

No.

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Survey Report... 15th Sept. 1947. When handed in at Local Office..... 19..... Port of... London

Survey held at... London Date, First Survey... 5th Aug. Last Survey... 15th Sept. 1947
(Number of Visits... 4.....)

Book. on the... Single Screw Motor Vessel "NICOYA" Ex "EMPIRE MOWDACH" Tons {Gross.....
Net.....

Bremen - Vegesack By whom built... Bremen Vulkan Yard No. 716 When built... 1935

Elder & Jyffes Ltd Port belonging to... Liverpool

Installation fitted by... Allgemeine Elektrizitäts Gesellschaft Contract No. --- When fitted ---

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

System of Distribution..... Voltage of supply for Lighting.....

Power..... Direct or Alternating Current, Lighting..... Power..... If Alternating Current state frequency..... Prime Movers,

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

as per Rule..... Generators, are they compound wound....., are they level compounded under working conditions.....,

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

run in parallel....., are shunt field regulators provided..... Is the compound winding connected to the negative or positive pole

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing..... Have certificates of

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

rators as per rule..... Position of Generators.....

is the ventilation in way of generators satisfactory..... are they clear of inflammable material....., if situated

ected combustible material state distance from same horizontally..... and vertically....., are the generators protected from mechanical

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

Switchboards, where are main switchboards placed.....

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

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

sed for the panels....., if of synthetic insulating material is it an Approved Type....., if of

ng material (slate or marble) are all conducting parts insulated therefrom as per Rule..... Is the frame effectually earthed.....

uction as per Rule....., including accessibility of parts....., absence of fuses on the back of the board....., individual fuses

earth lamps, voltmeters, etc..... locking of screws and nuts....., labelling of apparatus and fuses....., fuses on the "dead"

Description of Main Switchgear for each generator and arrangement of equaliser switches.....

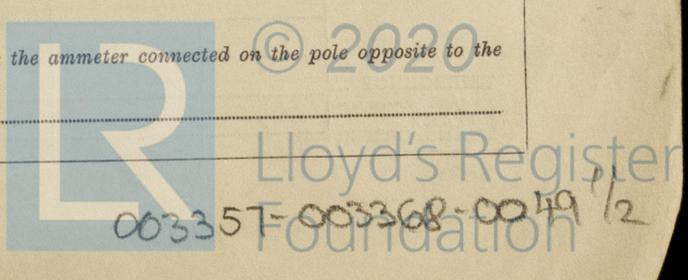
outgoing circuit.....

er of Shipping.....

vents containing switchboards composed of fire-resisting material or lined as per Rule..... Instruments on main switchboard.....

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

ection..... Earth Testing, state means provided.....



Switches, Circuit Breakers and Fuses, are they as per Rule _____, are the fuses an approved type _____, are all fuses labelled as per Rule _____, are the reversed current protection devices connected on the pole opposite to the equaliser connection _____, have they been tested under working conditions. *Yes* Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule _____

Cables, are they insulated and protected as per the appropriate Tables of the Rules _____, 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 _____ Are paper insulated and varnished cambric insulated cables sealed at the exposed ends _____

with insulating compound _____ or waterproof insulating tape _____ 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 _____, are cables laid under machines or floorplates _____, if so, are they adequately protected _____ Are cables in machinery spaces, galleys, laundries, etc., lead covered _____ or run in conduit _____ State how the cables are supported and protected *Lead covered and steel wire braided cables clipped on metal tray supported from bulkhead by steel hangers and cable clipped to bulkhead as required.*

Are all lead sheaths, armouring and conduits effectually bonded and earthed _____ Refrigerated chambers, are the cables and fittings as per Rule _____ Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands _____, where unarmoured cables pass through beams, etc., are the holes effectively bushed _____ and with what material _____ Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule _____ Emergency Supply, state position _____ and method of control _____

Navigation Lamps, are they separately wired _____ controlled by separate double pole switches _____ and fuses _____ Are the switches and fuses in a position accessible only to the officers on watch _____, is an automatic indicator fitted _____ 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 _____ Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present _____, if so, how are they protected _____

and where are the controlling switches fitted _____, are all fittings suitably ventilated _____, are all fittings and accessories constructed and installed as per Rule _____ Searchlight Lamps, No. of _____, whether fixed or portable _____, 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 _____ and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil _____, 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 _____ Control Gear and Resistances, are they constructed and fitted as per Rule _____ Lightning Conductors, where required are they fitted as per Rule _____ 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 _____, are all fuses of the cartridge type _____

are they of an approved type _____ 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				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	3	130	230	566	475	Diesel Motor	Diesel Oil above 150° F	
EMERGENCY ... SHORE LIGHTING ROTARY TRANSFORMER	1	4.65	110	42				

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATORS Nos 1, 2 & 3	130	2	185	566	470	49	Rubber	Lead covered and steel wire braided.
" " EQUALISER		1	185		235	49	"	"
EMERGENCY GENERATOR		1	25	34	63	33	Rubber	"
ROTARY TRANSFORMER: MOTOR		1	16	42	49	83	"	"
" " GENERATOR	4.65	1	16	42	49	83	"	"

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	NO.	SECTIONAL AREA OR NO. AND DIA. OF STRANDS. SQ. INS. OR SQ. MM.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.	
AUX. SWITCHBOARDS AND SECTION BOARDS	II	35	* 90	78	116	Rubber	Lead covered and steel wire braided.
	V	35	* 90	78	165	"	"
	VI	25	62	63	49	"	"
	VIII	150	60	205	99	"	"
	X & XIII	70	* 150	125	360	"	"
	XI	70+25	128	125	280	"	"
	XV	150	200	205	66	"	"
	XVI	120	155	175	83	"	"
	XVII	120	160	175	116	"	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	NO.	SECTIONAL AREA OR NO. AND DIA. OF STRANDS. SQ. INS. OR SQ. MM.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.	
WIRELESS	1	16	25	49	198	Rubber	Lead covered and steel wire braided.
NAVIGATION LIGHTS	1	2.5	10	15.5	210	"	"
LIGHTING AND HEATING							
Section Board I, III & IX	1	70	95	125	280	"	"
	1	25	46	63	280	"	"
	1	35	43	78	165	"	"
IV + V	1	25	47	63	165	"	"
IV	1	25	60	63	116	"	"
VIII	1	10	20	38	116	"	"
VII	1	25	15	63	360	"	"
X + XII	1	2.5	10	15.5	33	"	"
XIV	1	2.5	10	15.5	33	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	SECTIONAL AREA OR NO. AND DIA. OF STRANDS. SQ. INS. OR SQ. MM.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.		
Cooling Water Pump (Plant)	2	25	1	25	81	63	60	Rubber	Lead covered and steel wire braided.
" " (Purifier)	2	16	1	16	60	49	43	"	"
" " " Pat Service	1	7.5	1	10	30	38	60	"	"
Bilge Pump	1	10	1	10	40	38	23	"	"
Fire Pump	1	12	1	16	48	49	17	"	"
Ballast Pump	1	16	1	25	60	63	27	"	"
Freshwater Pump	1	3	1	2.5	13	15.5	30	"	"
Auxiliary Lub. Oil Pump	1	10	1	10	40	38	46	"	"
Daily Service Fuel Oil Pump	1	10	1	10	40	38	27	"	"
Lub. Oil Separator	1	2.5	1	2.5	11	15.5	27	"	"
CO ² Compressor	2	75/100	1	185	268	235	116	"	"
Refrig. Cooling water pump	1	8.5	1	10	34	38	83	"	"
Brine Pumps	3	8.5	1	10	34	38	23	"	"
Cargo Hold Fans	2	19	1	35	73	78	50	"	"
" " "	2	14	1	25	55	63	26	"	"
Domestic Refrig.	1	7	1	10	28	38	33	"	"
Turning gear	1	10	1	10	40	38	50	"	"
Workshop motor	1	4	1	4	17	22.5	50	"	"
Windlass	1	45/20	1	50	161/64	142	27	"	"
Cargo Winches	4	18	1	16	67	* 56	26	"	"
" " "	4	25	1	16	92	* 56	26	"	"
Steering gear	1	5	1	10	21	38	198	"	"

* Wind density factor.
* 1/2 hr Rating.

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.

..... Electrical Engineers. Date.....

COMPASSES.

Minimum distance between electric generators or motors and standard compass.....

Minimum distance between electric generators or motors and steering compass.....

The nearest cables to the compasses are as follows:—

A cable carrying Ampères feet from standard compass 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

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 degrees on course in the case of the

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

..... Builder's Signature. Date.....

Is this installation a duplicate of a previous case..... Yes If so, state name of vessel M.V. "PACUARE"

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

Installation of this vessel has been fitted in accordance with Germanischer Lloyd Rules.

The electrical equipment has been reconditioned and insulation tests brought up to Rule requirements and the installation has been tested under working conditions and found satisfactory. Although the equipment differs in minor respects and some cable sizes are below Rule requirements, the installation is in my opinion such as might be accepted for Classification.

Total Capacity of Generators..... 390 Kilowatts.

The amount of Fee £	:	:	When applied for,19.....
Travelling Expenses (if any) £	:	:	When received,19.....

F. H. Tichell.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... FRI, 3 OCT 1947.....

Assigned.....

2m.10.38.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)

