

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

24 OCT 1929

Date of writing Report *19th Oct. 1929* When handed in at Local Office *22nd Oct. 1929* Port of *Mahmō*

No. in Survey held at *Mahmō* Date, First Survey *27th Aug.* Last Survey *16th Oct. 1929*

Reg. Book. *35576* on the *Steel Twin Screw Motorship "TAI SHAN"* Tons { Gross *6603.70*
Net *4058.41*

Built at *Mahmō* By whom built *Hockemus M. T. Uetrich* Yard No. *160* When built *1929*

Owners *The Transpacific Corporation* Port belonging to *Panama*

Electric Light Installation fitted by *Hockemus M. T. Uetrich* Contract No. *✓* When fitted *1929*

System of Distribution *Two wire system.*

Pressure of supply for Lighting *110* volts, Heating *220* volts, Power *230* 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 overload *Yes*, are they compound wound *Yes*

are they over compounded 5 per cent. *Yes*, if not compound wound state distance between each generator *✓*

Where more than one generator is fitted are they arranged to run in parallel *Yes*, is an adjustable regulating resistance fitted in

series with each shunt field *Yes*

Are all terminals accessible and clearly marked *Yes*, are they so spaced or shielded that they cannot be accidentally earthed,

or short circuited *Yes* Are the lubricating arrangements of the generators as per Rule *Yes*

Position of Generators *On port side in the motor space.*

is the ventilation in way of the generators satisfactory *Yes*, are they clear of all inflammable material *Yes*

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

✓ and *✓*, are the generators protected from mechanical injury and damage from water, steam or oil *Yes*

are their axis 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 generators in metallic contact *Yes*

Main Switch Boards, where placed *On a platform at the forward end of the motor space.*

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 mechanical injury and damage from water, steam or oil *Yes*, if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards *✓* and *✓*

are they constructed wholly of durable, incombustible non-absorbent materials *Iron*, is all insulation of high dielectric strength and of

ently high insulation resistance *Yes*, if semi-insulating material is used, are all conducting parts connected to one pole

ated from the slab with mica or micanite and the slab similarly insulated from its framework *insulation 5000 V. fitted*, and is the

frame effectively earthed *Yes* Are the following fittings as per Rule, viz.:— spacing or shielding of live parts

Yes, accessibility of all parts *Yes*, absence of fuses on back of board *✓*, proportion of omnibus

bars *Yes*, individual fuses to voltmeter, pilot or earth lamp *Yes*, connections of switches *Yes*

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches *For each generator:—*

A double pole circuit breaker with overload and reversed-current trips and a single pole

equalizer switch. For each outgoing circuit:— A double pole linked switch and a fuse on each pole

Instruments on main switchboard *11* ammeters *5* voltmeters synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system *Ohm-meters with*

earthing indicators for both poles.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules *Yes*

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule *Yes*



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Insulation of Cables, state type of cables, single or twin *Both* are the cables insulated and protected as per Tables III or IV of the Rules *Yes*
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *2 V + 3 per cent for lighting*
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.007 square inch and above provided with soldering sockets *Yes*
Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *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*
Support and Protection of Cables, state how the cables are supported and protected *Supported by metal clips. All cables steel type Armoured except in cabins where they are lead covered. Where required protected by steel sheets or pipes.*
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 VI *Yes*
Refrigerated Chambers, if lights are fitted, 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 in main cables. Joints in section cables made by means of joining boxes.*
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 Positions, 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 bushes. Armoured cables.*
Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Yes*
are their connections made as per Rule
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 *Yes*
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*, are separate screens provided for the use of oil and electric side lights *Yes*
are separate oil lanterns provided for the mast head lights and side lights *Yes*
Fittings, are all fittings on weather decks, in stokeholds 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
are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected
how are the cables led
where are the controlling switches situated
Searchlight Lamps, No. of *Yes*, whether fixed or portable *Yes*, are their fittings as per Rule *Yes*
Arc Lamps, other than searchlight lamps, No. of *Yes*, are their live parts insulated from the frame or case *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 axis of rotation fore and aft *Yes as a rule.*
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
if not of this type, state distance of the combustible material horizontally or vertically above the motors.
Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed 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*
If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *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	120 each	230	3-520	350	3-cyl. Diesel engines	Special Oil	Above 150° F.	
AUXILIARY									
EMERGENCY									
ROTARY TRANSFORMER	1	15	220	91	130				

LIGHTING AND HEATING CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	240	61	2.24	550	70	Rubber	Lead covered and steel tape armoured.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...	1	5.70	19	2.17	130	6	"	"
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	16	7	1.71	35	16	"	"
	BOILER ROOM								
	Secondary Battery	1	25	7	2.13	50	35	"	"
	Section Board A	1	16	7	1.71	25	36	"	"
	" B	1	16	7	1.71	25	52	"	"
	" C	1	35	7	2.53	60	120	"	"
	" D	2	6	7	1.05	15	190	"	"
	" E	2	4	7	0.86	7	150	"	"
	" F	2	10	7	1.35	25	120	"	"
	" G	2	10	7	1.35	25	120	"	"
	WIRELESS	1	10	7	1.35	9	100	"	"
	SEARCHLIGHT								
	MASTHEAD LIGHT...	1	1.5	7	0.52	1.5	190	"	"
	SIDE LIGHTS	1	1.5	7	0.52	1.5		"	"
	COMPASS LIGHTS	1	1.5	7	0.52	1.5		"	"
	POOP LIGHTS	1	1.5	7	0.52	1.5	210	"	"
	CARGO LIGHTS <i>see C & D.</i>								
	ARC LAMPS								
	HEATERS <i>see C & D.</i>	1	16	7	1.71	45	80	"	"

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMPS	2	50	19	1.83	96	34	Rubber	Lead covered and steel tape armoured.
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP	2	25	7	2.13	56	54	"	"
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	Cargo Water Pumps	2	120	37	2.03	160	31	"	"
	Cooling Water Pumps	1	2x10	7	1.35	28	22	"	"
	Oil Water Pumps R.H.	2	2x10	7	1.35	30	54	"	"
	FRESH WATER PUMP	1	2x25	7	0.67	4	80	"	"
	ENGINE TURNING GEAR	2	25	7	2.13	56	90	"	"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	120	37	2.03	142	28	"	"
	OIL FUEL TRANSFER PUMPS	1	2x6	7	1.05	20	38	"	"
	WINDLASS	1	185	37	2.32	360	166	"	"
	WINCHES, FORWARD	1	130	37	2.32	2x140	140	"	"
	WINCHES, AFT	2	2x50	19	2.52	2x100	40	"	"
	STEERING GEAR	1	70	19	2.17	100	250	"	"
	WORKSHOP MOTOR	1	2x4	7	0.86	12	7	"	"
	VENTILATING FANS	4	35	7	2.13	4x18	150	"	"
	3 Borne pumps	3	25	7	2.13	3x18	60	"	"
	2 CO2 compressors	2	240	61	2.24	240	80	"	"
	Small oil separator	1	25	7	2.13	50	48	"	"
	Large oil separator	2	35	7	2.53	62	64	"	"
	Large oil pump	1	25	7	2.13	46	54	"	"
	Winches aft	2	120	37	2.03	2x140	130	"	"
	Winches on poop deck	2	95	19	2.52	68	100	"	"
		1	95	19	2.52	140	180	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

W. H. J. ...

Electrical Engineers.

Date 22/10 1929

COMPASSES.

Distance between electric generators or motors and standard compass 37 m.

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.

KOCKUMS MEKANISKA VERKSTADS
FABRIK

G. ...

Builder's Signature.

Date

Is this installation a duplicate of a previous case Yes If so, state name of vessel T.S.M.S. "TAI PING"

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

The above described electric installation has been fitted onboard under my inspection and has been tested and found satisfactory.
The materials and the workmanship are both good.
All the Rule requirements have been complied with.

It is submitted that
this vessel is eligible for
THE RECORD.

Elec. Light

SA.

25/10/29.

Total Capacity of Generators 360 Kilowatts

The amount of Fee ... \$737.10 : When applied for, 22nd Oct. 1929.

Travelling Expenses (if any) £ : : When received, 7.11.29.

Adm ...
Surveyor to Lloyd's Register of Shipping.

Committee's Minute 10E. 20 OCT 1929

Assigned

Elec. Lt.



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