

Rpt. 13.

No. 31980^A

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 10 FEB 1950

Date of writing Report 6/1 1950 When handed in at Local Office 7/1 1950 Port of ROTTERDAM

No. in Survey held at SCHIEDAM Date, First Survey 6/8/48 Last Survey 9/1 1950
Reg. Book. (Number of Visits 6)

on the MOTOR TANKER "MITRA" Tons { Gross 8262.60
Net 4600.03

Built at SCHIEDAM By whom built WILTON FVENDORD N.V. Yard No. 720 When built XII/49

Owners NV PETROLEUM MY. "LALORDNA" Port belonging to S-GRAVENHALE

Electrical Installation fitted by H. CROON & CO N.V. Contract No. When fitted XII/49

Is vessel fitted for carrying Petroleum in bulk YES Is vessel equipped with D.F. YES E.S.D. YES Gy.C. YES Sub.Sig. NO
RADAR. NO.

Have plans been submitted and approved yes System of Distribution two wire insulated system Voltage of supply for Lighting 110

Heating 110 Power 110 Direct or Alternating Current, Lighting direct Power direct If Alternating Current state periodicity Prime Movers,

has the governing been tested and found as per Rule when full 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 no, are shunt field regulators provided yes Is the compound winding connected to the negative or positive pole

negative 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 engine room floor level stbd 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 engine room floor level near generators

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 Synonyo, if of synthetic insulating material is it an Approved Type yes, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule 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 2-pole manually

operated circuit breaker with V/C trips in each pole (instantaneous setting in - pole and

with time delay of 0.5 sec in + pole) and 2-pole in + pole. Make G. E. C.

and for each outgoing circuit G.P. switches and G.P. fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 2

ammeters 2 voltmeters synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection Earth Testing, state means provided earth lamps connected to "E" through G.P. switch and G.P. fuses

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 If circuit breakers are provided for the generators, at what overload current did they open when tested + 25% are the reversed current

protection devices connected on the pole opposite to the equaliser connection, have they been tested under working conditions, and at what current

did they operate 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

state maximum fall of pressure between bus bars and any point under maximum load 56% are the ends of all cables having a sectional area of 0.04

square inch and above provided with soldering sockets yes except the mineral-insulated cables Are paper insulated and varnished cambric insulated cables sealed at the 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 machinings or floorplates. Yes if so, are they adequately protected. Yes Are cables in machinery spaces, galleys, laundries, etc., lead covered or run in conduit. State how the cables are supported and protected. Machinery spaces: all outgoing circuits from the main switchboard mineral insulated upper sheathed cables fitted on surface or trays. The remaining cables are h.l.e. & M.W.B. clipped to sheet iron ground plates. Galleys, laundries and aft gangways are h.l.e. & M.W.B. fitted in impregnated blocks of wood. Accommodation spaces: h.l.e. cable clipped to surface of wood grounds. Are all lead sheaths, armoring 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. Battery placed on deck at the top E.R. supplied emergency lighting and method of control. Automatic operated switch placed in emergency switchboard situated in E.R. above deck level. 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 what is the battery capacity in ampere hours. Nickel iron battery 45 amp hours, 24 volt make NYFE type T.A.4.5 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. Flame Proof type fittings and where are the controlling switches fitted. in a safe position, are all fittings suitably ventilated. Yes are all fittings and accessories constructed and installed as per Rule. Yes Searchlight Lamps, No. of one, whether fixed or portable. Portable Searchlight are their fittings as per Rule. 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. Yes and vertically. Yes Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment. 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 Lighting 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 Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships. Yes Are the cables lead covered as per Rule. 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 tested and found satisfactory. Yes

PARTICULARS OF GENERATING PLANT.

| DESCRIPTION OF GENERATOR. | Serial No. of | RATED AT | | | | Revs. per Min. | DRIVEN BY | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. | |
|---------------------------|---------------|------------|--------|-------|------|----------------|---------------|--|----------------------|
| | | Kilowatts. | Volts. | Amps. | Make | | | Fuel Used. | Flash Point of Fuel. |
| MAIN | 207132 | 30 | 110 | 27/3 | 675 | Hammeskoll | Steam engine | | |
| | 209004 | 30 | 110 | 27/3 | 675 | " | Diesel engine | Fuel oil above 150° F | |
| EMERGENCY | | | | | | | | | |
| ROTARY TRANSFORMER | | | | | | | | | |

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 GENERATOR | 30 | 1 | 0.2 | 25/3 | 404 | 19 | M.Y. | L.S. |
| " " EQUALISER | 30 | 1 | 0.2 | 25/3 | 404 | 15 | M.Y. | L.S. |
| EMERGENCY GENERATOR | | | | | | | | |
| ROTARY TRANSFORMER: MOTOR | | | | | | | | |
| " " GENERATOR | | | | | | | | |

MAIN DISTRIBUTION CABLES.

| DESCRIPTION. | 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. | | | |
| AUX. SWITCHBOARDS AND SECTION BOARDS | | | | | | | |
| Supplied from main switchboard | | | | | | | |
| 1.2. box for E.R. and B.R. placed in E.R. marked 1 | 1 | 0.0145 | 40 | 60 | 16 | | |
| 1.3. box for E.R. placed aft ship | 1 | 0.023 | 5 | 10 | 70 | | |
| 1.4. box for aft ship placed aft marked E | 1 | 0.0145 | 40 | 60 | 56 | | |
| Emergency switchboard placed in E.R. | 1 | 0.0145 | 14.5 | 60 | 24 | M.Y. | L.S. |
| 1.5. box placed in E.R. marked 1 | 1 | 0.2 | 240 | 314 | 36 | | |
| More connection | 1 | 0.2 | 200 | 314 | 56 | | |
| 1.6. box placed in E.R. marked 1 | 1 | 0.2 | 200 | 314 | 56 | M.Y.R. | M.W.B. |
| 1.7. box for E.R. top marked G1 | 1 | 4 sq. mm | 8 | 22.5 | 70 | | |
| 1.8. box Workshop - E.R. | 1 | 4 | 4 | 22.5 | 20 | M.Y.R. | M.W.B. |
| 1.9. box - E.R. | 1 | 4 | 4 | 22.5 | 60 | | |
| 1.10. box E.R. and B.R. | 1 | 4 | 4 | 22.5 | 60 | | |
| 1.11. box - E.R. | 1 | 4 | 4 | 22.5 | 2 | | |
| LIGHTING AND HEATING, ETC., CABLES. | | | | | | | |
| WIRELESS | 1 | 10 sq. mm | 20 | 30 | 20 | M.Y.R. | L.S. |
| NAVIGATION LIGHTS | | | | | | | |
| Supplied from main switchboard | | | | | | | |
| LIGHTING AND HEATING | | | | | | | |
| Supplied from Navigation distribution box A.1.: | | | | | | | |
| Searchlight | 1 | 1.5 | 0.5 | 0.5 | 200 | | |
| Forehead light aft | 1 | 1.5 | 0.5 | 0.5 | 154 | | |
| Port sidelight | 1 | 1.5 | 0.5 | 0.5 | 30 | M.Y.R. | M.W.B. |
| Starboard sidelight | 1 | 1.5 | 0.5 | 0.5 | 24 | | |
| Forehead light fore | 1 | 1.5 | 0.5 | 0.5 | 120 | | |
| Supplied from main switchboard and placed midship | | | | | | | |
| 1.12. compass installation | 6 | 15 | 15 | 20 | 42 | M.Y.R. | M.W.B. |
| Supplied from Navigation box placed in chest-house marked 19 | | | | | | | |
| 1.13. compass installation | 1 | 1.5 | 1 | 0.5 | 200 | | |
| 1.14. compass installation | 1 | 1.5 | 2 | 0.5 | 200 | M.Y.R. | M.W.B. |
| 1.15. compass installation | 1 | 1.5 | 2 | 0.5 | 50 | | |

MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | Serial No. | B.H.P. | 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. | | | |
| From main switchboard | | | | | | | | | |
| Turning gear motor | 31197 | 15 | 1 | 0.06 | 40 | 143 | 31 | M.Y. | L.S. |
| Push air fan (aft ship) | 111110 | 5.6 | 1 | 0.0145 | 40 | 60 | 56 | | |
| From P.S. box placed in E.R. marked 1 | | | | | | | | | |
| 1.16. oil separator | 1911-143217 | 1.5 KW | 1 | 6 sq. mm | 17 | 20 | 54 | | Area |
| 1.17. oil valve circulating pump | 42505 | 0.75 | 1 | 25 | 7.1 | 16.5 | 59 | | Complete Greenwood |
| 1.18. drilling machine | L.84-33812 | 2 | 1 | 0 | 17 | 24 | 24 | | Worcestershire |
| 1.19. air supply fan E.R. | | 0.35 | 1 | 1.5 | 2 | 0.5 | 32 | | |
| 1.20. air supply fan galley | 117206 | 0.6 | 1 | 2.5 | 5.7 | 15.5 | 77 | | Hugh Holt |
| 1.21. air supply fan | 11546 | 0.6 | 1 | 2.5 | 5.7 | 16.5 | 47 | M.Y.R. | L.S. & M.W.B. Hugh Holt |
| 1.22. potato-pul machine | | 1 | 1 | 2.5 | 8 | 15.5 | 44 | | |
| 1.23. lathe | 2.111-15004 | 3 | 1 | 10 | 25 | 30 | 16 | | Globe Engineering |
| 1.24. grinding machine | 104044 | 2 | 1 | 10 | 16 | 30 | 12 | | Millard |
| 1.25. Fuel oil separator 1 | 20R-2052 | 7.5 | 1 | 25 | 60 | 63 | 34 | | Mansley's Ltd |
| 1.26. Fuel oil separator 2 | 20R-2050 | 4.5 | 1 | 25 | 60 | 63 | 54 | | |
| 1.27. Swimming pump fuel oil | 170-34188 | 1.5 | 1 | 10 | 40 | 44 | 20 | | Smith-Hickman |
| From main switchboard placed midship | | | | | | | | | |
| 1.28. Push air fan mid-ship P.1 | 114505 | 5.45 | 1 | 10 | 47 | 44 | 82 | M.Y.R. | L.S. & M.W.B. Hugh Holt |
| From distribution box B.4. | | | | | | | | | |
| 1.29. Air supply fan S.1. Bridge span | 111647 | 0.6 | 1 | 1.5 | 5.7 | 0.5 | 43 | M.Y.R. | L.S. & M.W.B. Hugh Holt |

not yet filled

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.

p.p. N.V. Rotterdamsche Electriciteits Mij.
 v/b H. DEBOON & Co.

Electrical Engineers.

Date 31st Jan 1950

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..... no If so, state name of vessel.....
 Plans. Are approved plans forwarded herewith..... no If not, state date of approval..... 6-9-48 and plans No 2206/D1197 and 2206/R 31430
 Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith..... yes

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)
 The electrical equipment of this vessel has been constructed and installed under my supervision in accordance with the 1949 Rules, the approved and amended plans and the Secretary's letter dated 5/II/48.
 The materials used are of good quality and the design and the workmanship are. Insulation and other tests have been carried out with satisfactory results.
 On completion the equipment has been tried out during the trials under full working conditions and found good.
 This equipment is in my opinion suitable for a classed vessel having the notation "Carrying Petroleum in Bulk".

Note sent 27/2/50.

Total Capacity of Generators..... 601 Kilowatts.

The amount of Fee ... £681.- : When applied for, 6/2.19.50
 Travelling Expenses (if any) £22.50 : When received,19.....

M. de Vries (H.V.D. SLUIS)
 Surveyor to Lloyd's Register of Shipping.

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

Committee's Minute
 Assigned..... For units see J.S. Rpt

FRI. 10 MAR 1950