ^{main} engines
	2	8	shunt	" " " " " " ^{auxiliary} engines
	3	27	compound	lubricating oil pumps
	2	8	serie	engine turning gear
	2	60	shunt	manoeuvring air compressors
	3	3.5	shunt	oil purifiers
	2	2.75	compound	hydrofor pumps
	1	0.8	serie	blower for galley
	1	50	compound	windlass
	1	15	serie	steering gear
	1	35	compound	hauling winch
	10	33	compound	winches.

REFRIGERATING
MACHINERY.

3	$10\frac{1}{25}$	compound	NH ₃ compressors Type E42
3	$3\frac{7}{48}$	compound	" " " " " " E22
1	10	shunt	" " " " " " provision
3	8	shunt	cooling water pumps.
2 + 1/2 span	7	compound	fans for coolers
3 + 1/2 span	35	compound	" " " " " "
1 + 1/2 span	16	compound	" " " " " "
6	0.8	serie	ventilators for holds.

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