

BE DEC 1955

Rpt. 13

No. 2083.

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

26 JUN 1942

Date of writing Report: 11th June, 42. When made at last of vessel: 11th June, 42. Port of: Malacca.
 Name of vessel: Malacca. Date, First Survey: 2nd Oct. 1941. Last Survey: 4th June, 42.
 Reg. Book: Single screw motor tanker "BRALI" (Number of Vols: 21).
 Built at: Malacca. By whom built: Kockumma M. V. A. B. Yard No. 218. When built: _____
 Owners: M/s. Ollie, Ocho. Port belonging to: Ocho.
 Electrical installation fitted by: Kockumma M. V. A. B. Contract No. _____. When fitted: _____.
 Is vessel fitted for carrying Petroleum in bulk: Yes. Is vessel equipped with D.F. M. S. D. Yes. Gy. C. No. Sub. Sig. No.

Have plans been submitted and approved: Yes. System of Distribution: Two main systems. Voltage of supply for Lighting: 110. ✓
 Heating: 110. ✓ Power: 220. ✓ Direct or Alternating Current, Lighting: Direct. Power: Direct. Alternating Current state frequency: _____. Prime Movers, _____.
 Has the governing been tested and found efficient when the whole load is suddenly thrown on and off: _____. 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: _____. 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: Main: One on each side at the front of motor space. No steam driven: One 2nd deck in the motor space, port side. ✓
 Is the ventilation in way of generators satisfactory: Yes. ✓ are they clear of inflammable material: Yes. ✓, if situated 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: In the front of motor space, centre. ✓

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: _____. and vertically: _____. what insulation material is used for the panels: Main - Insul. ✓ if of synthetic insulating material is it an Approval Type: _____. if of other insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule: _____. Is the frame effectively 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: Generators: A double pole circuit breaker with overload and reverse current trips and a single pole equaliser switch. ✓
 and for each outgoing circuit: A double pole linked switch and a fuse on each pole. ✓

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule: Yes. ✓ Instruments on main switchboard: 8
 ammeters: 5. ✓ voltmeters: _____. ✓ synch. rotating devices: _____. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection: Yes. ✓
 Earth Testing: are 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 no

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 Rules are they of an approved type no state maximum fall of pressure between bus bars and any point under maximum load not opt tested 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 ✓

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 yes are cables laid under machines or floorplates yes if so, are they adequately

protected yes 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. Protected where necessary.

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 bashed 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 ✓

and method of control ✓

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

Lamps contained in gas-tight fittings and cables led in gas-tight tubing.

and where are the controlling switches fitted wholly outside these spaces are all fittings suitably ventilated yes

are all fittings and accessories constructed and installed as per Rule yes Searchlight Lamps, No. of ✓ whether fixed or portable ✓

are their fittings as per Rule ✓ 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 none 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 no motor over 100 B.H.P. 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 ✓ 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 not opt tested.

PARTICULARS OF GENERATING PLANT.

| DESCRIPTION OF GENERATOR. | No. of | RATED AT | | | | DRIVEN BY | WHEN DRIVEN BY AN INTERNAL COMBUSTION ENGINE | |
|---------------------------|--------|-----------|-------|---------|----------------|--------------------|--|----------------------|
| | | Kilowatts | Volts | Amperes | Revs. per Min. | | Fuel Used | Flash Point of Fuel. |
| MAIN | 2 | 90 | 230 | 391 | 380 | Heavy oil engines. | Heavy oil. | Above 150° F. |
| Emergency | 1 | 25 | 230 | 114 | 600 | Steam engine. | | |
| EMERGENCY | | | | | | | | |
| ROTARY TRANSFORMER | 1 | 20 | 115 | 174 | 1500 | | | |

GENERATOR CABLES.

| DESCRIPTION. | KILOWATTS. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (feet plus return lead) - mts. | INSULATED WITH. | HOW PROTECTED. |
|---------------------------|------------|---------------------------|--------------------------------------|-----------------------------|-------|---|-----------------|---------------------------------------|
| | | No. in Parallel Per Cable | Sectional Area Sq. Inches or Sq. Mm. | In the Circuit. | Rule. | | | |
| MAIN GENERATOR | 90 | 2 | 150 | 391 | 400 | max. 18 | Cable | Lead covered and steel tape armoured. |
| EQUALISER | | 2 | 150 | - | - | 18 | " | " |
| Emergency generator. | 25 | 1 | 70 | 114 | 125 | 22 | " | " |
| EMERGENCY GENERATOR | 24 | 1 | 70 | 125 | 125 | 20 | " | " |
| ROTARY TRANSFORMER. MOTOR | 20 | 1 | 150 | 174 | 200 | 26 | " | " |
| GENERATOR | | | | | | | | |

MAIN DISTRIBUTION CABLES.

| ALL SWITCHBOARDS AND SECTION BOARDS | | | | | | | | |
|-------------------------------------|---|----|-----|-----|-----|-------|---------------------------------------|--|
| A1 | 1 | 95 | 120 | 150 | 180 | Cable | Lead covered and steel tape armoured. | |
| A2 | 1 | 16 | 145 | 48 | 80 | " | " | |
| B | 1 | 25 | 36 | 63 | 65 | 250 | " | |
| C | 1 | 6 | 16 | 28 | 6 | " | " | |
| D | 1 | 25 | 35 | 62 | 56 | " | " | |
| E | 1 | 25 | 36 | 62 | 66 | " | " | |
| F | 1 | 25 | 493 | 62 | 3 | " | " | |
| G | 1 | 10 | 30 | 38 | 40 | 77 | " | |
| J | | | | | | | | |

LIGHTING AND HEATING, ETC., CABLES.

| | | | | | | | | |
|----------------------|---|---|----|----|-----|----------|-------|---------------------------------------|
| WIRELESS | H | 1 | 16 | | 48 | 155 | Cable | Lead covered and steel tape armoured. |
| NAVIGATION LIGHTS | B | 1 | 6 | | 20 | 192 | " | " |
| LIGHTING AND HEATING | | | | | | | | |
| Most heat lights | | 1 | 15 | 04 | 8 | max. 150 | " | |
| Side lights | | 1 | 15 | 04 | 8 | 20 | " | |
| Pump lights | | 1 | 15 | 04 | 8 | 250 | " | |
| More lights | | 1 | 15 | 04 | 8 | 16 | " | |
| Compass lights | | 1 | 15 | 04 | 8 | max. 14 | " | |
| Cooking | | 1 | 50 | 95 | 100 | 63 | " | |
| Isolator heaters | | 1 | 25 | 65 | 15 | max. 20 | " | |
| Oil heaters | | 1 | 25 | 75 | 76 | 66 | " | |

MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | | No. | B.H.P. | | | | | |
|--|--|-----|--------|---|-----|------|-----|---------|
| Oil pump | | 1 | 5 | 1 | 4 | 20 | 22 | 61 |
| Oil & water pump | | 1 | 8 | 1 | 10 | 22 | 40 | 57 |
| Oil & water pump | | 2 | 22 | 1 | 50 | 22 | 100 | max. 28 |
| " " pump and eng. | | 1 | 55 | 1 | 6 | 21.5 | 28 | 32 |
| Compressing machinery | | 1 | 14 | 1 | 25 | 57 | 62 | 48 |
| Lubricating oil pumps | | 2 | 23 | 1 | 70 | 128 | 24 | max. 63 |
| Oil fuel transfer pump | | 1 | 5 | 1 | 4 | 20 | 22 | 22 |
| Cooling pump for machinery | | 1 | 1 | 1 | 1.5 | 43 | 68 | 64 |
| Water oil separator | | 1 | 3 | 1 | 2.5 | 12 | 15 | 19 |
| Water | | 1 | 7 | 1 | 6 | 27 | 28 | 24 |
| Water compressor | | 2 | 3 | 1 | 2.5 | 128 | 15 | max. 10 |
| Thru pump | | 1 | 13 | 1 | 2.5 | 51 | 22 | 124 |
| Water pump | | 1 | 3 | 1 | 2.5 | 12.5 | 15 | 56 |
| Water pump | | 1 | 6 | 1 | 6 | 24 | 28 | 72 |
| Water pump | | 1 | 2.2 | 1 | 2.5 | 9.5 | 15 | 28 |
| Water pump | | 1 | 2.2 | 1 | 2.5 | 9.5 | 15 | 66 |
| Water pump for the main boiler | | 1 | 4 | 1 | 4 | 17 | 22 | 63 |

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

50 yards from bridge.

Minimum distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying alt 2 Ampères 9 feet from standard compass 6 feet from steering compass.

A cable carrying alt 2 Ampères 9 feet from standard compass 6 feet from steering compass.

A cable carrying alt 2 Ampères 9 feet from standard compass 6 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power no.

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 KOCKUMS course in the case of the steering compass.

KOCKUMS VERKESTADS AKTIEBOLAG

Builder's Signature.

Date 10th June 1942.

Is this installation a duplicate of a previous case No.

If so, state name of vessel ✓.

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

The above described electrical equipment installation has been fitted onboard under survey in accordance with the Rules, approved plans and instructions.

The workmanship and the materials are good.

In complete survey.

The electric installation is to be again tested and tested under working conditions and the maximum fall of pressure return has been and any points under maximum load to be noted.

It cannot be stated when the survey will be completed.

Total Capacity of Generators 205 ✓ Kilowatts.

90% of total power has been applied for

The amount of see

Re. 731.02

When applied for, 11th June 1942.

Travelling Expenses (if any) £ 19

When received.

Surveyor to Lloyd's Register of Shipping

TUE 21 JUL 1942

FRI 17 JUL 1942

Committee's Minute

Assigned

See Memo. 76.2013



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