

2 MAY 1960

No. 9365

## REPORT ON ELECTRIC PROPELLING MACHINERY

62

Received at London Office

of writing Report 23. 11. 19 59 When handed in at Local Office 19 Port of H A M B U R G  
in Survey held at H a m b u r g Date, First Survey 12th June, 1959 Last Survey 21st January, 1960  
Book No. of Visits 7  
ins Single { Screw vessel " L E N I N G R A D " Tons { Gross -  
on Twin { Net -  
Triple {  
Quadruple {  
at Helsingfors By whom built Wärtsilä-koncernen A/B Yard No. 366 When built -  
By whom made Sandvikens Skeppsdocka  
ion Switchboard Generator Nos. -  
trical Machines made at Hamburg By whom made Siemens-Schuckertwerke Motor Nos. - When made -  
ft Horse Power at Full Power - Total Capacity of Generators - kilowatts  
achinery Numeral as per Rule - Owners - Port belonging to -  
de for which Vessel is intended Ice Breaker

NS.— Have plans of the Machines, Control Gear, Cables and Circuits been submitted and approved yes

AM ENGINES.— Type of Engine No. of Engines R.P.M. Is a Governor fitted Is the speed  
ation as per Rule when load is thrown off Is an Emergency Governor fitted Is it arranged for hand tripping Does it trip the throttle  
e If exhaust steam is admitted, is an automatic shut-off fitted Is provision made for bled steam and is a non-return or positive  
t-off valve fitted Lubricating Oil.—State means provided for emergency supply  
he emergency supply sufficient to maintain lubrication as per Rule Mechanical Balance.—Are the Engines and Generators balanced so as not to cause  
reciable vibration

ENGINES.— Type of Engines R.P.M. Is a Governor fitted Is the speed variation as  
Rule when load is thrown off Is an Emergency Governor fitted Does it operate as per Rule

ERATORS.— Direct or Alternating Current No. of Generators If A.C. state frequency at full load  
per Generator Volts per Generator Amps. per Generator Have certificates of works tests been  
plied and the results found as per Rule Ventilation.—State how arranged (open or closed system)  
Are ventilating arrangements satisfactory Heating when Idle.—What provision is made  
Facilities for Inspection and Repair.—Are these as per Rule

wear-down gauges supplied Bilges.—Are the arrangements to prevent accumulation of bilge-water under the machines satisfactory

TORS.— S.H.P. per Motor at full power No. of Motors Single or double unit Volts per Motor  
ps. per Motor Have certificates of works tests been supplied and the results found as per Rule A.C. Motors.—Is provision made for  
chining the slip rings Do the Motors remain in synchronism under all normal conditions of running D.C. Motors.—If the system permits  
speeding at light loads are overspeed protection devices fitted

ITATION.— Is power for excitation taken from the ship's Auxiliary Generators - If so, state voltage - and excitation amperes at full  
er - kilowatts for excitation - State excitation arrangements for Propulsion Generators 5 - Motor/Generator Sets. One for each  
ulsion circuit (3) and one standby for port and starbd. circuits and one standby for middle propulsion circuit  
Propelling Motors see generators Is an alternative means of excitation provided yes  
he certificates of works tests been supplied - and found as per Rule -

TROL.— Position of Main Control Panel -  
s it comply with the requirements regarding position - , grouping of controls yes , instruments yes , insulating materials (state type  
l) dead front construction , spacing and shielding of live parts yes , accessibility yes , position of fuses yes ,  
ing of screws and nuts yes , labelling yes , fuses for voltmeters, pilot lamps, etc. yes , provision for manual operation of contactors, etc.  
te method employed) Air operated circuit breakers which can also be operated with hand wheels. Selection of  
pulsion machines through hand operated change-over knife type switches.  
hing of instrument cases Bakelite , provision of renewable tips on switches subject to arcing yes , capability of withstanding  
k and inclination yes , operation with high and low voltage yes , rustproofing of parts. Overload and Short Circuit Protection.—State means  
ided

See remarks 1

what load is it set to operate to be tested and Has it been tripped by hand when running at full power and found satisfactory -  
fuses of an approved type yes set on board.

h Detection.—Is the main circuit provided with means for detecting earths yes Are aural and visual alarms fitted yes Is main power interrupted  
n earth fault no If a limiting resistance is in the earth detecting circuit what is the ohmic value see remarks 2 What earth leakage current is necessary  
perate the device to be tested and set on board If a switch is used to disconnect the aural signal does it automatically give visual indication yes Are the excitation circuits

ided with means for earth detection yes Mechanical Protection.—Are circuits above 250 volts D.C. or 150 volts A.C. to earth protected as per Rule yes

ge or Deck Control.—Is bridge control provided yes If so, from how many stations - can it be operated freely without producing  
ents or loads in excess of the working capacity of the plant - and without reference to electrical instruments - Is an emergency control provided  
switchboard switchboard

the engine room yes and can the transfer to this control be made quickly in the engine room yes Can the emergency control be rendered mechanically  
pendent of the deck control yes Instruments and Gauges.—State Instruments provided for each Generator Ammeter, voltmeter and  
hometer.

for each Motor Power instruments and ammeter (E.R. control pulpit) Is an Insulation Tester provided -

harge Protection.—Are all shunt field circuits protected as per Rule yes D.C. Systems.—If the Generators are connected in series state means provided  
event reversal of direction of rotation of the Prime Movers Field circuits disconnected through relays operated by generator  
ometer contacts. Two settings provided 1) 240 rpm/120secs. time lag. 2) 200 rpm instantaneous  
the Propulsion Generators also used alternatively for other purposes - If so, is provision made for overload protection, voltage adjustment, etc. -

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Reversing Switches.—If any are provided are they interlocked as per Rule ☒ yes ☐ no Resistances.—Are resistances for synchronous motor fields insulated as per Rule ☐ Are machines with enclosed ventilating system, etc., fitted with temperature alarm ☐

CONDUCTORS & CABLES.—Are all essential Conductors stranded as per Rule ☐ Are the ends of Paper and Varnished Cambric Insulated Cables sealed ☐ Are all Cables carrying A.C. constructed and installed as per Rule ☐ Have all Main Cables been tested by the Surveyors at the works ☐

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines ☐ If so, have full particulars of rating been submitted and approved ☐ Have they been tested under working conditions and do they give the required number of starts ☐ Are they installed as per Rule ☐ Are the charging arrangements satisfactory ☐

SPARE GEAR.—If engaged on open sea service has a list of spare gear been submitted and approved ☐ Is a list of the articles supplied attached to this report ☐ Are they stored as per Rule ☐

### ELECTRIC PROPULSION EQUIPMENT CONDUCTORS

DESCRIPTION	CONDUCTORS		MAXIMUM CURRENT—AMPERES*		Rule	MAXIMUM VOLTAGE	INSULATED WITH	PROTECTIVE COVER
	No. in parallel per Pole	Sectional Area sq. in. or sq. mm.	In Circuit					
			When Running	When Manœuvring				
MAIN GENERATORS								
GENERATOR FIELDS								
MAIN MOTORS								
MOTOR FIELDS								
CONTROL CIRCUITS								
OTHER CIRCUITS:—								

\*For field circuits the "Hot" and "Cold" value should be given.

SIEMENS-SCHUCKERTWERKE  
AGT-INGENIEURGESSELLSCHAFT

The foregoing is a correct description.

Electrical Engineers.

Date

26. Nov. 1962

COMPASSES.—Are Single-Conductor circuits carrying direct current arranged with lead and return Conductors fitted as close to one another as possible ☐

Have the Compasses been adjusted under working conditions ☐

Builders' Signature.

Date

Is this ~~machinery~~ switchboard duplicate of a previous case ☐ yes ☐ no If so, state name of vessel "Moscow" (Yard No. 365)

GENERAL REMARKS.—(State quality of workmanship, opinion on class, etc.)

#### 1) Overload and Short Circuit Protection

Circuit Protection:—3 relays in series are provided for each circuit.

a) Alarm at 120% F.L. amps.

b) Overcurrent protection at 150% F.L. amps/9 mins. time delay.

c) Instantaneous short circuit protection at 3 x overcurrent setting.

(b) and (c) trip generators excitation supply contactor.

#### Generator Protection

Short circuit protection relay provided for each generator which operates at 3 x overcurrent setting/secs. time delay. Relay trips generator excitation contactor, which in turn trips generator circuit.

#### 2) Earth Detection Systems:—

1. Main Propulsion Circuits (3):—Each circuit (3) provided with earth indicating control equipment with 220 volts A.C. Gives alarm and indication in Engine Room and indication only at all bridge control stations. Earth control circuit fitted with 2 - 2000 ohm resistances in series with one another and parallel to earth connection. 10 microfarad condenser in series with 220 volts A.C. supply also fitted.

2. Propulsion Excitation Circuits:—One ohmmeter with selector switch.

3. Exciters Excitation Circuits:—Earth lamps.

Total capacity of generators for propulsion purposes  kilowatts.

The amount of Fee  See Rpt. 10

Travelling Expenses (if any)

When applied for,

19

When received,

19

W. W. W. 16  
Surveyor to Lloyd's Register of Shipping

Date

Committee's Minute

FRIDAY 16 FEB 1962

Assigned

Sin 148 8382



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Foundation