

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office **31 DEC 1951**

Date of writing Report 27.12.1951 When handed in at Local Office 19 Port of Stockholm.

No. in Survey held at Norrköping Date, First Survey 17.6 Last Survey 18.10.1951
Book. (No. of Visits 3)

3686 on the m/t "IRISH" Tons { Gross 1113
Net 523

built at Norrköping By whom built A/B Norrköpings Varv & Verks Yard No. 136 When built 1951

owners U.S.S.R. Port belonging to Vladivostok.

Installation fitted by A.E.G., Norrköping When fitted 1951

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

Plans, have they been submitted and approved Yes System of Distribution Two wire Voltage of Lighting 110

Rating 220 Power 220 D.C. or A.C., Lighting D.C. Power D.C. If A.C. state frequency -

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 - Generators, are they compound wound Yes, and level compounded under working conditions Yes

Are the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole Negative

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

under 100 kw. been supplied and the results found as per Rule Yes Position of Generators 1 - 55 kW on stb. side, 1 - 55 kW

1 - 14 kW on port side in E.R., 1 - 6 kW on a platform on Trunk Deck in E.R.

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 In E.R. Forward

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 Sindany on steel front, if of synthetic insulating

material is it an Approved Type -, 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 a triple pole circuit breaker with overload and reverse current

protection

and the switch and fuse gear (or circuit breakers) for each outgoing circuit a double pole circuit breaker and a fuse on each

line.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 4

ammeters 4 voltmeters - synchronising devices. For compound machines in parallel are the ammeters and reverse current

protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided for 220 V

voltmeter calibrated as ohm-meter Preference Tripping, state if provided -, and tested -

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes

Make of fuses A.E.G., are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 275 A - 8 sec., 70 A - 10 sec., and at what current do the reverse current protective

devices operate 36 A 15 A Cables, are they insulated and protected as per Rule Yes,

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 3 V 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 -, galleys -

and laundries - State how the cables are supported or protected All main- and power cables are lead

covered and armoured and were necessary protected by flexible steel pipes, secured by clips. Lighting cables

and accommodations lead covered, secured by clips.

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 Refrigerated chambers, are the cables and fittings as per Rule Yes

Are refrigeration fan motors been constructed under survey - and test certificates supplied -

Are the motors accessible for maintenance at all times -



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule... Yes... Emergency Supply, state position 1 - 6 kW, Diesel Engine driven, 110 V generator on a platform on Trunk deck in Engine Room.

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... 40... Where required to do so does it comply with 1948 International Convention... Yes...

Lighting, is fluorescent lighting fitted... Yes... If so, state nominal lamp voltage... 240... and compartments where lamps are fitted... Engine room, Accommodations...

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

Searchlights, No. of... 1... whether fixed or portable... Fixed... 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... None...

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... None (Steel Mast)

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... A.E.G.... 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... "ATLAS", Bremen... location of transmitter and receiver... in pumproom...

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 | | | | PRIME MOVER. | |
|---------------------------|--------|----------|-------------------|--------|----------|----------------|--------------|--------------------|
| | | | Kw. per Generator | Volts. | Ampères. | Revs. per Min. | TYPE. | MAKER. |
| MAIN ... | 2 | E.S.A.B. | 55 | 230 | 240 | 1000 | Diesel Eng. | Daimler-Benz |
| Harbour Light | 1 | " " | 14 | 230 | 61 | 1150 | " " | "PETER" |
| EMERGENCY ... | 1 | " " | 6 | 115 | 52 | 1400 | " " | Motorwerke-Manheim |
| ROTARY TRANSFORMER | 1 | " " | 10 | 110 | 91 | 2900 | El. motor | E.S.A.B. |

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 Nominal Dia. of Strands Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| MAIN GENERATOR ... | 55 | 1 | 150 | 240 | 325 | 16 | Paper | L.C. armoured | |
| " " EQUALISER ... | 1 | 1 | 90 | - | 145 | 8 | Rubber | L.C. steel wire braided. | |
| " " equaliser | 55 | 1 | 150 | 240 | 325 | 20 | Paper | L.C. armoured | |
| Harbour Light generator | 14 | 1 | 25 | 61 | 63 | 24 | Rubber | L.C. steel wire braided. | |
| " " equaliser | 1 | 1 | 16 | - | 49 | 12 | " | " " " " | |
| EMERGENCY GENERATOR ... | 6 | 1 | 16 | 52 | 49 | 24 | " | " " " " | |
| ROTARY TRANSFORMER: MOTOR | 12 | 1 | 25 | 64 | 63 | 24 | " | " " " " | |
| " " GENERATOR... | 10 | 1 | 50 | 91 | 99 | 24 | " | " " " " | |

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

| DESCRIPTION. | No. of | Kw. | CONDUCTORS. | MAXIMUM CURRENT IN AMPERES. | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|--|--------|-----|---------------------------|-----------------------------|---|-------------|-------------------------|
| | | | No. in Parallel per Pole. | In the Circuit. | Rule. | | |
| From main switchboard 220 V to 110V distribution board in E.R. | 1 | 50 | 97 | 99 | 4 | Rubber | L.C. steel wire braided |
| To distribution board for waterheaters | 1 | 6 | 16 | 29 | 20 | " | " " " " |
| From distribution board 110 V | | | | | | | |
| To section board for navigation lights | 1 | 4 | 2 | 22,5 | 30 | Rubber | L.C. steel wire braided |
| " " " in engine room | 1 | 16 | 45 | 49 | 16 | " | " " " " |
| " " " for accommodations | 1 | 50 | 50 | 99 | 18 | " | " " " " |
| " " " fans | 1 | 6 | 9,5 | 29 | 20 | " | " " " " |

DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.).

| DESCRIPTION. | No. in Parallel per Pole. | Sectional Area or No. and Dia. of Strands Sq. ins. or sq. mm. | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|--|---------------------------|---|-----------------------------|-------|---|-------------|--------------------------|
| | | | In the Circuit. | Rule. | | | |
| From sec. board to Nav. light for Mast | 1 | 1,5 | 0,5 | 9,5 | 90 | Rubber | L.C. steel wire braided. |
| " " " " " Port side | 1 | 1,5 | 0,5 | 9,5 | 5 | " | " " " " |
| " " " " " Stb. " | 1 | 1,5 | 0,5 | 9,5 | 10 | " | " " " " |
| " " " " " Aft | 1 | 1,5 | 0,5 | 9,5 | 45 | " | " " " " |
| Each Mast Light | 1 | 2,5 | 3,0 | 15,5 | 35 | " | " " " " |
| Cables in eng. room | 1 | 1,5 | 3,0 | 9,5 | 12 | " | " " " " |
| " " accommodations | 1 | 1,5 | 3,0 | 9,5 | 14 | " | " " " " |
| Search Light | 1 | 2,5 | 10,0 | 15,5 | 28 | " | L.C. steel wire braided. |
| Echo sounding device | 1 | 2,5 | - | 15,5 | 22 | " | " " " " |
| Wireless | 1 | 4,0 | - | 22,5 | 20 | " | " " " " |
| From sec. board for acc. to: | | | | | | | |
| Fuse board main deck, port side | 1 | 4,0 | 10,0 | 22,5 | 12 | Rubber | L.C. steel wire braided. |
| " " " " stb. " | 1 | 4,0 | 10,0 | 22,5 | 6 | " | " " " " |
| " " " " aft | 1 | 4,0 | 5,0 | 22,5 | 16 | " | " " " " |
| " " trunk " stb. | 1 | 4,0 | 4,0 | 22,5 | 10 | " | " " " " |
| " " " " port | 1 | 4,0 | 8,0 | 22,5 | 10 | " | " " " " |
| " " boat " | 1 | 4,0 | 8,0 | 22,5 | 14 | " | " " " " |
| " " bridge " | 1 | 4,0 | 7,0 | 22,5 | 20 | " | " " " " |
| To fuse board forward | 1 | 6,0 | 10,0 | 29,0 | 62 | " | " " " " |

MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | No. | B.H.P. | CONDUCTORS. | MAXIMUM CURRENT IN AMPERES. | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|--|-----|--------|---------------------------|-----------------------------|---|-------------|------------------------------------|
| | | | No. in Parallel per Pole. | In the Circuit. | Rule. | | |
| 220 V Motors | | | | | | | |
| Lub. oil pump | 1 | 6,0 | 1 | 6,0 | 23,5 | 29 | 9 Rubber L.C. steel wire braided |
| Fuel oil transfer pump | 1 | 1,5 | 1 | 2,5 | 6,5 | 15,5 | 20 " " " " |
| Cargo oil pump | 1 | 50,0 | 1 | 150,0 | 128,0 | 205,0 | 10 " " " " |
| Fire pump | 1 | 12,0 | 1 | 16,0 | 46 | 49,0 | 14 " " " " |
| Bilge pump | 1 | 8,2 | 1 | 10,0 | 32,5 | 38,0 | 24 " " " " |
| Purifier | 2 | 12,0 | 1 | 2,5 | 2,9 | 15,5 | 24 " " " " |
| Aux. air compressor | 1 | 10,0 | 1 | 10,0 | 37,0 | 38,0 | 24 " " " " |
| Oil Burner Donkey Boiler | 2 | 0,6 | 1 | 2,5 | 2,5 | 15,5 | 10 " " " " |
| Steering Engine | 1 | 3,0 | 1 | 6,0 | 12,8 | 29,0 | 52 " " " " |
| Rotary transformer | 1 | 16,3 | 1 | 25,0 | 64,0 | 63,0 | 24 " " " " |
| Vent. Fan Pump room | 1 | 1,1 | 1 | 2,5 | 4,9 | 15,5 | 30 " " " " |
| 110 V | | | | | | | |
| Vent. Fan for Eng. room | 2 | 0,3 | 1 | 2,5 | 2,4 | 15,5 | 20 Rubber L.C. steel wire braided. |
| " " accommodations | 1 | 0,7 | 1 | 4,0 | 4,0 | 22,5 | 24 " " " " |
| Domestic refrigerating mchy. | 1 | 1,6 | 1 | 4,0 | 13,5 | 22,5 | 40 " " " " |
| " boiler oil burner | 2 | 0,2 | 1 | 2,5 | 1,5 | 15,5 | 16 " " " " |
| " hot water pump | 1 | 0,8 | 1 | 2,5 | 2,0 | 15,5 | 14 " " " " |
| Hydrofor pumps | 2 | 1,6 | 1 | 2,5 | 13,5 | 15,5 | 12 " " " " |
| Log rotary transformer | 1 | 0,5 | 1 | 1,5 | - | 9,5 | 5 " " " " |
| Wireless | 1 | 0,7 | 1 | 10,0 | 5,0 | 38 | 20 " " " " |

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.

ELEKTRISKA AKTIEBOLAGET A E G
FILIAL, NORRKÖPING

[Signature]

Electrical Contractors.

Date

12/12-51

COMPASSES.

Have the compasses been adjusted under working conditions

[Signature]

Builder's Signature.

Date

Have the foregoing descriptions and schedules been verified and found correct. Yes.

Is this installation a duplicate of a previous case. Yes. If so, state name of vessel m/t "ISHIM" Norrköping's Yard No. 135.

Plans. Are approved plans forwarded herewith. No. If not, state date of approval. 6.10.50 2.4.51 27.4.51

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 electric equipment of this vessel is installed under Special Survey in accordance with approved plans and Secretary's letters.

The material and workmanship are good.

The installation has been tested under working conditions, insulation resistance measured and found good.

Certificates in respect of generators and motors for essential services are attached herewith.

Noted ABU 21-1-52

Total Capacity of Generators 130 Kilowatts.

The amount of Fee ... Kr. 1.170:-- : When applied for, 27.12.19 51

Travelling Expenses (if any) £ : : When received, 19

[Signature]

Surveyor to Lloyd's Register of Shipping.

TUES. 29 JAN 1952

Committee's Minute

Assigned

[Signature]

ref.

2m.8.50.—Transfer. (MADE AND PRINTED IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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