

28 JAN 1960

Rpt. 13.

No. 35215

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

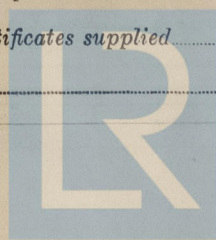
Date of writing Report 12th Jan. 1960 When handed in at Local Office 25-1-1960 Port of Antwerp
 No. in Survey held at Antwerp Date, First Survey 19-5-59 Last Survey 2-12-1959
 Reg. Book. (No. of Visits 15)
 40414 on the tanker "HECTOR HAWK" Tons Gross 16807 Net 10252
 Built at Tamise By whom built Jos Boel & Sons Yard No. 1362 When built 1959
 Owners Hector Whaling Ltd. Port belonging to London
 Installation fitted by Electro Navale et Industrielle S.A. When fitted 1959
 Is vessel equipped for carrying Petroleum in bulk yes Is vessel equipped with D.F. yes E.S.D. yes Gy.C. yes Sub.Sig. yes Radar yes

Plans, have they been submitted and approved yes System of Distribution Three phase three wire Voltage of Lighting 115
 Heating 115 Power 440 D.C. or A.C., Lighting Power If A.C. state frequency 60
 Prime Movers, has the governing been found as per Rule when full load is thrown on and off yes Are turbine emergency governors fitted
 with a trip switch - Alternators with exciters Generators, are they compound wound, and level compounded under working conditions -
 Are the generators arranged to run in parallel yes Is the compound winding connected to the negative or positive pole -
 Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing yes Have certificates of test for machines
 under 100 kw. been supplied and the results found as per Rule yes Position of Generators One forwd. Stbd. side, one aft
 stbd. side and one forwd. port side all in main engine room.
 is the ventilation in way of generators satisfactory yes are they clear of inflammable material and protected from mechanical injury and
 damage from water, steam and oil yes Switchboards, where are main switchboards placed Platform deck
 Port side main engine room, thwart ship against forwd. bulkhead.
 are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water,
 steam and oil yes, what insulation is used for the panels Dead front type (Resarm), 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 construction as per Rule, including locking of screws and nuts yes Description of Main Switchgear
 for each generator and arrangement of equaliser switches three pole circuit breakers S.A.C.E. Series Pl size 800 amp.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit three pole circuit breakers S.A.C.E. series Z2,
 Pl and Z and two pole circuit breakers Siemens, series SN with back-up protection by Gehess fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 6
 ammeters 5 voltmeters 2 synchronising devices. For compound machines in parallel are the ammeters and reverse current
 protection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided earth
 fault indicating lamp on each pole Preference Tripping, state if provided yes, and tested yes
 Switches, Circuit Breakers and Fuses, are they as per Rule yes, are the fuses an Approved Type yes
 make of fuses Gehess, are all fuses labelled yes If circuit breakers are provided for the generators, at what
 overload do they operate 580 amp. 20 sec., and at what power do the reverse power protective-
 devices operate 24 KW 10 sec. Cables, are they insulated and protected as per Rule 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 6 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends 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 any cables laid under machines or floorplates yes, if so, are they adequately protected yes State
 type of cables (if in conduit this should also be stated) in machinery spaces V.I.R. IC & A., galleys V.I.R. IC & A.,
 and laundries VC. LC & A. VC. LC & A. MIC. VC. LC & A. MIC. State how the cables are supported or protected clipped to steel trays or to bulk-
 heads. Run in heavy steel conduit. Protected against mechanical damage where necessary. Cables on fore and
 aft gangway installed with adequate expansion bends.

Are all lead sheaths, armouring and conduits effectually bonded and earthed 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 provision Retriggered/chambers, are the cables and fittings as per Rule yes
 Have refrigeration fan motors been constructed under survey - and test certificates supplied -
 Are the motors accessible for maintenance at all times -



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Lloyd's Register
Foundation

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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. yes Emergency Supply, state position one battery on poopdeck (P.S.) and one on top of wheel house.

Navigation Lamps, are they separately wired. yes controlled by separate double pole switches 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 Is an alternative supply provided. yes

Secondary Batteries, are they constructed, fitted and adequately ventilated as per Rule. yes, state battery capacity in ampere hours. One of 60 amp/hr. and one of 40 amp/hr. Where required to do so does it comply with 1948 International Convention. -

Lighting, is fluorescent lighting fitted. yes If so, state nominal lamp voltage. 115 volt and compartments where lamps are fitted. Engine and Boiler rooms.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. yes

Searchlights, No. of one, whether fixed or portable. portable, are they of the carbon arc or of the filament type. filament

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 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil. yes

Are motors coupled to oil fuel transfer and 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. -

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule. yes

Lightning Conductors, where required are they fitted as per Rule. -

Ships carrying Oil having a Flash Point of less than 150° F. Have all the special requirements of the Rules for such ships been complied with. yes, are all fuses of an Approved Cartridge Type. yes, make of fuse. Cehess Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships. yes Are all cables lead covered as per Rule. yes

E.S.D., if fitted state maker. M.I.M.C. Co. Ltd. location of transmitter and receiver. in cofferdam between frames 37/38

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and 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. | No. of | MAKER. | RATED AT | | | | TYPE. | PRIME MOVER. |
|------------------------------|--------|----------------------------|--------------------|--------|-------|----------------|--------|----------------------------|
| | | | Kw. per Generator. | Volts. | Amps. | Revs. per Min. | | |
| MAIN | 3 | W.H. Allen Sons & Co. Ltd. | 240 | 450 | 340 | 450 | Diesel | W.H. Allen Sons & Co. Ltd. |
| | | | | | | | | Bedford. |
| EMERGENCY ROTARY TRANSFORMER | | | | | | | | |

GENERATOR CABLES.

| DESCRIPTION. | No. of | Kw. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|---------------------------|--------|-----|---------------------------|--|-----------------------------|-------|---|-------------|----------------------|
| | | | No. in Parallel per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| MAIN GENERATOR | 3 | 240 | 2 | 51/06 | 385 | 400 | 28 | MIC. | copper sheathed |
| EQUALISER | | | | | | | | | |
| EMERGENCY GENERATOR | | | | | | | | | |
| ROTARY TRANSFORMER: MOTOR | | | | | | | | | |
| GENERATOR | | | | | | | | | |

440 V MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.). From main switch board.

| DESCRIPTION. | | | | | | | |
|--|---|---------|------|-----|-----|--------|-----------------|
| P.M.P.01/P.M.P.02 feeder to steering gear | 1 | 7/.064 | 180✓ | 56 | 64 | VC | LC & A. |
| PF.14 to sect. board. T14 | 1 | 19/.052 | 40✓ | 45 | 34 | V.R.I. | LC & A. |
| PM.13 to sect. board T13 | 2 | 19/.083 | 215✓ | 282 | 26 | V.C. | LC & A. |
| PV.V2 to sect. boards V2-V3 | 1 | 19/.083 | 130✓ | 141 | 36 | VC. | LC & A. |
| PA.7 to sect. board T7 | 1 | 19/.052 | 65✓ | 77 | 58 | VC. | LC & A. |
| PM.11 to sect. board T 11 | 1 | 19/.064 | 50✓ | 58 | 15 | V.R.I. | LC & A. |
| PM.01 to cargo oil pump. | 2 | 51/15 | 595✓ | 660 | 15 | MIC. | copper sheathed |
| PG.3/PGG3 to sect. board T 3. | 1 | 19/.052 | 60✓ | 77 | 105 | VC | LC & A. |
| sh. G.P. shore connection | 1 | 51/1 | 250✓ | 260 | 40 | MIC. | copper sheathed |
| PV.V1 to sect. brd.V1 | 1 | 19/.052 | 70✓ | 77 | 108 | VC | LC & A. |
| PG. TR. 1-3 to transformers. | 1 | 52/0145 | 80✓ | 90 | 10 | MIC | copper sheathed |
| TR1 GP from transformers to 115 volt main switchboard. | 1 | 51/06 | 175✓ | 200 | 10 | MIC | copper sheathed |
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29 JAN 1960

115 V. DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.). from main switchboard.

| DESCRIPTION. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|---|---------------------------|--|-----------------------------|-------|---|-------------|----------------------|
| | No. in Parallel per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| P.E.12 to distr. fuse board T12 | 1 | 7/.044 | 20 | 22 | 26 | V.R.I. | LC & A. |
| P.G.10 to distr. fuse board T10 & T7 | 1 | 19/.083 | 115 | 141 | 62 | VC | LC & A. |
| P.E.8 to distr. fuse board T8 & T5 | 1 | 19/.064 | 75 | 100 | 31 | VC. | LC & A. |
| P.E.9 to distr. fuse board T9 & T6 | 1 | 19/.052 | 60 | 77 | 42 | VC. | LC & A. |
| P.E.15 to distr. fuse board T15 | 1 | 7/.036 | 10 | 17 | 29 | V.R.I. | LC & A. |
| P.T.TA. to fender alarm board. | 1 | 7/.029 | 10 | 15 | 18 | V.R.I. | LC & A. |
| 3GTR4/5/6 from 440 Volt sect. brd. T3 to transformers. | 2 | 7/.052 | 60 | 64 | 5 | V.R.I. | LC & A. |
| TR4/5/6 G3 from transformers to 115 Volt. Sect. board T3. | 1 | 19/064 | 130 | 143 | 5 | VC. | LC & A. |
| FROM SECTION BOARDS TO DISTRIBUTION FUSE BOARDS. | | | | | | | |
| 3E2 from 115 V. Sect. brd. T3 to distr. fuse board T2 | 1 | 19/.064 | 50 | 58 | 26 | V.R.I. | LC & A. |
| 3N1 from 115 V. Sect. brd. T3 to distr. fuse board T1 | 1 | 3/.036 | 10 | 10 | 28 | V.R.I. | LC & A. |
| 3.E.4 from 115 V. Sect. brd. T3 to distr. fuse board. T4. | 1 | 7/.064 | 20 | 32 | 70 | V.R.I. | LC & A. |
| 7A8 from 440 V. Sect. brd. T7 to distr. fuse board T8. | 1 | 3/036 | 10 | 10 | 30 | V.R.I. | LC & A. |

MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | No. | B.H.P. | MOTOR CABLES. | | | | | | |
|---|-----|--------|---------------|---------|------|-----|----|--------|---------|
| D1M01 to Emergency M.E. blower | 1 | 70 | 1 | 19/.064 | 88 | 100 | 28 | VC | LC & A. |
| D1M02/03 air compressors | 2 | 80 | 1 | 19/.083 | 100 | 141 | 29 | VC | LC & A. |
| D1M04/05 SW & FW cooling pumps | 2 | 75 | 1 | 19/.064 | 92 | 100 | 15 | VC | LC & A. |
| D1M06/07 Lub. oil pumps | 2 | 85 | 1 | 19/.083 | 106 | 141 | 26 | VC | LC & A. |
| D2M01/02 Lub. oil pump blowers. | 2 | 1.8 | 1 | 3/.036 | 3.8 | 10 | 22 | V.R.I. | LC & A. |
| D2M03/04 Fuel valve cooling pps. | 2 | 1.5 | 1 | 3/.036 | 2.6 | 10 | 17 | V.R.I. | LC & A. |
| D2M06 Fuel transfer pump. | 1 | 25 | 1 | 19/.064 | 35 | 58 | 30 | V.R.I. | LC & A. |
| D2M07 Sea water pp. aux. motor. | 1 | 5.5 | 1 | 3/.036 | 7.1 | 10 | 15 | V.R.I. | LC & A. |
| D2M08 General Service Fire pp. | 1 | 12.5 | 1 | 7/.044 | 16.5 | 22 | 35 | V.R.I. | LC & A. |
| D2M10 Diesel oil transfer pp. | 1 | 1.5 | 1 | 3/.036 | 2.9 | 10 | 12 | V.R.I. | LC & A. |
| 13M01 Exhaust boiler feed pump | 2 | 3 | 1 | 3/.036 | 4.5 | 10 | 8 | V.R.I. | LC & A. |
| 13M04/05 Forced draught fans | 2 | 35 | 1 | 7/.064 | 51 | 56 | 15 | VC. | LC & A. |
| 13M06/07 Induced draught fans. | 2 | 32 | 1 | 7/.064 | 44 | 56 | 15 | VC. | LC & A. |
| 13M08/09 Primary feed pumps | 2 | 2.5 | 1 | 3/.036 | 4 | 10 | 22 | V.R.I. | LC & A. |
| PMP01/02 Steering gear motor. | 2 | 25 | 1 | 7/.064 | 34 | 56 | 64 | VC. | LC & A. |

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.

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.

L'ELECTRO-NAVALE & INDUSTRIELLE S.A.

Electrical Contractors.

Date 25-1-60

COMPASSES.

Have the compasses been adjusted under working conditions. ☒ yes

CHANTIERS NAVALS JON. ROEL & FILS

Société Anonyme

PARIS

Builder's Signature.

Date 25-1-60

F. J. Van Dyck

Have the foregoing descriptions and schedules been verified and found correct. ☒ yes

Is this installation a duplicate of a previous case. ☒ no If so, state name of vessel.

Plans. Are approved plans forwarded herewith. ☒ yes If not, state date of approval.

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith. ☒ yes

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.). The electrical equipment of this vessel has been constructed and installed under the Special Survey of the Society's Surveyors in accordance with the Rules, the Secretary's letters and the approved plans. The materials and workmanship are good. Insulation and other tests required by the Rules have been carried out with satisfactory results. The electrical equipment of this vessel is eligible in my opinion, to be incorporated in the class assigned to the machinery.

Total Capacity of Generators. 720 Kilowatts.

The amount of Fee ... £75 14/6 When applied for, 12-1-1960

Travelling Expenses (if any) £25 10/0 When received, 10

G. Valckeneers.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIDAY - 4 MAR 1960

Assigned



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