

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

15 Oct 49

Date of writing Report 8.10.49 19 When handed in at Local Office 19 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 10-6-49 Last Survey 12-10-1949
Reg. Book. (No. of Visits 17)

on the M.V. "STEINGRIM STANGE" Tons { Gross 10099
Net 5895

Built at Sunderland By whom built Sir James Laing & Sons Yard No. 783 When built 1949

Owners M/s A/S Amstein (Leip. Högsk. G.) Port belonging to Oslo

Installation fitted by Sunderland Forge & Engineering Co. Ltd When fitted 1949

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. No Radar Yes

Plans, have they been submitted and approved Yes System of Distribution 2 wire in Voltage of Lighting 110

Heating - Power 110 D.C. or A.C., Lighting DC Power DC 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

if not compound wound state distance between generators - and from switchboard - Are the generators arranged to run

in parallel Yes, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole

Negative 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

Position of Generators Engines room on main deck Starboard

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 adjacent to generators

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 Mica Sundakap 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 2 single pole (one pole for equaliser) air break circuit

breaker with 1/2 & 1/4 current trips

and the switch and fuse gear (or circuit breakers) for each outgoing circuit 2 double pole knife switch & fuses

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 reversed current

protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided E lamps

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

make of fuses "LED" are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 5% and at what current do the reversed current protective devices operate 45A

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes

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 76-lb are the ends of all cables having a sectional

area of 0.01 square inch and above provided with soldering sockets Yes 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 No, if so, are they

adequately protected - Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit -

or of the "HR" type - State how the cables are supported or protected Main feeds LC PB (V.C.) clipped

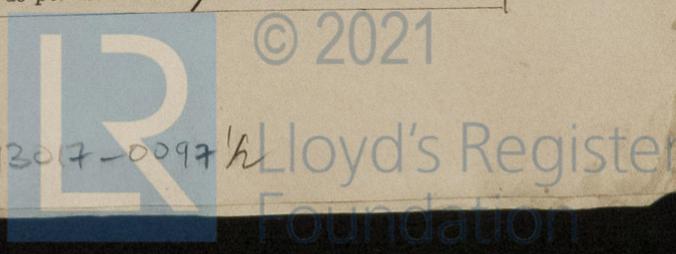
to heavy steel deck through with cover plate fitted, along iron & c/c gangway.

In accommodation LC cables on the surface and protected as required by wood or metal.

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



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule 448 Emergency Supply, state position

Navigation Lamps, are they separately wired 448 controlled by separate double pole switches and fuses 448 Are the switches and fuses in a position accessible only to the officers on watch 448 is an automatic indicator fitted 448 Is an alternative supply provided 448

Secondary Batteries, are they constructed and fitted as per Rule 448 are they adequately ventilated 448 state battery capacity in ampere hours 448

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof 448 Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present 448 if so, how are they protected Wigan Name of the fitting is approved in certificate and where are the controlling switches fitted in afters quadrants Are all fittings suitably ventilated yes

Searchlight Lamps, No. of 1 whether fixed or portable 1 are they of the carbon arc or of the filament type 1

Heating and Cooking, is the general construction as per Rule 448 are the frames effectually earthed 448 are heaters in the accommodation of the convection type 448 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 448 Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing 448 Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule 448

Control Gear and Resistances, are they constructed and fitted as per Rule 448 Lightning Conductors, where required are they fitted as per Rule 448 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 an Approved Cartridge Type yes make of fuse "ZED" 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 448 E.S.D., if fitted state maker Hughes location of transmitter End of Port Chain and receiver End of Star Chain

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. | |
|------------------------------|--------|-----------------|--------------------------|--------|----------|----------------|--------------|-----------------|
| | | | Kilowatts per Generator. | Volts. | Ampères. | Revs. per Min. | TYPE. | MAKER. |
| MAIN | 3 | S-FORGE Co LTD. | 35 | 110 | 318 | 640 | Steam | S-FORGE Co LTD. |
| | 1 | do. | 35 | 110 | 318 | 1000 | Diesel | Russell-Kentway |
| EMERGENCY ROTARY TRANSFORMER | | | | | | | | |

GENERATOR CABLES.

| DESCRIPTION. | KILOWATTS. | 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 | No. 1. 35 | 2 | 19/083 | 318 | 382 | 54 | V.C. | L.C.A.B. |
| " " EQUALISER | No. 2. 35 | 1 | " | 191 | 27 | | " | " |
| " " EQ | No. 3. 35 | 1 | " | 191 | 34 | | " | " |
| " " EQ | No. 4. 35 | 2 | " | 318 | 382 | 85 | " | " |
| EMERGENCY GENERATOR | No. 4. 35 | 3 | " | 318 | 382 | 100 | " | " |
| ROTARY TRANSFORMER MOTOR | EQ | 2 | " | 191 | 50 | | " | " |

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

| DESCRIPTION. | No. in Parallel per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|----------------------------------|---------------------------|--|-----------------|-------|---|-------------|----------------------|
| Sub-Engine Room - Mainship Panel | 2 | 37/072 | 519.51 | 592 | 580 | V.C. | L.C.A.B. |
| Starboard Panel - S. 3. Fuses | 1 | 19/083 | 110 | 191 | 148 | " | " |
| " " " S. 2. Fuses | 1 | 19/083 | 45 | 191 | 132 | " | " |
| Galley & Pantry Section P. S. 4 | 1 | 19/064 | 76 | 87 | 214 | " | " |
| Landay Saloon S. 5 | 1 | 19/064 | 135 | 102 | " | " | " |
| Eng. Room " S. 6 | 1 | 19/064 | 110 | 135 | 100 | " | " |
| " " " S. 7 | 1 | 7/064 | 39 | 75 | 86 | " | " |
| " " " S. 8 | 1 | 7/064 | 42 | 75 | 120 | " | " |

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

| 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. | | | |
| Perp Deck Lighting D.B. 5. Port | 1 | 7/064 | 17.6 | 46 | 66 | V.I.R. | L.C. |
| " " " D.B. 6. Star. | 1 | " | 18.6 | " | 80 | " | " |
| " " " D.B. 7. Star. | 1 | " | 15.6 | " | 32 | " | " |
| Upper Deck Lighting D.B. 9. Star. | 1 | " | 16.9 | " | 15 | " | " |
| " " " D.B. 8. Port | 1 | " | 21.9 | " | 103 | " | " |
| Engine Room Lighting D.B. 10. | 1 | 7/064 | 16 | 31 | 36 | " | " |
| " " " D.B. 11. | 1 | " | 16 | " | 132 | " | " |
| Bridge Rig + Navigation D.B. 1. | 1 | 7/036 | 19.3 | 24 | 64 | " | " |
| Upper Bridge Rig D.B. 2. | 1 | 7/044 | 15.3 | 31 | 64 | " | " |
| Pantry D.B. 3. | 1 | 7/064 | 59 | 75 | 56 | V.C. | " |
| Bridge Rig Rig D.B. 4. | 1 | 7/044 | 27.5 | 31 | 25 | V.I.R. | " |
| Boiler Lighting D.B. | 1 | 7/064 | 17.4 | 46 | 25 | " | " |
| Navigation Alternative from D.I. | 1 | 1/064 | 5 | 5 | 16 | " | " |
| " " " from Main Deck | 1 | 1/064 | - | 5 | 76 | " | " |
| W.L. Supply | 1 | 7/064 | 10 | 75 | 320 | V.C. | " |
| Radar | 1 | " | 40 | 75 | 76 | " | " |
| Auto Bombing Supply | 1 | 4/064 | 5 | 5 | 80 | V.I.R. | " |
| 440 Supply | 1 | 7/029 | 10 | 15 | 28 | " | " |
| Emergency Control (Wiring only) | 1 | 37/072 | - | 246 | 1040 | V.C. | L.C.A.B. |

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. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| Engine Room Deck Fans. | 4 | 2 | 1 | 7/036 | 18 | 24 | 2/150 | V.I.R. | L.C.A.B. |
| Perp Deck Permeable | 2 | 4.5 | 1 | 7/064 | 38 | 75 | 2/124 | V.C. | " |
| Galley Exhaust Fan | 1 | 0.25 | 1 | 3/029 | 3 | 10 | 40 | V.I.R. | " |
| Jumping Gear Motor | 1 | 10 | 1 | 19/083 | 80 | 87 | 120 | V.C. | " |
| Trunking Pump | 1 | 1.5 | 1 | 7/036 | 15 | 24 | 100 | V.I.R. | " |
| Grand Motor | 1 | 3 | 1 | 7/064 | 26 | 46 | 94 | " | " |
| Workshop Motor | 1 | 2 | 1 | 7/036 | 18 | 24 | 138 | " | " |
| Oil Purifier | 3 | 3 | 1 | 7/064 | 26 | 46 | 52 | " | " |
| W.L. & P.W. Pump Motor | 3 | 5 | 1 | 7/036 | 57 | 24 | 30 | " | " |
| Refrigerating Motor | 1 | 5 | 1 | 7/064 | 42 | 75 | 24 | V.C. | " |
| Mainship Permeable | 1 | 4.25 | 1 | 7/064 | 38.6 | 75 | 102 | " | " |

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.

Sunderland Forge & Eng Co Ltd.

Electrical Contractors.

Date 10. 10. 1949

T. S. Gurney

COMPASSES.

Have the compasses been adjusted under working conditions.

SIR JAMES LAING & SONS LIMITED

Managing Director

Builder's Signature.

Date 13. 10. 49

Have the foregoing descriptions and schedules been verified and found correct. 4/46

Is this installation a duplicate of a previous case. 4/46 If so, state name of vessel. M.T. "High Road"

Plans. Are approved plans forwarded herewith. 4/46 If not, state date of approval.

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith. 4/46

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 installed under special survey in accordance with the approved plans and the "Rules for Electrical Equipment". The materials and workmanship are good: on completion, satisfactory tests of the equipment were witnessed and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a classed vessel.

Noted and 7/11/49

Total Capacity of Generators (4 x 35) 140 Kilowatts.

The amount of Fee ... £61. 0. 0

When applied for,

OCT 14 1949

When received,

19

Travelling Expenses (if any) £

Surveyor to Lloyd's Register of Shipping.

S. D. Brand

FRI, 11 NOV 1949

Committee's Minute

Assigned

See F.E. mch. rpt.

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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