

**SUPPLEMENT No. 230**

**List of maintenance and repair works on MV ESTONIA  
April 1993 - August 1994.**

**Nordström & Thulin AB**

**Stockholm**

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month AUG. Year 1994

## MAIN ENGINE

1. ME2 -overhaul of cyl.7, new piston rings, new O-rings, over-  
cyl.cover.Changed fuel injector valve of cyl.3.
2. ME3 -change of exhaust valves cyl.2 and .6.
3. Overhauling of spare ME cyl.cover.
4. Cleaning,grinding of spare ME exhaust valves.

## AUXILIARE ENGINE

- 1.AE1 -measure and record crankweb deflections,checking and  
adjusting clearances of inl.and exh.valves.
- 2.AE3 -change of fuel injector valves,oil in turbocharger,  
rocker arm bearing and pin,checking and adjusting  
clearances of inl.and exh.valves.
- 3.AE4 -measure and record crankweb deflections

## PUMPS

- 1.AE seawater pump nr.2 -changed shaft seal.
- 2.Repairing of AE seawater pump nr.1 -changed coupling,  
shaft seal,impeller,rings,bearing.
- 3.Repairing of gear hydrofor pump nr.2.

## COMPRESSORS

- 1.Air compr.1 -cleaned and changed 1.and 2-stage blow-  
through valves.
- 2.Air compr.2 -changed non-return valve,crankbearings,  
cleaned and repaired 1.and 2-stage blow-  
valves.

## PIPE SYSTEM

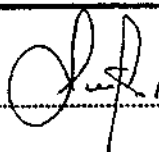
- 1.Repairing of pipelines in ME room and AE room.
- 2.Change of sewage system pipelines in sewage room.
- 3.Repairing of vater system pipes for oil purifier.

- 1.Cleaning oil purifiers nr.2 and 3.Changed paring disk  
in oil purif.nr.3.
- 2.Change of exhaust gas boilers nr.1,2 and 3 flaps air  
cylinders seals.
- 3.Checking and adjusting of cardeck platform nr.3.

## MISCELLANEOUS

- 1.Cleaning of all bilges in eng.rooms.
- 2.Washing of AE room.

L. LEICER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month AUG. Year 1994

## AIRCONDITIONING

- 1.Repairing of chilled liquid aut. valves in AC-5,AC-14,AC-17.
- 2.Repairing of thermostats and air mixers in cabins -26 pcs.
- 3.Cleaning up AC rooms on deck 7.

## ACCOMMODATIONFANS

- 1.Change and washing air filters.
- 2.Change of belts E-28.
- 3.Service works of AC fans.

## KITCHEN

- 1.Repairing of refr.equipment in kitchen.
- 2.Repairing of dish washing machine.
- 3.Cleaning of clogged scuppers in kitchen.

## HOTEL

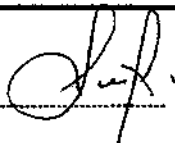
- 1.Repairing of doors,beds,locks in pass.cabins.
- 2.Repairing of floor in "Night Club".
- 3.Repairing of pass.cabins water mixers.
- 4.Service and repairing works of refr.equipment in "Seaside", "Taxfree",Sauna,"Poseidon" and "Night Club".

## SEWAGESYSTEM

- 1.Cleaning of clogged sewage pipes.
- 2.Repairing and change of Evac-equipment.
- 3.Repairing of pipes in vacuum system.

## MISCELLANEOUS

L. LEIGER  
CHIEF ENGINEER



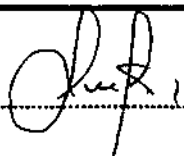
# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month AUG Year 1994

## ELECTRICAL PART.

- 1.Replacement of el.motor bearings - thermal oil pump,compressor of prov.refr.plant,AE nozzle cooling pumps,trim pump.
- 2.Repairing of smoke detectors.
- 3.Repairing of bow thruster nr.1 aut.swicth:
- 4.Drawing of cable on deck 8 in dayroom.
- 5.Cleaning of bow thrusters nr.1,2 contactors contacts.
- 6.Replacement of cables in control box elevator nr.1.
- 7.Checking & cleaning connection terminals,cables of telephone input lines.
- 8.Drawing of cable for central office computer.
- 9.Service works of ventilation boards K3a and K3b,boiler board K5.
- 10.Drawing of cable to boatswain workshop.
- 11.Cleaning and checking of copy machine "Canon".
- 12.Replacement of rudder angle indicator.
- 13.Replacement of temp.sensor of exh.gas boiler AE nr.2.
- 14.Service and adjusting of ME nr.1,2,3,4 "Graviners".
- 15.Repairing of AE nr.1 lub.oil level sensor.
- 16.Dismantling for painting,installing painted overboard searchlights.
- 17.Cleaning of rudder machines contactors contacts.
- 18.Repairing of washing machine in sauna.
- 19.Repairing of elevators nr.1,2,3,4 (end switches,locks etc).
- 20.Repairing of frying pan in galley.
- 21.Repairing of coffee machines in mess,in "Baltic Bar".
- 22.Repairing of washing machine nr.2 on deck 7.
- 23.Repairing of heating table in galley.
- 24.Repairing of meat slicing machine.
- 25.Repairing of ice generator in "Night Club".
- 26.Replacement of lamps and tubes in accodation.

L. LEIGER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 07. Year 1994

## MAIN ENGINE

1. Overhaul of cyl. 5 ME4. New piston rings new O-rings, overhauled cover.
2. Change of exhaust valves on cyl. 5 & 8 ME2.
3. Overhauling of spare ME cyl. cover.
4. Cleaning and montage of spare exhaust gas turbine for ME.

## AUXILIARE ENGINE

1. Cleaning of oil coolers of AE 3 & 4.
2. Change of oil in turbochargers of AE 1 & 4.
3. Change of oil filter cartridges, cleaning of centrifuges on AE 1&3

## PUMPS

1. Repairing of dirty water tanks pump.

## COMPRESSORS

1. Repairing of compressor No 2 - change of connecting rods, cylinders, piston rings, bearings.

## PIPE SYSTEM

1. Repairing of pipelines in aux. eng. room, separ. room.

1. Making container for oily rags.
2. Repairing of ME autom. oil filters. Change of seals.
3. Inspection of main shaft bearing No3 Ps. Cleaning of cooling system, installation of ventilations pipe.
4. Change of seals on ramps hydr. oil system.

## MISCELLANEOUS

1. Cleaning of bilges in all engine rooms.
2. Painting works in engine rooms.
3. Inspection of draft stops on decks No 4, 5, 6, 7, installation new draft stops.
4. Repairing of spare fuel injector valves for ME.

HARLI MOOSAAR *Moosca*  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 07 Year 1994

## AIRCONDITIONING

1. Inspection of compressor No 2 for AC. Elimination of failures.
2. Repairing and adjusting AC for navig. bridge.
3. Cleaning of ventilation channels.
4. Repairing of room thermostates.

## ACCOMMODATIONFANS

1. Change of AC filters, washing of filters.
2. Change of fans belts, adjusting of belts.
3. Greasing of fan bearings.

## KITCHEN

1. Repairing of kitchen refrigerator.
2. Repairing of paper press, change of belts.
3. Cleaning of clogged scuppers in kitchen.

## HOTEL

1. Repairing of doors, locks, beds, ceilings in pass. cabins.
2. Repairing of coffee maker in "Poseidon", "Baltic Bar".
3. Repairing of dish washing machine in rest.
4. Rebuilding of beer cooling system in "Night Club"
5. Repairing of pass. cabins water mixers.

## SEWAGESYSTEM

1. Inspections and repairing of sewage plants pumps and compressors.
2. Cleaning of clogged sewage pipes.
3. Repairing and change of EVAC-equipment.
4. Adjustment of chlorine dosators in sewage plants.

1. Installation works for new carbidge container.
2. Repairing of fresh and waste water pipelines.
3. Change of water in swimming pool.
- 4.

## MISCELLANEOUS

HARLI MUUSAAR



CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 07 Year 1994

## JOBS MADE IN JULY (ELECTRICAL PART)

1. Replacement of CPP level pump StBd bearings.
2. Adjusting, correctly installing of shaft bearings temperature sensors.
3. Replacement of oil prelubrication pump on aux. engine N3, replacement of bearings.
4. Replacement "fire" in exhaust boiler N2 temperature sensor.
5. Replacement of faulty autom. fuse on emergency power.
6. Installing of lamp under the pool.
7. Making of cover for code lock back / outside
8. Harrelizing with dismantling of StBd in fly. searchlight
9. Cable drawings on bridge (shifting of now searchlight and steering gear brackets), installing of extra StBd & 20 searchlights switches, reset pushbutton.
10. Installing of pre-lub oil pressure on aux. eng. aux.
11. Repairing of coffee machine in mess.
12. Repairing of cheese cutting machine in cold galley
13. Repairing of engine room ventilation board (replacement of contactor coils, burned detail).
14. Tube of installing of new garbage container
15. Repairing of emergency lighting in corridor
16. Repairing of control panel of passenger water supply
17. Repairing of boiler room high leg.
18. Restoration of welding sockets in stabilizer room
19. Repairing of control circuit of heat alarm N3.
20. Fleeing, washing of steam hydraulic boards
21. Checking of cooling circuits of generator
22. Replacement of galley refrigerator defrosting panel
23. Cable drawing & repairing for wireless telephony
24. Checking of steam by functions of boiler circulating pumps, replacement of line relays
25. Cleaning of electrical cables of cables control level in bridge
26. Repairing of coffee machine N3.
27. Repairing of StBd N3 heated in boiler room manual gas temperature
28. Sweeping, cleaning, washing of stabilizing shaft in galley
29. Drawing of data cable in waterline
30. Dressing of loose wire harness bearings
31. Dressing of bearings of electric hoist
32. Repairing of smoke detector
33. Repairing of defrosting machine in mess
34. Checking, adjusting of coffee machine temperature
35. Cable drawing, installation of 4. equipment in mess office
36. Repairing of lighting equipment in mess galley and kitchen
37. Checking, repairing of life saving equipment
38. Repairing of door cable in mess
39. Checking of cable connection of computers, switching of the computer in factory off from the ship's main and switching on to UPS mains.
40. Repairing of over time on 4. area cable.

HARLI HILDSAAR  
CHIEF ENGINEER

*Hiltsaar*

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 07 Year 1994

WORKS MADE IN JULY (MS ESTONIA)

41. Dismantling for painting installing of painted overboard searchlights.
42. Maintenance, cleaning of hand-driers.
43. Checking, testing of cardack tractor el. equipment.
44. Repairing of fore mooring winches board.
45. Repairing of aft. mooring winch separator.
46. Replacement of turning part of anemometer.
47. Repairing of cutting machine "Berkol" in cold gallery.
48. Repairing of opening valve of Fossison in 10" machine.
49. Checking of refrigerator in 31a Cante.
50. Repairing of bilge valve N 17 position in cabin.
51. Replacement of safety lock magnet of lift N 1.
52. Drawing of feet cable for 10" in NK 10.4 position in cabin.
53. Planned maintenance according to order.

HARLI MOOSAAR *Moosaar*  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JUNE Year 1997

## MAIN ENGINE

1. Change of fuel injection valves on ME4.
2. Cleaning of water cooler ME1 change of defective seals.
3. Change of oil filters cartridges on ME 2 & 3. Cleaning of elements
4. Change of exhaust gases temperature sensors cyl.1 & 2 ME1.
5. Elimination of control air leakages in ME 3 & 4 control panels.

## AUXILIARE ENGINE

1. Change of fuel injection valves on AE2.
2. Change of oil filters on AE1 & AE4.

## PUMPS

1. Repairing of dirty water tank No 12 pump.
2. Change of shaft seal on AE1 pre-lubricating pump.
3. Change of bearings and seals on fuel oil booster pump for AE.

## COMPRESSORS

1. Change of oil in compressor No 3, test of safety systems.
2. Change of oil and oil filters in working air compressor.

## PIPE SYSTEM

1. Change of fire system pipelines on deck No 7.
2. Cleaning of cooling water system for main shaft bearings.
3. Repairing of ME2 sea cooling water pipe.
4. Repairing of bilge water pipe in Ka Me Wa -room.

1. Survey of Ps main shaft bearing No3.
2. Cleaning of lub oil and fuel oil separators.
3. Repairing of water-tight door No 12. Change of rolls liner.
4. Cleaning of thermal oil boiler No 2.
5. Repairing of door of elevator No1.

## MISCELLANEOUS

1. Cleaning bilges in all engine rooms.
2. Painting of floor plates in engine rooms.
3. Painting of ME exhaust gas collectors.

HARLI MOOSAAR *Lausmaa*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JUNE Year 1994

## AIRCONDITIONING

- 1.Repairing of thermostates and air mixers in 27 pass.cabines.
- 2.Change of thermostatin cabine No 1046.
- 3.Cleaning of air conditioning agregates VSM-57 condensator, installed new zinc protectors.Pressure test of oil system.
- 4.Repairing of chilled liquid autom.valve in AC 13 & 14.

## ACCOMMODATIONFANS

- 1.Change of filters in all AC .Washing the filtres.
- 2.Greasing and test of all fire dampers.
- 3.Cleaqrning of condensator of eng.control room AC.
- 4.In 4.deck WC installed ventilation valve.

## KITCHEN

- 1.Repairing of refrigerator in cold kitchen.
- 2.Repairing of refrigerators door in hot kitchen.
- 3.Change of kitchens paper press belts.Repairing of press.
- 4.Repairing of chees cutter, and dish washing machine.

## HOTEL

- 1.Repairing of "A La Carte's" juice chiller.
- 2.Rebuilding of beer chiller system in "Night Club"
- 3.Maintenance of ice generators in "Baltic Bar" and Night Club"
- 4.Repairing of coffee maker in "Baltic Bar".

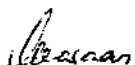
## SEWAGESYSTEM

- 1.Repairing of vaacuum pump of sewage plant No 2.
- 2.Chemical cleaning of sewage system.
- 3.Cleaning of clogged pipes.
- 4.Change and repairing of EVAC equipment.

- 1.Repairing of garbage container.
- 2.Repairing of washing machine for crew.
- 3.Repairing of coffee maker in mess-room.
- 4.Cleaning of clogged scuppers on deck No 1 & 6.

## MISCELLANEOUS

HARLI MOOSAAR



CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JUNE Year 1994

## JOBS MADE IN JUNE ( ELECTRICAL PART )

1. Repairing, drying of lifeboat N1 winch limit switch.
2. Drawing of cable for separate socket for MW oven in galley.
3. Cleaning, service of ME & emerg. light accumulator batteries.
4. Cable drawing in A'la Carte for new equipment.
5. Replacement of bearings on luboil purifier N1 el. motor.
6. Repairing of lift N1 (inner door contacts).
7. Adjusting of hydraulic door deck 5 StBd sensor.
8. Drawing of phone cable on deck 8.
9. Replacement, repairing, replacement of aux.eng.4 prelub. pump.
10. Repairing of Coffee machine lock in Poseidon.
11. Painting of bow hydraulic and ventilation boards.
12. Replacement of CPU on fin system LCU StBd.
13. Replacement of aux. engines 1,2,4 prelub. pump motors.
14. Checking of Ps intermediate shaft bearing N3 temperature sensor, adjusting of measuring circuit.
15. Repairing of coffee machines in mess, Baltic bar, Poseidon.
16. Replacement of sauna heating range, contactor, cable.
17. Repairing of carbage container.
18. Replacement of contactor coil, limit switch on boat winch N2.
19. Replacement of overcurrent relais of boiler, supply fan N 1,2.
20. Repairing of elevator N 1.
21. Checking, adjusting of fireproof doors indication.
22. Checking, replasement of faulty sensors of gas detection.
23. Repairing of frying pan in galley.
24. Repairing of lighting in cardeck.
25. Adjusting of bilge level sensors.
26. Cleaning, greasing of StB gyrorepeater on bridge.
27. Replacement of "fire in exhaust boiler" N2,3 sensors.
28. Replacement of CPP level pump bearings StB.
29. Cable drawing on bridge, reinstalling of steering gear, bow search light joysticks and switch, installing of extra switches.
30. Repairing of cheese cutting machine in galley.
31. Repairing of hair dryer in family sauna.
32. Replacement of aux. eng. prelub.oil pressostats and cables.
33. Replacement of shaft turning devices control cables coatings.

HARLI MOOSAAR *Moo Saar*  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

A-2/

WORKS MS ESTONIA Month 05 Year 1994

<b>MAIN ENGINE</b>
1. Inspection of main bearing No 3 ME2. 2. Change of exhaust gas turbine on ME1. 3. Change of high pressure fuel oil pump cyl. No5 ME1. 4. Change of fuel pump non return valve on cyl1 ME3, cyl17 ME4. 5. Change of seal rings on ME crankcase safety valves.
<b>AUXILIARE ENGINE</b>
1. Change of cylinder covers on AE3. 2. Overhauling AE spare cyl. covers. 3. Cleaning of AE4 turbine, change of bearings. 4. Change of fuel injector valves on AE4. 5. Cleaning of oil cooler and thermostate on AE1.
<b>PUMPS</b>
<b>COMPRESSORS</b>
1. Change of oil in compressors No 1 & 2. Safety test.
<b>PIPE SYSTEM</b>
1. Repairing of sea water and fresh water cooling systems for main and aux engines, boilers. 2. Repairing of waste water system in separ. room. 3. Elimination of leakage in thermal oil system in sewage-room.
1. Repairing of cargo lift door on car-deck. 2. Mounting pipes for car-deck signalisation cables. 3. Change of vertical spindle bearings of separators No 1 & 2. 4. Change of bearing and seals on lift No4 gear. 5. Cleaning and painting of sea water strainers in eng. rooms.
<b>MISCELLANEOUS</b>
1. Washing and painting in engine rooms, cleaning bilges. 2. Cleaning of thermal oil boiler No1. 3. Washing of exhaust gas boilers.

HARLI MOOSAAR  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 05 Year 1994

## AIRCONDITIONING

1. Change of thermostates in cabins No 7015, 4330, 7001, 6032, 756, 5227, 1047.
2. Repairing of cabine thermostates and air mixers in cabins No 829, 831, 1010, 1063, 1077, 1118, 4106, 4416, 4420, 5129, 6317, 7001, 6329, 1035, 1037, 1006, 6335, 1009, 1025, 1027, 1030, 1049, 1050.

## ACCOMMODATIONFANS

1. Change of AC filtres, washing filtres.
2. Cleaning up the AC-rooms.
3. Change of belts in AC-3
4. Repairing of thermostate-valve in AC-6 & 17.

## KITCHEN

1. Repairing of refrigerators door in cold kitchen.
2. Service works on hot kitchen refrigerators.
3. Repairing of shells in kitchen.
4. Repairing of slicing machine and paper-press.

## HOTEL

1. Repairing of hot water pipelines and water armature.
2. Repairing of cabine refrigerators.

## SEWAGESYSTEM

1. Emptying and cleaning of sewage plant No2.
2. Repairing of compressor on sewage plant No1.
3. Repairing and adjusting of chlorine dosators.
4. Repairing of ejector pump No 4 on plant No 2.
5. Repairing of pipes in vacuum system.

1. Repairing of hot water circulation pump.
2. Cleaning of grease tank in grey water system.
3. Repairing of 2 grey water pumps.
4. Repairing of ice generator in "Baltic Bar".

## MISCELLANEOUS

1. Service works on provision plant refrigerator equipment .

HARLI MOOSAAR *Moosaa*  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 05 Year 1994

## JOBS MADE IN MAY ( ELECTRICAL PART )

1. Cleaning, painting of bow hydraulik station board.
2. Restauration of gyro repeater on bridge
3. Replacement of RPM relais of ME 2 in control panel.
4. Replacement and repairing of printed circuit H8R7 in ME safety system.
5. Replacement of lower bearing cover and bearings of hot water circulating pump.
6. Cable drawing for 3 advertising lamps in pub and night club.
7. Repairing of control pushbuttons of life boats NN 1,2,3.
8. Repairing, adjusting of bilge water valve of Ka-Me-Wa room.
9. Replacement of fire detector in cardeck.
10. Repairing of limit switches of life boats NN 3,5.
11. Repairing of minus pole switches of boats NNS,5,9.
12. Replacement of separator room supply fan 1 contactor coil.
13. Installing of switch for welding socket in fore vent. board.
14. Replacement of Graywater pump N 1,2 bearings.
15. Replacement of ER-30 bearings.
16. Replacement of Seawater pump AUX.EN. N1 bearings.
17. Replacement of Flushwater pump SEWAGE PLANT N2 bearings.
18. Repairing of lift N1 safety lock contacts.
19. Replacement of ER-41 contactor coil.
20. Repairing of mess dishwashing machine thermostat.
21. Repairing of STL BCU-card, replacement of sensors.
22. Replacement of swimming pool light.
23. Repairing of paper press in kitchen.
24. Repairing of cardeck supply fan N 14.
25. Drawing of cable in "Balticbar".
26. Cleaning of coffee machine in mess.
27. Checking and replacement of AVACO system sensors.
28. Adjusting of lift N4 brakes.
29. Repairing of engine room lighting equipment.
30. Repairing of lift NN3,4 signal card.
32. Making of EXH.FAN CRANK alarm.
33. Replacement of "fire in exhaust gas boiler" aux.eng. N3 sensor.
34. Cable drawing, installing of sensor, indication lamps of board cover position.
35. Replacement of shaft turning device control cables covers.
36. Replacement of fuel oil separator 1 el.motor bearings.
37. Replacement of "oil pressure before turbine" transmitter.
38. Repairing of hydraulic elevator in store.

HARLI MOOSAAR *Moosaar*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 04 Year 1994

## MAIN ENGINE

1. Change of cylinder cover No 1 ME 3.
2. Change of starting air distributor shaft and bearings on ME 4.
3. Change of high pressure fuel oil pump cyl. 6 ME 1.
4. Change of fuel injector valves No 1-8 ME 3.
5. Elimination of control air leakages on ME 3 & 4.

## AUXILIARE ENGINE

1. Overhaul of AE 1: installed overhauled cyl. covers, overhauled pistons, new piston rings, overhauled connecting rods, new big end bearings, change of all fuel injector valves, change of lubricating oil.
2. Change of low pressure fuel oil pump on AE 2.

## PUMPS

1. Repairing of ME Ps cooling water double pump No 2 : change of shaft and bearing.

## COMPRESSORS

## PIPE SYSTEM

1. Repairing of gray water pipelines on car deck.
2. Repairing of hot water and cold water pipelines on car deck.
3. Repairing of trim pump suction pipe.

1. Washing of exhaust gas boilers ME and AE.
2. Testing and greasing of elevators No 1, 2, 3, 4.
3. Change of breakers shoes on elevator No 4, adjusting.

## MISCELLANEOUS

1. Cleaning and painting the weldings in dry tank No 16A St. B & Ps.
2. Overhauling AE spare cyl. covers.
3. Cleaning of ME fuel injector valves cooling water circ. tanks.
4. Washing engine rooms and cleaning bilges.

HARLI MOOSAAR  
CHIEF ENGINEER

*Swasa*

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 04 Year 1934

## AIRCONDITIONING

1. Change of AC filters, washing of filters.
2. Repairing of thermostatic valve of AC 2.
3. Adding freon to AC systems.

## ACCOMMODATION FANS

1. Repairing of cabine thermostates and air mixers.
2. Change of 5 cabine thermostates.
3. Repairing fans E49 and AC-13, adjusting belts.

## KITCHEN

1. Repairing refrigerators door and lock.
2. Repairing of kitchens furniture.
3. Repairing of paper press.
4. Repairing of dish-washing machine.

## HOTEL

1. Repairing of water mixers in cabins.
2. Repairing of one section of refrigerator lockers.
3. Repairing of cabine refrigerator.

## SEWAGESYSTEM

1. Emptying of sewage plant No 1. Cleaning.
2. Change and repairing of vacuum equipment.
3. Cleaning vacuum pipes, change of damaged pipes.

1. Repairing of coffee machine in "Poseidon", refrigerators and ice generators in "Baltic bar", juice cooler.

## MISCELLANEOUS

1. Repairing of garbage container.
2. Cleaning of swimming pool filters.

HARLI MOOSAAR  
CHIEF ENGINEER





# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 04 Year 1994

## JOBBS MADE IN APRIL ( EL. PART).

1. Installing of safety swithes & contactors on grinding machine.
2. Adjusting of ME 1 turning gear limit switch.
3. Replacement of bearings of luboil purifier 3 pump.
4. Repairing of ME 3 load indicating instrument.
5. Repairing of firetight door magnet.
6. Repairing of terminal connection on fan AD30 motor.
7. Installing of extra socket on bridge.
8. Adjusting of rudder angle indication potentiometer.
9. Repairing of air cond. temperature regulator TA control.
10. Changing vice versa of window wiper parking place.
11. Replacement of temperature after aux exhaust boiler 3 sensor.
12. Replacement of sea cooling water temperature sensor MEs 28
13. Replacement of contactor contacts ME sea water double cooling pumps (4 pcs).
14. Repairing of Sauna washing machine water pump motor.
15. Adjusting of analog pressure sensors of STL alarm system.
16. Repairing of elevator N 4.
17. Replacement of ER 41 fan el. motor bearings.
18. Replacement of AC 18 fan el. motor bearings.
19. Replacement of cardeck heating fan N 13 el. motor bearings.
20. Repairing of cooling compressor in Night Club.
21. Installing of water pool projectors.
22. Repairing of passengers ven sauna heating system.
23. Checking, adjusting of bow ramp position sensors.
24. Repairing of paper press on store.
25. Cleaning of bow thruster N 1 breaker, bow thruster boards, adjusting of starting time delays.
26. Repairing of refrig. trucks connecting cables in cardeck.
27. Repairing of coffee machine in mess.
28. Reinstalling of gyrocompass repeater on 3rd deck.
29. Replacement of RPM relays of ME 2.
30. Repairing of Rø sea water double cooling pump starter.

H. MODSAAR  
CHIEF ENGINEER

*H. Modsaar*

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 03 Year 94

## MAIN ENGINE

1. ME4 cyl.3 and 4 - overhaul
2. ME3 cyl.7 - change of high pressure fuel oil pump.
3. Elimination of control air leakage in St.b. speed contr. syst.
4. Overhaul of spare cyl.covers grinding of valves.
5. Check of crankshafts counter-weights bolts on ME 1,2,3,4.

## AUXILIARE ENGINE

1. Measurement and adjustment of cyl. top pressure AE 1 & 3.
2. Change of fuel injector valves AE 3.
3. Change of oil in AE 4 turbine.
4. Elimination of fuel oil leakages on AE systems.

## PUMPS

1. Repairing of Ps. ME preheating pump.
2. Repairing of vacuum sewage pump.
3. Repairing of Ps. ME cooling sea-water pump No 2.

## COMPRESSORS

1. Change of valves on starting air compressor No 2.
2. Repairing of solenoid valve, change of decompression valves on working air compressor.

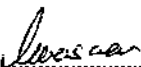
## PIPE SYSTEM

1. Repairing of ME sea cooling water pipelines.
2. Change pipes in ME fresh cooling water system.
3. Overhaul of ME 1 & 2 fresh cooling water thermostatic valves.
4. Repairing exhaust gas boilers cooling syst.

1. Overhaul and cleaning of lub.oil separators No 1,3,4.
2. Cleaning of ME 1,2,3,4 oil coolers.
3. Cleaning of fresh cooling water tank No 17.

## MISCELLANEOUS

1. Cleaning of bilges in all eng.rooms.
2. Repairing of high pressure washing machine.
3. Change of damaged pressure gauges.



CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 03 Year 94

## AIRCONDITIONING

1. Change and washing of all AC filters.
2. Repairing of AC 3 thermal oil valve.

## ACCOMMODATIONFANS

1. Straining of AC fans belts.
2. Repairing of cabine thermostats and air mixers.
3. Testing AC equipment, adding freon.
4. Greasing and checking fire flaps on vent. channels.

## KITCHEN

1. Repairing of refr. equipment in kitchen.
2. Repairing of dish washing machine.
3. Repairing of slicing machines.

## HOTEL

1. Repairing of water mixers in cabins.
2. Repairing of doors and locks.

## SEWAGESYSTEM

1. Change and repairing of vacuum-equipment.
2. Washing of sewage plants.
3. Change of vacuum pump on sewage plant.

1. Repairing of coffee machines and ice generators.

## MISCELLANEOUS

1. Repairing of carbage container.
2. Repairing of hot water heater.
3. Repairing of washing machines for crew.

*J. Jansson*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 03 Year 94

## JOBBS MADE IN MARCH ( EL. PART).

1. Installing of Pub stage dimmers.
2. Installing of alarm pushbuttons in casino.
3. Replacement of container socket on cardeck.
4. Repairing of heater timer in mess refrigerator table.
5. Installing of spotlights in tax-free.
6. Making an order of el. equipment of tax-free office.  
(cable trays, telephone, talk-back system, wall sockets.
7. Repairing of men's sauna heater, replacement of two elements.
8. Replacement of sewage flushwater pump el. motor bearings.
9. Replacement of aux. fresh cooling water double pump el. motor bearings.
10. Installing of window wiper on bridge.
11. Restauration of working ability of fire detection station L1 loop.
12. Installing of telephone to security officer's cabin.
13. Repairing of coffee machine in conference.
14. Rewinding of Tamrok work air compressor el. motor, restoring of unit's working ability.
15. Replacement of prov. cooling water pump el. motor bearings.
16. Cleaning of nightclub ice machine and greasing water pumps el. motors.
17. Replacement of container sockets in cardeck.
18. Replacement of galley range heaters.
19. Cleaning of ME fuel flow sensors.
20. Replacement of ice machine fan in Baltic Bar.
21. Repairing of coffee machine in Baltic Bar.
22. Replacement of two smoke detectors in cardeck.
23. Installing of air valve and overcurrent relay in Tamrock.
24. Adjusting of MC temp. sensors.
25. Replacement of program eliminator of ice machine in cafeteria.
26. Cleaning of MS-E.
27. Cleaning, greasing of generator breakers motor operating mechanisms, replacement of bearings in M1.
28. Replacement of welding cable in boiler room.

*M. Asa*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month FEBR Year 1994

## MAIN ENGINE

- 1.ME4 cyl.2 and 6 - overhaul.
- 2.ME2 cyl.2 and 6 - change of cyl.covers.
- 3.ME2 -repairing of automat.lub.oil filter.
- 4.Overhaul of spare cyl.covers,cleaning,grinding.

## AUXILIARE ENGINE

- 1.AE3,4 - checking,adjusting of inl.and exh.valves.
- 2.AE4 cyl.1 -change of fuel injector valve.
- 3.AE3 -repairing of air starting valve.
- 4.AE1,2,3,4 -checking of found.bolts.

## PUMPS

- 1.ME cooling pump nr.2 stb.- repairing.
- 2.ME preheat.pump stb.-change of bearings.
- 3.Thermaloil circul.pump nr.1 -change of coupl.buffers.
- 4.Thermaloil boiler pump nr.2 -change of coupl.buffers.

## COMPRESSORS

- 1.Air compr."Tamrock" -change of end part.
- 2.Air compr.nr.1 -change of coupl.buffers.
- 3.Air compr.nr.2 -change of 3-stage air pipe.

## PIPE SYSTEM

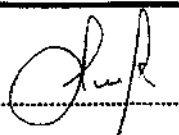
- 1.Repairing of fire system pipes.
- 2.Repairing of tailshaft bearings cooling system pipes.

- 1.L.O.purif.3 - change of vert.shaft.
- 2.Therm.oil boiler 1 -repairing of bottom insul.-covering.
- 3.Service of therm.oil boilers 1,2 burnes.

## MISCELLANEOUS

- 1.Cleaning of ME,AE,separ. rooms tanktop.
- 2.Painting in fin room.

L. LEIGER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month FEBR. Year 1994

## AIRCONDITIONING

- 1.Cleaning of AC 14-16 heaters.
- 2.Cleaning AC filters.

## ACCOMMODATIONFANS

- 1.Repairing or change of therm.regulators and air mixers.

## KITCHEN

- 1.Installation of freezers 2 pcs.

## HOTEL

- 1.Change or repairing of hot water mixers.

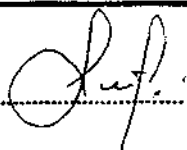
## SEWAGESYSTEM

- 1.Sewage plant nr.1 - repairing of pump nr.4
- 2.Sewage plant nr.2 - repairing of pump nr.1.
- 3.Repairing of EVAC-equipment.
- 4.Cleaning of sewage system blocked pipes.

## MISCELLANEOUS

- 1.Repairing of carbage container.
- 2.Paperpress on deck 6 - change of belts.
- 3.Paperpress on deck 5 - service.

L. LEIGER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month FEBR. Year 1994

## JOBS MADE IN FEBRUARY ( el. part ).

1. Repairing of paper press in tax free.
2. Installing of spare parts in order in finroom store.
3. Replacement of ME Stbd fuel booster pump st.by time relais.
4. Replacement of window washing nozzles heaters on bridge.
4. Replacement of window washing nozzles heaters on bridge.
5. Dismantling, cleaning, greasing of elevator N 2 el. magn. brakes, assembling, adjusting.
6. Replacement of Stbd stern "ramp in upper position" sensor.
7. Repairing of 3 broken by passengers outside lamps d.8 Ps stern.
8. Drawing of cable, installing of socket for new washing machine in E.R.
9. Drawing of telephone cable to fanroom deck 7 fore.
10. Installation of socket for playing automates deck 5.
11. Repairing of power voltage stabiliser, RPM measuring circuits, adjusting of gap for start automatic unit of aux. diesel N 2.
12. Repairing of safety lock contacts of elevators: 3 (5-th, 6-th floors), 1 (0-th floor).
13. Repairing of "inner doors closed" contact of elevator N 2.
14. Replacement of air compressor N 2 contactor main contacts.
15. Repairing of paper press in galley.
16. Repairing of signal circuits of stern ramps, restauration of working ability, replacement of signal lamps holders.
17. Greasing of front bearings of two stern thermal oil circulation pumps motors.
18. Adjusting of rotation sensing switch in Draviner of ME 3.
19. Installing of two holiday lighting winches.
20. Restauration of gyro compass repeater on bridge's Ps wing.
21. Installing of wall socket for officer's drier.
22. Making of Nautic accumulator batteries low voltage alarm.
23. Replacement of charging cable for loader in cardeck.
24. Drawing of cash desks data cables.
25. Repairing, adjusting of scrab container photo cell.
26. Repairing of high bilge water level sensor.
27. Restauration of finroom fan board.
28. Repairing of conditioning air temperature regulator.

L. LEICER  
CHIEF ENGINEER

*[Handwritten signature]*

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JAN. Year 1994

## MAIN ENGINE

1. ME4 cyl.8 - overhaul. Cyl.7 - change of exhaust manifolds expansion pieces.
2. ME2 - change of sircooler. Cyl.6 - change of cyl.cover.
3. ME1,4 - checking and adjusting clearances of inlet and exhaust valves.

## AUXILIARE ENGINE

1. AE2 - change of fuel injector valves. Survey of camshaft (bearings, cams, gear wheels) and roller guide assembly. Checking and adjusting clearances of inl. and exh. valves. Measure and record crankweb deflections.
2. AE1 - Measure and record crankweb deflections.

## PUMPS

1. ME seawater pump nr.2 (PS) - change of impeller.
2. Thermal oil boiler pump nr.1 - change of rot.gasket and bearing.

## COMPRESSORS

1. Air compressor nr.1 - change of cooler 3-stage.
2. Air compressor nr.2 - change of induction and exhaust valves 2-stage.

## PIPE SYSTEM

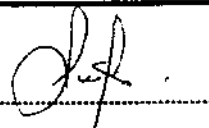
1. Repairing of fire system pipes on deck 7.
2. Connection of fin cooling system pipes with AE cooling system.
3. Installation of oil pipes to headers of fin system.
4. Change of valves on fresh and seawater cooling systems (4 pcs).

1. L.O. puif.3 - change horizot. shaft bearings.
2. Cleaning of therm.oil boiler nr.1
3. Cleaning of ME and AE exh.gas boilers.
4. Service of therm.oil boilers 1,2 burnes.

## MISCELLANEOUS

1. Cleaning of ME, AE and sep.rooms tanktop.
2. Works before and after installation stabiliziers in finroom.

L. LEIGER  
CHIEF ENGINEER





# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JAN Year 1994

## AIRCONDITIONING

- 1.Cleaning AC filters.
- 2.Cleaning AC rooms.

## ACCOMMODATIONFANS

- 1.Repairing of therm.regulators and air mixers 32 pcs.
- 2.Change of therm.regulators 6 pcs.

## KITCHEN

- 1.Replacing of freon pipes in kitchen.
- 2.Repairing of freezers in kitchen.

## HOTEL

- 1.Repairing of ice-generator in sauna.
- 2.Repairing of MC ventilation valves on deck 4.
- 3.Repairing of hot water mixers on deck 5,7 and 8.

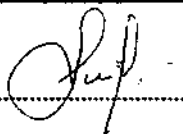
## SEWAGESYSTEM

- 1.Change of level sensor in galley grey water tank.
- 2.Cleaning of sewage plant nr.1,2.
- 3.Cleaning of sewage system blocked pipes.

## MISCELLANEOUS

- 1.Repairing of carbage containers.

L. LEIBER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JAN. Year 1994

## JOBBS MADE IN JANUARY /el. part/

1. Rewinding, installing of luboil purifier N2 el. motor.
2. Repairing of elevator N 1 floors indication.
3. Cleaning of Port propulsion plant friktion of manoeuvre handle on Sb wing.
4. Repairing of coffee machine in conference.
5. Repairing of dishwashing machine in galley.
6. Replacement of galley boiler heater.
7. Repairing of luboil transfer pump starter.
8. Replacement of lighting board L15a breaker on Main Distributing board.
9. Mounting, connection of Stab. syst. Roll sensor.
10. Replacement of luboil purifier N3 contactor in K15 board.
11. Mounting of new lighting board on deck 5 stern.
12. Repairing of power source for central office computer.
13. Checking of oil mist detector N 1.
14. Repairing of foodstore refr.compressor N 1 el. motor terminals.
15. Adjusting of Aux. eng. 2 RPM measuring unit.
16. Repairing of milk cooler in Poseidon.
17. Replacement of wall socket in store room deck 1.
18. Adjusting of elevator N 2 outer doors safety lock.
19. Printing out and putting in of coefficients in Steermaster.
20. Repairing of phone in boiler room.
21. Mounting of roulette spotlight in pub.

## JOBBS MADE DURING DOCKING.

1. Helping in mounting of new panel on bridge, moving of navigational lights panel, 4 ETA-piloti cables drawing under the bridge deck, drawing of cable from bridge stabilisers panel to Doppler log central unit, installing of ETA-pilot switch.
2. Repairing of shore connection box Sb after short current between shore cable fuses.
3. Repairing in passengers cabins according to remarks.
4. Repairing of separators boards K14, K15, replacement of contactors and overcurrent relais.
5. Repairing of MDB 220 V panels.
6. Adjusting of generator voltages.
7. Drawing of cable, connecting of new lighting board, unloading of lighting board L12.
8. Cleaning, repairing of ranges, grill, cooking boilers in galley.

L. LEIGER  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

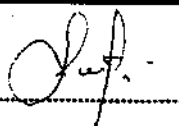
WORKS MS ESTONIA Month JAN Year 1994

9. Replacement of oil separators pumps el. motors cables.
10. Replacement of bearings in oil separators pumps el. motors(2 pcs.).
11. Replacement of bearings in ME fuel booster pumps(4 pcs.).
12. Repairing of ME local control panels,remote control and safety systems.
13. Replacement of local/remote switch of thermal oil circulation pump.
14. Synchronizing of KalleWa port propulsion plant control handles on bridge.
15. Repairing of hair driers and ice machine in passenger sauna.
16. Repairing of coffee machine in mess.
17. Disconnecting and connecting back of el. equipment in gift shop and halls because of new carpets putting.
18. Repairing of elevator N2.
19. Mounting and installing of cable trays,installing of remaining cables,connecting of them to stabilizers units.

## JOBS MADE IN JANUARY AFTER DOCKING.

1. Repairing of stern ramp Sb ,replacement of two sensors.
2. Replacement of bilge and ballast valves control pushbuttons.
3. Repairing of Berkel slicing machine in galley.
4. Replacement of bearings in oil separator N3 el.motor.
5. Repairing of dishwashing machines.
6. Repeating of cardeck lightings.
7. Mounting of new pulplamps on bridge.
8. Repairing of oil mist detektor N1.
9. Cleaning,adjusting of brake of lift N2.
10. Checking of emergancy lightinds.
11. Replacement of cable of bow slide projector with zoom.
12. Replacement of firesensors in cardeck.
13. Cleaning,checking,adjusting of firedoor with automatic release.

L. LEIGER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month DEC Year 1993

## MAIN ENGINE

- 1.ME1 cyl.5 -change of fuel injector valve and fuel pump.
- 2.ME2 -change of main bearing nr.8 and air cooler.
- 3.ME1,2,3,4 -cleaning of turbocharges lub.oil tanks.
- 4.ME2,3 -measure and record crankweb deflections.

## AUXILIARE ENGINE

- 1.AE4 -change of fuel injector valves,measure and record crankweb deflections,checking and adjusting inlet and exhaust valves clearances.
- 2.AE3 -checking and adjusting inlet and exhaust valves clearances.

## PUMPS

- 1.Repairing of AE seawater pump nr.2
- 2.Repairing of emergency engine fuel transfer pump.

## COMPRESSORS

- 1.Air compr.1 -change of induction and exhaust valves 1.and 2.stages.Change of lub.oil.

## PIPE SYSTEM

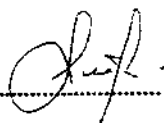
- 1.Repairing of cooling seawater pipes in eng.room.
- 2.Rebuilding of fuel settling and daytanks drain system pipes.

- 1.L.O.purif.2 -change of vert.shaft and bearings.
- 2.Cleaning of AE exhaustgas boilers.
- 3.Cleaning of boiler nr.2.
- 4.Boiler 1,2 -cleaning,survey of burners nozzles.

## MISCELLANEOUS

- 1.Cleaning of ME,AE and sep.rooms tanktop.
- 2.Works for installation fin stabiliser.

L. LEIBER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month DEC Year 1993

## AIRCONDITIONING

- 1.Cleaning AC filters.
- 2.Repairing of control valves AC 9,8,10.

## ACCOMMODATIONFANS

- 1.Repairing of pass.cabins air mixers.
- 2.Change of thermoregulators in pass.cabins.

## KITCHEN

- 1.Repairing of freezers in kitchen.
- 2.Repairing of galley steam oven.

## HOTEL

- 1.Repairing of drain pipes in "Baltic Bar".
- 2.Repairing of hot water mixers.

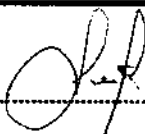
## SEWAGESYSTEM

- 1.Washing of sewage plants 1,2.
- 2.Repairing of small sewage tank on deck 6.
- 3.Repairing of pump nr.2 (stern grey water tank) and non-return valve.

## MISCELLANEOUS

- 1.Repairing of carbage container.
- 2.Repairing of washing machine in eng.room.
- 3.Cleaning of sewage system blocked pipes.

L. LEIDER  
CHIEF ENGINEER



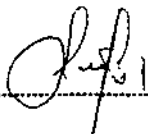
# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month DEC Year 1993

## JOBS MADE IN DECEMBER (el. side).

1. Making of cable connections for cardeck.
2. Washing of generators air filters.
3. Making of new scale for wind direction shower.
4. Replacement of start air compressor & current transformer.
5. Replacement of ME2 air charger luboil pressure transmitter.
6. Repairing , cleaning , prophylactic of shore connection box Stbd.
7. Repairing of timer, thermostate, replacement of heater element of officers sauna.
8. Repairing of bow ramp inductive sensors.
9. Repairing of dishwashing machine in mess.
10. Repairing of elevators n 2,3: replacement of safety lock magnets assemblies, time relais.
11. Making, repairing, installing of Cristmas trees lighting.
12. Repairing of air conditioning AC10 automatic valves.
13. Replacement of waterproof door control system contactor in prov.store.
14. Replacement of Aux. eng.2 RPM sensor.
15. Repairing, cleaning, prophylactic of ME connection boxes.
16. Adjusting of ME & propeller shafts tachometers.
17. Repairing of ME4 shaft turning device control box, pushbuttons.
18. Cleaning of friction gear of rudder wheel on bridge.
19. Replacement of coocking pan feeding cable.
20. Replacement of terminal connector, cleaning, drying of convectional oven.
21. Repairing, washing, drying of potato peeler.
22. Cleaning of Aux. eng.2 connecting box.
23. Installing of heating cable for fuel oil filter drain pipe warming.
24. Making of LED bar indicator instead of lamps to alarm system STL.
25. Drawing of stabilizer cables on bridge.
26. Installing of light fittings , transformers, regulators in Pub.
27. Repairing of PF2 printed circuits of alarm system STL.
28. Replacement of fuel sensor N 13 on cardeck.
29. Mooving away everything stored in finroom stbd.
30. Repairing of lift deckés indication.
31. Repairing of purifair oil ME2 motor.
32. Replacement of bridge dimmer.
33. Repairing of galley steam oven.
34. Replasement of bearings of busterpump purifier N1 motor.

L. LEITER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month NOV. Year 1993

## MAIN ENGINE

- 1.ME3 cyl.5 - overhaul. ME1 cyl.3 - overhaul.
- 2.ME4 cyl.8 - change of exhaust valves.
- 3.ME1 - repairing of turning gear.
- 4.ME4 cyl.7 - change of exhaust manifolds expansion pieces.
- 5.ME3 - change of fuel injector valves.

## AUXILIARE ENGINE

- 1.AE1 and AE3 -change of fuel injector valves.
- 2.AE2 - survey of camshaft (cams,bearings,gear wheels).
- 3.AE4 - checking and adjusting clearances of inlet and exhaust valves.

## PUMPS

- 1.Change of trim pump seal.
- 2.Repairing of pump 4 of sewage plant 1.

## COMPRESSORS

## PIPE SYSTEM

- 1.Installation of cooling water system pipelines for fin stabiliser.
- 2.Repairing of ME seawater pipelines.
- 3.Repairing and painting of seawater filters. ( 4 pcs )

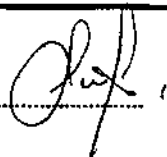
## PURIFIERS

- 1.L.D.purif.2 - change of vert. and horizontal shafts bearings, gear wheel.

## MISCELLANEOUS

- 1.Cleaning and repairing of ME4 water cooler.
- 2.Cleaning and painting in AE room.
- 3.Change of control valve of stern ramp (PS).
- 4.Elevators nr.1,2,3 - change of wire ropes and wheels.
- 5.Repairing of lifeboat nr.4 winch gear.

L. LEIGER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month NOV Year 1993

## AIRCONDITIONING

1. Change of fan bearings.
2. Cleaning AC filters.

## ACCOMMODATIONFANS

1. Repairing of pass.cabins air mixers.
2. Change of thermoregulators in pass.cabins.

## KITCHEN

1. Repairing of dishwashing machine drainwater pipelines.

## HOTEL

1. Change of hotwater mixers on deck nr.1 and 4.(4pcs)

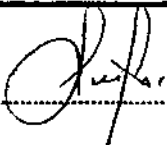
## SEWAGESYSTEM

1. Repairing of transmitters in stern greywater tank.
2. Change and repairing of EVAC-equipment.

## MISCELLANEOUS

1. Repairing of hot water system valves.
2. Repairing of washing machines.

L LEIGER  
CHIEF ENGINEER





# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month NOV. Year 1993

## JOBS MADE IN NOVEMBER ( EL. PART).

1. Repairing of AlaeCarte coffee machine heater.
2. Repairing of juice maker in galley.
3. Repairing of control & indication unit of elevator 4.
4. Repairing of refrig. case in galley.
5. Adjusting of ME sea cooling water pressure analog transmitters.
6. Cable & installing jobs in Pub.
7. Drawings of two data cables in Pub.
8. Cleaning of analog sensors of ME.
9. Replacement of dish washing machine safety limit switch in mess pantry.
10. Replacement of el. magn. valve in dish wash. machine in Night Club.
11. Drawing of new DB L 13B feeding cable.
12. Replacement of sewage blower 1 bearings.
13. Repairing of shaker in Pub.
14. Replacement of Steermaster back up acc. batteries.
15. Repairing of deck washing machines Kärcher - 2 pcs.
16. Mounting of three lock switches in elevators 3, 4.
17. Adjusting of elevator 3 slow speed switches u 10.
18. Replacement of aux engine exhaust gas thermocouples.
19. Repairing of galley elevator bell.
20. Replacement of swimming pool heater.
21. Cleaning & adjusting of RPM indicators on bridge.
22. Repairing of Karaoke machine stabilizer.
23. Repairing of two amperimeters on MDB.
24. Greasing of all 7 MDB breakers motor operating mechanisms. moving parts with Molycote Longterm 2 plus.
25. Repairing of stern holiday lighting.
26. Drawing of fin system cables.
27. Replacement of fire alarm station smoke sensors ( 2 pcs).
28. Dismantling, replacement of back bearing of sewage water pump motor.
29. Repairing, prophylactic of PS shore connection board.
30. Repairing of phone apparatus from store.
31. Replacement of regulating switch of food warmer in Poseidon.
32. Repairing & testing of fire alarm smoke detectors.
32. Repairing of main engines turbocharge air cooling system sensors.
33. Installing of stern winch of central part of holiday lighting.
34. Repairing of food warmer in Poseidon.
35. Repeiring of B deck lighting.
36. Mounting of fuel nozzle tube heater.
37. Replacement of bow ramp detecteur inductif.
38. Replacement of CPP level pump port magnet coil & transformer.
39. Adjusting of contr. sea water ME 3, 4.

L. LEIGER  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month OCT. Year 1995

## MAIN ENGINE

- 1.ME3 cyl.7 and 8 overhaul.Cyl.1 change of exh.valves.
- 2.ME1 cyl.2 overhaul.Repairing of starting pilot valve.
- 3.ME4.cyl.2 change of cyl.cover.Cyl.8 and 5 change of exhaust valves.Repairing of starting pilot valve.
- 4.ME2 and ME4 change of fuel injector valves.

## AUXILIARE ENGINE

- 1.AE 1,2,3,4 .Checking and adjusting clearances of inli: and exh. valves.Survey of camshafts (bearings,cams, gear wheels) and roller guide assembly.Change of oil in turbocharger and governor.
- 2.AE1.Test and survey safety devices.

## PUMPS

- 1.Repairing of boiler circul.pump no.1 (bearing,seal).
- 2.Repairing of boiler pumps no.1 and 2.
- 3.Repairing of hot water circul. pump no. 2.
- 4.Repairing of trim pump.

## COMPRESSORS

- 1.Air compr.no.1.Change of 1.and 2.stages coolers.  
Cleaning of 3.stages cooler.
- 2.Air compr.no.2.Change of induction and exhaust valves of 3.stage.

## PIPE SYSTEM

- 1.Repairing of ME sea water system pipelines.

## PURIFIERS

- 1.L.O.purifier no.1.Change of vertical shaft with bearings,change of horizontal shaft bearing(st.b.)
- 2.L:O: purifier no.3.Change of vert.and horizontal shafts bearings.

## MISCELLANEOUS

- 1.Cleaning of tanktop in E.R.Cleaning and painting in sewage room.Repairing of bow ramp locks.  
Overhaul of ME cyl.covers.Overhaul of ME fuel injector valves.

L. LEITER  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month 09. Year 1993

## AIRCONDITIONING

- 1.Cleaning AC filters.
- 2.Change of fans belts.

## ACCOMMODATIONFANS

- 1.Change of themoregulators in pass.cabins.
- 2.Repairing of pass.cabins air mixers.

## KITCHEN

## HOTEL

- 1.Removing of freezers in "Neptunus",removing of freon and water pipelines.
- 2.Installation of new sink,water and drainwater pipelines in "PUB".

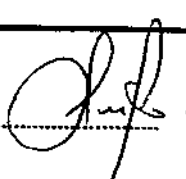
## SEWAGESYSTEM

- 1.Repairing and change of EVAC-equipment.
- 2.Repairing of outlet valve sewage plant no.2
- 3.Repairing of non-return valve sewage plant no.2.

## MISCELLANEOUS

- 1.Repairing of hot water system valves.
- 2.Repairing of washing machines

L. LEIGER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month Oct. Year 1995

## JOBS MADE IN OCTOBER (EL.)

1. Repairing & adjusting of code locks & their timer.
2. Repairing of terminal connection of ME exhaust fan.
3. Repairing & adjusting of generators breakers.
4. Replacement of back bearing of ME oil purifier N2.
5. Repairing of galley pans.
6. Making & installing of exchange office alarm, cable drawings
7. Cable drawings for Tallinn shore phone to INFO.
8. Repairing of bilge & sea valves indication sensors 6 pcs.
9. Repairing of gas alarm buzzer on bridge.
10. Replacement of time relais in ECR pulpet.
11. Grinding of bow thruster N2 sliprings.
12. Repairing of toaster (Poseidon restaurant).
13. Reassembling of luminaires in gift shop.
14. Adjusting of RPM sensor on aux. engine N1.
15. Testing, adjusting of TAMROCK pressostate.
16. Repairing of oil flow meters of boilers.
17. Replacement of exhaust gas thermocouple ME N3 cyl. N3.
18. Repairing of el. range in cold galley.
19. Repairing of Kärcher washing mashine main switch.
20. Assembling of distr. board for PUB.
21. Cable jobs in PUB.
22. Replacement of el. magnet valve in Night club dishwashing machine.
23. Dismantling of el. equipment in cafeteria.
24. Repairing of foodshop refrigerator.
25. Replacement of Salvico fire detect. station sensor.
26. Replacement of bow ramp position sensor.
27. Replacement of bow ramp signal lamps holders.
28. Repairing of flashing lights in Disco.
29. Deviding of lighting & locking boxes refrig. compressors mains.
30. Cable jobs in cafeteria.
31. Installing of hanging holiday lighting stern winch.
32. Repairing of galley mixer.
33. Repairing of kitchen foodprocessor.
34. Repairing of sauna washing mashine pump.
35. Installing of heater on condensate water keeper in Poseidon.
36. Replacement of swimmingpool heater.

L. LEIQUER *Leifer*  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month SEPT. Year 1993

## MAIN ENGINE

- 1.ME1 cyl.4.Change of cyl.cover.
- 2:ME3 cyl.3.Overhaul of piston,change of cyl.liner 0-rings,cover.
- 3.Overhaul spare cyl.covers,cleaning,grinding valves.
- 4.Overhaul spare turbine rotor.
- 5.ME4 cyl.7 -change of fuel injector valve.

## AUXILIARE ENGINE

- 1.AE1.Change of all main bearings.
- 2,AE2.Change of all cyl.covers,fuel injector valves.  
Change of roller guide assembly cyl.2.  
Change of high pressure fuel oil pump cyl.2.
- 3.AE 2,3,4 -Test and survey safety devices.

## PUMPS

- 1.Repairing of grey-water pump nr.1.
- 2.Change of hot water circul.pump.

## COMPRESSORS

- 1.Air compressor 1.-change of induction and exhaust valves of 1.and 3.stages.
- 2.Air compressor 2. Change of main bearings,connect. rod with bearings,induction and valves of 1.and 3.stages.

## PIPE SYSTEM

- 1.Repairing of fire extinguishing system pipelines in AE room.
- 2.Repairing of ballast system pipelines in ME room.
- 3.Change of part of vacuum system pipelines on 1.deck.

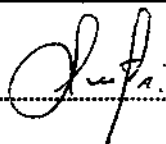
## PURIFIERS

- 1.Change of vertical and horizontal shafts bearings in F.O.purifier 1.

## MISCELLANEOUS

- 1.Cleaning of thermaloil boilers nr.1 and 2.
- 2.Change of F.O.pump on thermaloil boiler nr.2.
- 3.Repairing of lifeboat nr.2 winch gear.
- 4.Repairing of sternramp P.S.

L. LEIGER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month SEPT. Year 1993

## AIRCONDITIONING

- 1.Repairing and adjustment of thermal oil valves.
- 2.Change and cleaning AC filters.

## ACCOMMODATIONFANS

- 1.Change of thermoregulators in pass.cabines.
- 2.Repairing of pass. cabins air mixers.

## KITCHEN

## HOTEL

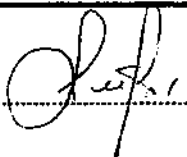
## SEWAGESYSTEM

- 1.Cleaning of sewage plant nr.1.
- 2.Cleaning of blocked pipes in sewage system.
- 3.Repairing and change of EVAC-equipment.

## MISCELLANEOUS

- 1.Repairing of washing machines.
- 2.Repairing of garbage containes.

L. LEICER  
CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month SEPT. Year 1993

## JOB'S MADE IN SEPTEMBER ELECTRIC PART

1. Repairing of two welding transformers.
2. Repairing of four oil mist detectors.
3. Repairing of overhead, starboard & port side projectors
4. Repairing of temperature regulating valve AC-12.
5. Adjusting of propeller shaft bearings temperature sensors.
6. Replacement of inductive RPM sensor of aux. eng. N 1.
7. Repairing of ME 3 & 4 cooling water pumps stand by time relais.
8. Repairing & prophylactic of all outside lighting.
9. Repairing of generator breakers 1, 2, 3, 4 motor operating mechanism.
10. Repairing of ME 3 cyl. 3 exhaust gas thermocouple cable.
11. Repairing of elevator N 2.
12. Replacement of pilot doors connecting boxes.
13. Replacement of grey water pump N 1 bearings.
14. Repairing of code locks.
15. Repairing of bilge valves indication switches.
16. Rebuilding of data office.
17. Cable drawings for data office.
18. Repairing of cash-desk transporter band motor.
19. Replacement of water hydropump N 1 contactor.
20. Replacement of carbidge container pressostate switch.
21. Jobs according to maintenance plan for september.

J. LAICER  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month AUGUST Year 1973

## MAIN ENGINE

1. ME1 cyl. 8. Piston overhaul, change of cyl. cover.
2. ME3 .Change of exhaust gas turbine rotor.
3. ME1-change of 5 fuel injector valves.
4. Cleaning of lubricating oil coolers ME 1,2,3,4.

## AUXILIARE ENGINE

1. Overhaul AE4-change of main bearings, big end bearings, piston rings. Installed overhauled cyl. covers and connecting rods. New p-rings to cyl. liners. Cleaning of lub. oil cooler.
2. Change of high pressure fuel oil pump on cyl. 2 AE2
3. Change of fuel oil injector valves on AE3.
4. Change of oil filters, cleaning of purifier AE1.

## PUMPS

1. Repairing of sewage pump on plant Nr2.
2. Repairing of sewage flush-water pump Nr4 on plant Nr1.

## COMPRESSORS

## PIPE SYSTEM

1. Repairing of hot water pipelines on deck Nr6 and Nr7.
2. Repairing of fire water system on deck Nr7.
3. Repairing of cooling seawater and freshwater pipelines in ME-room.

## SEPARATORS

1. Change of horizontal shaft bearings and gear wheel on F.O. separator Nr1.
2. Cleaning of F.O. separators Nr 1 and 2, L.O. separator Nr3, aux. eng. lub. oil separator.

## MISCELLANEOUS

1. Overhaul of ME cyl. covers -2pcs.
2. Repairing of KaMeWa contr. oil cooler.
3. Overhaul of AE cyl. covers -6pcs.
4. Repairing of car deck pneumatic doors.

HARLI MOOSAAR

*Mooscar*

CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month AUGUST Year 1993

## AIRCONDITIONING

1. Change and cleaning AC filters.
2. Filling with oil and freon AC compressor Nr1.
3. Repairing and adjustment of thermal oil valves.

## ACCOMMODATIONFANS

1. Repairing of pass.cabines air mixers, change of broken parts.
2. Change of thermoregulators in pass.cabines.

## KITCHEN

1. Repairing of water pipelines in kitchen.
2. Installation of new refrigerator.
3. Repairing of dish-washing machines, coffee-makers.

## HOTEL

## SEWAGESYSTEM

1. Cleaning of sewage plant Nr2.
2. Cleaning of ventilation pipes of sewage plants.
3. Repairing and change of EVAC-equipment.
4. Cleaning of glogged pipes in sewage pipelines.

## MISCELLANEOUS

1. Repairing of garbage container.
2. Repairing of washing machines.

HARLI MOOSAAR

CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month AUGUST Year 1993

## JOB'S MADE IN AUGUST BY ELECTRIC GROUP.

1. Repairing of lifts N 1-4, cleaning of door contactors, replacement of slide contacts, capacitors.
2. Repairing of hydraulic lift, replacement of capacitors.
3. Replacement of gas sensors N 6,9 of gas sensor system. Checking of system.
4. Replacement of bearings, cleaning and centring of el. motors therm. oil circ. pumps N 1,2.
5. Cleaning of ice generator on deck N5.
6. Adjustment of washing machine "Berkel" in pub.
7. Cleaning of contacts of el. car.
8. Replacement of car deck sensor of "Salvico". Checking of system.
9. Cleaning of searchlights.
10. Adjustment of safety systems ME.
11. Repairing of washing machines deck 1,8, changing of relays.
12. Adjustment of oil mist detectors Of ME 1-4.
13. Replacement of kitchen facilities.
14. Cleaning of K10, K11, K12.
15. Cleaning of batteries.
16. Drawing of data cables on deck N4.
17. Adjustment of time delay of relay switching on st. by pump of ME4.

HARLI MOOSAAR

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JULY Year 1993

## AIRCONDITIONING

1. Filling with freon and oil AC compressor VSM-57EB N2.
2. Change of filters on AC No 1-198, washing filters.
3. Cleaning of heat exchangers in AC.
4. Change of compressor in engine control room AC.

## ACCOMMODATION FANS

1. Greasing of fans bearings.
2. Repairing of cabins air mixers and thermoregulators.

## KITCHEN

1. Repairing the hot water system in kitchen.
2. Cleaning the waste-water pipes.
3. Repairing of card-board press in kitchen.
4. Repairing of dish-washing machine.
5. Repairing barrows, shells, slicing machines.

## HOTEL

1. Repairing works on fresh water and sewage systems in pass. cabins.
2. Change of water in swimming pool, cleaning of filters.

## SEWAGE SYSTEM

1. Change and repairing of EVAC-equipment.
2. Repairing of chlorine dosator.
3. Installation of new aeration pipes to sewage plants No1 and No2.
4. Cleaning of clogged pipes, repairing of sewage pipelines.

## MISCELLANEOUS

1. Installation of new equipment in the bars and restaurants.
2. Repairing of restaurant equipment-coolers, coffee-machines, ice-generators, juice, milk apparatus.

*Stavros*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JULY Year 1993

## MAIN ENGINE

- 1.ME1 cyl.1-change of liner,cyl.cover and piston.
- 2.ME1 cyl.6-change of cyl.cover,overhaul of piston,change pist.rings
- 3.ME1 cyl.7-change of cyl.liner and cyl.cover,piston overhaul.
- 4.ME2-change of exhaust gas turbine rotor.
- 5.ME3 cyl.8-change of cyl.cover.

## AUXILIARE ENGINE

- 1.AE1 cyl.2-change of rocker arms.

## PUMPS

- 1.Repairing of hot water circulation pump.
- 2.Change of shaft seal on injectors cooling pump.

## COMPRESSORS

- 1.Compr.N2-change of 3rd stage cooler.
- 2.Compr.N3-change of 1st and 2nd stage coolers.

## PIPE SYSTEM

- 1.Elimination of leakage of cooling system ME4.
- 2.Elimination of fuel oil leakage on ME4.

## SEPARATORS

- 1.Change of vertical spindel and bearings on lub.oil separator N2
- 2.Change of vertical spindel and bearings on lub.oil separator N3

## MISCELLANEOUS

- 1.Overhaul and cleaning spare ME cyl.covers-3pcs.
- 2.Elimination of water leakage in KaMeWa contr.oil cooler Ps.
- 3.Painting in engine rooms.
- 4.Washing in engine rooms,cleaning the bilges.

  
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CHIEF ENGINEER

## JOBS MADE IN JULY BY ELECTRIC GROUP

1. Repairing of paper press in galley.
2. Mounting of charger on cardeck & drawing of its cables.
3. Repairing of paper press in store.
4. Drawing of the cable to food shop, mounting of wall sockets.
5. Drawing of cable to dishwashing mashine in pub.
6. Repairing of handdriers in toilets.
7. Repairing of slicing mashine.
8. Replasement of bearings in oil circ.pump N1
9. Repairing of rectifier of hydraulic elevator.
10. Sliprings grinding & replasement of coal brushes of bow thruster N 1.
11. Repairing of window wiper on bridge.
12. Replacement of burned signal lamp transformers in motor starters.
13. Repairing of refrigerator in food shop.
14. Greasing of lower bearing in bow thruster N 1.
15. Hermetizing of lift N 3 door boxes on floor 1.
16. Installing of advertisement light in pub.
17. Repairing of coffee mashine in Poseidon.
18. Installing of grounding contactor of holiday lighting.
19. Installing of new sauna heater.
20. Replacement of two relais of generator breaker N 3.
21. Repairing of program circuit of cafeteria coffee machine.
22. Repairing of hanging deck indication.
23. Repairing of lift N 5 counterweight limit switch.
24. Drawing of cables to & installing of two coffee & two choco machines in Poseidon.
25. Drawing of four NMI antenna cables.
26. Replacement of two galley refrigerator contactors.
27. Repairing of lifeboat N 1 winch limit switch.
28. Greasing of front bearing of burner thermal oil pump N 1.
29. Replacement of aux eng. booster pump motor bearings.
30. Shifting of coffee machines, different connecting jobs in Poseidon.
31. Adjusting of boiler fuel oil heater temperature.
32. Installing of wall sockets in pub, cable drawings.
33. Repairing of bow thruster N1 rotor resistors.
34. Replacing of lift N 2 safety lock magnet.
35. Installing of phone in food shop.
36. Installing of spotlight & dimmer in pub, cable drawing.
37. Installing of door magnets on deck B, cable drawing.
38. Repairing of generator N 3 undervoltage release delay unit.
39. Cleaning & grinding of emergency gen. starting batt. terminals, refilling.
40. Repairing of A-meters in motor starters.
41. Cleaning , drying , hermetizing, prophylactic of main engine exhaust gas & bearings temperature sensores connecting boxes.
42. Installing of new dancing place blinking light transformer & its remote controle.
43. Replacement of mess dishwashing machine contactor.
44. Replacement of window wiper brush on bridge.
45. Cleaning & drying of Coca selling machine on deck 5.

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JUNE Year 1993

## MAIN ENGINE

- 1.Repairing of start air distributor on ME4.
- 2.Piston overhaul,change of cyl.liner o-rings Cyl.7 ME4.
- 3.Change of big end bearings upper halves ME4 Cyl.1-8.
- 4.Change of 10 turbocharger fixing bolts on ME2.
- 5.Overhaul spare cyl.covers,cleaning,grinding valves.

## AUXILIARE ENGINE

- 1.Change of turbine rotor,bearings & oil on AE1.
- 2.Change of fuel injectors on AE2.
- 3.Change of oil filters,cleaning of purifier on AE 2,3&4.

## PUMPS

- 1.Repairing of fresh cooling water pump-change seals,welding body.

## COMPRESSORS

## PIPE SYSTEM

- 1.Rebuilding of freon pipeline in PUB.
- 2.Repairing of hot water pipes in kitchen.
- 3.Repairing of waste water pipes on car-deck.

## BOILERS

- 1.Cleaning of thermal oil boilers,checking of control system,cleaning leakage detectors.
- 2.Cleaning of boiler burners,survey.

## MISCELLANEOUS

- 1.Cleaning the bilges in engine rooms.
- 2.Washing and painting in engine rooms.
- 3.Greasing of life-boat equipment,checking of life-boat motors.
- 4.Cleaning of provision plant coolers.
- 5.Overhaul of start air valves on ME4 Cyl.7&8.

*Mossan*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JUNE Year 1993

## AIRCONDITIONING

1. Change of filters on AC No 1-19B. Washing filters.
2. Repairing of 2 thermal oil valves.
3. Greasing of AC fans bearings.
4. Repairing of thermostatic valve on ECR AC.

## ACCOMMODATION FANS

1. Repairing of cabins air mixers.
2. Change of thermostats in cabins No 4322, 4619.

## KITCHEN

1. Repairing of isolation in kitchen cooling chambers.
2. Repairing of refrigerators.
3. Repairing of shells and barrows in kitchen.
4. Repairing of dish-washers.
5. Repairing of food cutting machines.

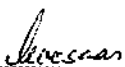
## HOTEL

## SEWAGESYSTEM

1. Cleaning of sections on sewage plant No 1 and 2.
2. Cleaning and checking of air compressor on sew. plant No 1.
3. Repairing of chlorine dosator.
4. Repairing of EVAC-equipment.
5. Cleaning of clogged pipes in sewage and waste-water systems.

1. Repairing of ice-generators in bars.
2. Installation of new equipment in PUB and new shop.

## MISCELLANEOUS

  
.....  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JUNE Year 1993

## ELECTRICAL WORKS

1. Repairing the coffee machine in Poseidon.
2. Cable works in Pub.
3. Repairing of transporting band of cassa in the shop.
4. Replacement of contactor coil of fan N 17.
5. Refilling of loader batteries (cargo in cardeck).
6. Greasing of thermal oil circulating pump's motor bearings.
7. Repairment of elevator N 1: replacement of limit switch b 4, tension weight for lifts car speed governor.
8. Elevator N2 tightening of inner door.
9. Replacement of paper press belts in galley.
10. Replacement of d4 relais of control of watertight door N 12.
11. Repairment of cooking boilers in the galley, replacement of transformer & thermostat.
12. Repairing of washing machine deck 8.
13. Repairing of pressostate of boiler pressure.
14. Replacement of two st-by relais in ECR board.
15. Drawing of cable from cash desk in A la Carte to the bar.
16. Cooling water pump for refrigeration plant-replacement of bearings, greasing washing.
17. Repairing of 4 light armatures in fan rooms.
18. Eliminating of low insulation resistance L13, F17.
19. Replacement and connecting of rectifier (charger) of el. car.
20. Repairing of purifier in night club.
21. Adjusting of charger in life-boat N2.
22. Repairment of impeller of the cardeck fan N3 fore.
23. Replacement of bearings in fan motors ER39, 41, AC7, AC19.
24. Taking off the lighting equipment in the pub, installing of new lamps, transformers.
25. Repairing of elevator N4, hermetizing of safety lock boxes in elevator N 3.
26. Repairment of rectifier in control box of hydraulic lift.
27. Checking cleaning of the level sensors of fresh water expanding tank.
28. Checking of all tachometers of all ME.
29. Repairing & adjusting of temperature regulators of AC plant.
30. Repairing of control electronic diagram of cafeteria coffee mach.
31. Repairing of window wiper at bridge.
32. Replacing of thermostat of food heater in Poseidon.
33. Replacement of bearings in boiler circ. pump N2.
34. Grinding of slip ring 1 on bow thruster N1.
35. Replacement of fan motors bearings fans ER32, E25, installing of steering gear room fans.
36. Repairing of coffee machine in Poseidon pantry.
37. Repairing of burned EXIT lamp armature in cardeck.
38. Replacement of burned signal lamp transformers in motor starters.
39. Replacement of pressostate of low pressure in hydrotank alarm.
40. Checking and greasing of toaster in the galley.
41. Repairing of timer in steamheated oven.

*Alvar*

CHIEF ENGINEER



# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month JUNE Year 1993

42. Drawing of data and 220 VPS main cables from gift shop to the food shop.
43. Drawing of cables to & installing of two Hartec safety valves.
44. Revision of all ramps control circuits, replacement of 3 burned coils, cleaning, drying of connecting boxes, hermetizing.
45. Installing of rewinded transformer to K11 panel.
46. Installing of motor to wash. machine d7.
47. Repairing of vegetables cutter.
48. Changing of contacts in C2 contactor lift N4.
49. Replacement of burned coil of ECR air conditioner.
50. Checking of grill in the galley.
51. Checking of icecube machines d6, d4.
52. Repairing, changing of bearings, greasing of dishwashing machines in the galley.
53. Repairing of slicing machine.
54. Checking of all batteries, refilling, checking of battery chargers drawing of cable to navigation batteries charger.
55. Lighting equipment in accommodations, superstructure-checking, repairing.

*Liisaa*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month MAY Year 1993

## MAIN ENGINE

- 1.ME No 1 Cyl.5.Elimination of cooling water leakage between cylinder liner and frame.Overhaul of piston,change of cyl.cover.
- 2.ME No 2 Cyl.4.Elimination of cooling water leakage between cylinder liner and frame.Overhaul of piston,change of cyl.cover.
- 3.Elimination leakage of cooling water in exh.valves ME2 Cyl.2.

## AUXILIARE ENGINE

- 1.Change of valve gear thrust piece and pipe on AE1 Cyl.2
- 2.Piston overhaul AE3 Cyl.1.Cheking of big end bearing.Change of cylinder cover studs.

## PUMPS

## COMPRESSORS

Repairing of compr No2.Change of piston,connecting rod,cylinder, all bearings,valves,piston rings.Crankshaft repaired in Sweden.

## PIPE SYSTEM

- 1.Repairing of sea cooling water system in engine room.Change of flanges.
- 2.Elimination of oil leakage in the car deck hydraulic system.
- 3.Repairing AE 3 exhaust pipe in the funnel.

## BOILER N 2

- 1.Change of shaft seal in fuel oil pump.
- 2.Repairing burner and change of solenoid valve.

## MISCELLANEOUS

- 1.Cleaning spare ME cyl. covers,grinding the valves.
- 2.Change vertical shaft bearings in fuel oil purifier No 1.
- 3.Cleaning the bilges in engine rooms.

*Stoos*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month MAY Year 1993

## AIRCONDITIONING

1. Change of filters on AC No 1-19B. Washing filters.
2. Cleaning of air coolers and heaters in AC 1-3.
3. Repairing and adjustment of thermal oil valves. -4 pcs.

## ACCOMMODATIONFANS

1. Repairing and adjustment of thermoregulators in pass. cabins.
2. Repairing of pass. cabins air mixers. -5 pcs.

## KITCHEN

1. Maintenance works of ice generators, cooling tables, refrigerators in restaurants, cafeteria, provision store.
2. Repairing the shells and barrows.
3. Repairing of disc washing machine.

## HOTEL

## SEWAGESYSTEM

1. Cleaning sewage system pipes with Gamazine DPS.
2. Repairing of EVAK-equipment.
3. Cleaning of clogged pipes on sewage and waste water systems.

## MISCELLANEOUS

*L. Veskanen*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month MAY Year 1993

## ELECTRICAL WORKS

1. Restauration of start air compressor N 1 alarm & security diagram testing of air compressor N 2,3.
2. Replacement of cooking boiler's heating elements.
3. Repairing of air temperature regulators of AC-4,6,8.
4. Repairing of coffee machines of night club & Poseidon.
5. Dismantling, repairing of all outside alarm bells.
6. Repairing of three temperature measuring circuits of gear bearings
7. Replacement & repairing of two time relays in MKR console.
8. Replacement of burned coil of locking of cardeck door.
9. Drawing of 2 cables to crew's cabins D6 PS.
10. Replacement of lamps armature in crew's dayroom.
11. Restauration of dry safety system of cooking boilers.
12. Checking of batteries & chargers.
13. Installing of two new syrenes in ER.
14. Restauration of automatic diagram of hot water circ.pumps.
15. Dismantling of burned motor of washing machine D7.
16. Dismantling of burned motor of potato slicer.
17. Replacement of bearings & installing of bow thruster room fans.
18. Replacement of bearings of AC-1 fan motor.
19. Repairing of washing machine deck 8.
20. Revision, tightening etc. of EGR consoles.
21. Revision, tightening, test of disc washing machines 1,2 in galley.
22. Replacement of current relay of bow hydr.pump N 2.
23. Replacement of inductive switch of stern ramp.
24. Repairing & adjusting of cooling liquid sensor of Emerg.Gener.
25. Adjusting of air shield opening solenoids of Emerg.Gener.
26. Installing of dacing light transformer.
27. Repairing of pass.elevator N 1.
28. Repairing of fire alarm pushbuttons.
29. Cleaning greasing, testing of slicing machine.
30. Repairing, replacing of disc washing machine water pump.
31. Repairing of air shield reducting gear of oil burner.N2.

*Moscar*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month APRIL Year 1993.....

## AIRCONDITIONING

1. Change and cleaning filters of AC N1--19B
2. Repairing and cleaning the AC unit in computer-room.
3. Elimination of freon leakage in engine control room AC.

## ACCOMMODATION FANS

1. Repairing of pass. cabins air mixers, change broken parts. 3 cabs.
2. Change thermoregulators in pass. cabins. 4 pcs.

## KITCHEN

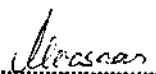
1. Repairing of milk-cooler, elimination of leakage.
2. Cleaning of ice-generator.
3. Installation of kitchen equipment, pipeline works.

## HOTEL

## SEWAGESYSTEM

1. Cleaning of sewage plant N1
2. Repairing the EVAK-equipment.
3. Cleaning of blocked pipes.

## MISCELLANEOUS

  
.....  
CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month APRIL Year 1993

## MAIN ENGINE

1. Main engines N1&3. Change of connecting rod big end bearings upper halves. Cyl. N1-8.
2. Main engine N3, cyl. N4. Piston overhaul. Change of pisto, piston rings, cyl. cover. Cleaning of cyl. cover, grinding valves.
3. Main engine N4. Change of charging air turbine. Cleaning the spare turbine change of bearings.

## AUXILIARE ENGINE

1. Overhaul AE N3. Replacement of pistons, piston rings, cyl. liners, connecting rods, main bearings, big end bearings, cyl. covers.
2. Overhaul spare cyl. covers, taken from AE3, cleaning, grinding valves

## PUMPS

1. Repairing of main engine sea water pump. Change of impeller, shaft, and shaft seals.
2. Repairing of circulation pump of warm washing water.
3. Repairing of swimming pool circulation pump.

## COMPRESSORS

## PIPE SYSTEM

1. Repairing by welding sea water pipelines in eng. rooms.
2. Change of leaking waste water pipes on the ceiling of car-deck.
3. Change pipes of water system on deck N5.
4. Cleaning the clogged pipes in sewage system.

## BOILER N2

1. Cleaning the boiler and fuel oil burner.

## MISCELLANEOUS

1. Repairing the cover of warm water heater, cleaning the heater.
2. Repairing of thermostatic valve in fresh cooling water system of main engine N2.
3. Cleaning the bilges in engine rooms, washing works in engine rooms.

*M. S. Thulin*

CHIEF ENGINEER

# NORDSTRÖM & THULIN AB

WORKS MS ESTONIA Month APRIL Year 1993

## Works made in april (el. side)

1. Adjustment of floor switches of lifts NN 1,2, tightening of contacts of all lifts, replacement of one floor switch of lift N2.
2. Checking up, refilling of all batteries, checking of chargers.
3. Restoration of floor & kila's switches of hydraulic lift.
4. Replacement of 3 coal brushes of bow thruster N 1.
5. Cleaning of main distributing board, emergency DB, k-DB.
6. Restoration of bilge water separator heaters & p.p.m.-meter.
7. Replacement of bearings of ME preheater water pump.
8. Adjustment of idle voltage of gen. N2.
9. Change of capacitor of computer room's air conditioner.
10. Replacement of magn. valve of gen. N1 starting syst.
11. Repairing of lift N1 door closing motor & mechanism.
12. Replacement of bearings of bow thruster room fan.
13. Replacement of fuel gas detecting sensor.
14. Checking of overhead projectors, tightening, cleaning, grading.
15. Replacement of generator N2 breaker contacts.
16. Control & adjustment of alarm bells inside.
17. Replacement of floor switches of galley lift.
18. Cleaning of NC panel of sewage treatment plant.
19. Cleaning, tightening of contacts of ME control panels in eng. room.
20. Repair of cooking boilers in the galley.

*Moosca*

CHIEF ENGINEER

SUPPLEMENT No. 231

Extracts from docking specification and quotation 25.9.1992 for Wasa  
Line re MV WASA KING's docking 1993.



EXCL X

1/5

M/S Wasa King  
Dockningsspecifikation 1993

Particulars

Passengership

LOA 157.00

LPP 137.40

B.extr. 24.2

Draft 5.55

Bureau Veritas

DWT 3345

Gross 15598

Net 8394

Allmän del

- 01 Indockning, utdockning, 1 dag dockstående
- 02 Dockstående / dygn
- 03 Anslutning av elkablar  
Leverans av el 1200 A, 380 V, 50 Hz
- 04 Anslutning av brandslangar
- 05 Anslutning av dricksvatten  
Leverans av dricksvatten
- 06 Anslutning av telefon  
Samtalsavgifter
- 07 Brandvakt
- 08 Avfall

## Övrigt

- 70.22 Akterramperna, skalkningarna service samt förstärkningar
- 71.22 Akterramperna, gångjärn överhalas, nya bussningar.
- 72.22 Förramp och Visir skalkningar överses förstärkes.
- 73.22 Förramp, gångjärn överhalas eventuellt nya bussningar.
- 74.22 Visir 15 m och ramp-packningar 10 m förnyas
- 75.22 Vajerbyten på bildäckshyllorna

.TD

To: HAASANLAIVAT OY

Date: 25.9.1992

No: 961-3260199

Ref:

Attn:

No. of pages including cover sheet:

From:

16

IF NOT CORRECTLY RECEIVED PLEASE REPORT IMMEDIATELY

Subject: M/S "WASA KING"

OHEISENA LÄHETÄMME TYÖ-  
KAPPALEEN TARJOUKSESTAMME  
KOSKIEK 18.9 PÄIVÄTTYÄ ERITTELYÄ  
ALUKSELTA SUORITETTAVISTA TÖISTÄ  
TAMMIKUUSSA -93.  
PUHTAUSKIRJOITETUN TARJOUKSEN  
LÄHETÄMME VIIKKO 40 ALUSSA.

YSTÄVÄLLISIN TERVEISIN

TURUN KONJAKISTELAKKA OY  
MYYNTIOSASTO

EI TARVITS E LÄHETÄÄ  
PUHTAUSKIRJOITETTUA  
pub. kesk. 25.9  
klo 11.40  
KÄYNNIN KOKOUKSEN  
KOKOUKSESSA  
KÄYNNIN!

25. 9. 1992

ERCLY

TELAKKANT  
TURUSSA

M/15 "VAASA KING"

1.	In och utdockningen inkl. en dag i docka	
1.1.	Omändring av dockningsbådden	5,-
2.	Stående i docka, dockshyra/dygn	2,-/dygn
3.	Anslutning av el-kabel	,-/anslutning
3.1.	Leverans av el-ström	0,60/kWh
	1200 A, 18000,- KOSI <del>NAANPALKSSA</del>	
4.	Anslutning av brandslang	,-/anslutning
5.	Anslutning av dricksvatten	,-/anslutning
5.1.	Leverans av dricksvatten	11,-/m <sup>3</sup>
6.	Anslutning av telefon	,-/kabel
6.1.	Samtalsavgifter	0,65/impuls
7.	Brandvakt	,-/8 h skift
8.	Borttransport av avfall 150 l	,-/gång
9.	Anslutning av kylvatten för hjälp- motorer	,-/anslutning
9.1.	Leverans av kylvatten	,-/dygn
10.	Anslutning av tryckluft	,-/anslutning
10.1.	Leverans av tryckluft 7 kp/cm <sup>2</sup>	,-/ arbetsskift

58.26 Röret mellan fettavskiljningstanken i spritförrådet och gråvattentanken i separatorummet förnyas. Diam 110 mm, L 12 m, 4 st krökar 90° samt flänsar.

INDIKATIO HINTA

59.26 Bilgevattentank no 33, 22 m<sup>3</sup>, rengöring.

60.26 Smutsoljetank no 42, 13 m<sup>3</sup>, rengöring.  
JÄTE ÖLJYN HÄVITYS FAKTAN MUKKAN

61.26 Sludgetank no 44, 25 m<sup>3</sup>, rengöring.

HINTA TARKASTUKSEN JÄLKEEN

62.26 HJM Avgaspannor 4 st, Sanea 65 m<sup>2</sup> reparation, förnyande av bottnet.

INDIKATIO HINTA

63.26 Hisschakten på 2 provianthissar, skotten riktas, avståndet för stort till hissorgen

HINNOSTELLAAN KUN TYON  
LAJUUUS ON MÄÄRITELTY

64.26 Flexibel tryckslang med stålväv, diam 50 mm, längd 200 m, 150°C, 8 st insättes i HUM H.O.fuel tryck och returrör.

65.26 Expansionstankar i HUM kylsystem rengöres och målas 2 st x 1,5 m<sup>3</sup>.

Övrigt

70.22 Akterramperna, skalkningarna service samt förstärkningar

71.22 Akterramperna, gångjärn överhalas, nya bussningar.

72.22 Förramp och Visir skalkningar överses förstärkes.

HINTA TARKASTUKSEN JÄLKEEN

73.22 Förramp, gångjärn överhalas eventuellt nya bussningar.

74.22 Visir 15 m och ramp-packningar 10 m förnyas

75.22 Vajerbyten på bildäckshyllorna (12 VAJERIA)