

SUPPLEMENT No. 526

Lehtola Kari:

Damage to the Bow of the SILJA EUROPA at the Time of the Accident
Involving the ESTONIA 28.9.1994.

THE JOINT ACCIDENT INVESTIGATION COMMISSION FOR THE MV ESTONIA

1

PROMEMORIA
20.8.1995/FIN

DAMAGE TO THE BOW OF THE SILJA EUROPA AT THE TIME OF THE ACCIDENT INVOLVING THE MS ESTONIA

1. The events

The Silja Europa departed from Helsinki for Stockholm on 27 September 1994 at 18.00. The following night she received the mayday message from the Estonia and proceeded immediately to the scene of the accident. Soon after the accident the captain of the Silja Europa, captain Esa Mäkelä was appointed the on-scene commander (OSC). The Silja Europa remained at the scene of the accident engaged in the rescue until 18.30 on 28 September 1994, at which time she was allowed to continue her voyage to Stockholm. The Silja Europa arrived at Stockholm on 29 September 1994 at 05.30.

Immediately upon arrival at Stockholm, it was noted that the door on the BB side of the bow of the vessel opened only about 40 cm. The vessel is equipped with so-called butterfly doors. The vessel was turned around and the vehicles were unloaded through the stern doors.

A Bureau Veritas inspector noted the following damage to the bow (the numbering refers to the numbers noted in the photograph and the drawings):

1. buckling of the side and bottom plates of the shaft of the door hinge
2. buckling of rib no. 218 (reinforced after the sea trial)
3. crack in the fastening of the guide roller on the top of the door
4. buckling of rib no. 219 (may be related to an earlier incident)
5. this illustrates how the sides of the door meet
6. buckling of the longitudinal web (also this is probably related to an earlier incident)

In addition to the above, several smaller deformations were noted.

The vessel was found to be seaworthy although the door could not be used before it was repaired.

The damage was repaired within a few days, without taking the vessel out of traffic.

It has not been possible to give an exact time for when the damage occurred.

2. The speed of the Silja Europa on 27-28 September 1995

The track recorder, which is part of the electronic navigation system of the Silja Europa, has data on the speed of the vessel on the night of the accident involving the Mv Estonia. During the evening, the vessel proceeded at a greater speed than normal since it was known that the wind would grow stronger and the sea become rougher during the night, when the speed would have to be decreased. Accordingly, the speed was gradually decreased, as shown by the following:

<i>Time</i>	<i>Speed</i>
00.25	14,8
00.47	13,8
00.58	12,4
01.02	12,0
01.09	11,5
01.14	11,5
01.20	10,9

At the time she received the mayday message from the Estonia, the Silja Europa was proceeding at a speed of about 9,5 knots. On turning towards the reported location of the Estonia, she used an "emergency" speed that was at most 12,5 knots and at the least 8,7 knots.

3. Pitching of the Silja Europa

When the drafter of this memorandum interviewed sea captain Mäkelä on 2 August 1995, he stated that on her voyage from Helsinki to the scene of the accident involving the Ms Estonia,

the Silja Europa pitched unusually strongly. Waves washed over the forecastle. Mr. Harry Holmberg, a Finnish rescue instructor, has taken a video of the events at sea immediately at dawn of 28 September 1994. This clearly shows the waves hitting against the bow of the Silja Europa.

APPENDICES

<i>No.</i>	<i>Language</i>	<i>Document</i>
1	FIN	Damage to the bow door, 29 September 1994. The report of the chief engineer of the Silja Europa to the shipping company
2		Six photographs
3	FIN, ENG, GER	Three drawings
4	ENG	Printout from the track recorder on the Silja Europa regarding the speed of the vessel on the night of the accident involving the Estonia
5		Printout from the track recorder on the Silja Europa regarding the position of the vessel on the night of the accident involving the Estonia
6	FIN	Graphic speed diagram regarding the Silja Europa, prepared by captain Esa Mäkelä on the basis of the printouts from the track recorder



Keulaportin vauriot 29.09.1994

Yritettäessä avata keulaporttia aamulla Tukholmaan tulon jälkeen, havaittiin että portin SB puoli aukeni normaalisti mutta BB puoli liikkui ainoastaan n. 40 cm.

Tarkoitus oli ensin avata puolikas väkisin, mutta onneksi emme tehneet sitä. Emme olisi saaneet portin puolikasta enää tämän jälkeen kiinni.

Kun portti yritettiin avata, se otti kiinni kohtiin 7 ja 8 niin kovasti ettei hydraulikka jaksanut.

Alus käännettiin ja lastin purku tapahtui peräportin kautta.

Portti suljettiin ja taljoilla portin yläpäästä auttamalla saatiin lukitukset kiinni.

Ilmoitettu asiasta Harri Kulovaaralle n. klo 5 sekä Erik Schalinille n. klo 5.30.

Bureau Veritaksen tarkastaja Lars Olof Ålander tuli paikalle n. klo 6, tutki vauriot ja antoi luvan lähteä merelle. Porttia ei saa kuitenkaan käyttää ennen korjausta. Visa N:o 7.

Löydetyt vauriot:

- Kuva ja kohta 1: Saranavarren sivu- sekä pohjalevyjen lommahtamiset.
- Kuva ja kohta 2: Tukikaaren # 218 lommahdus. (Vahvistettu merikoeajon jälkeen.)
- Kuva ja kohta 3: Portin yläpään ohjausrullan kiinnityksen murtuminen.
- Kuva ja kohta 4: Tukikaaren #209 lommahtaminen. (Saattaa olla vanhempi juttu.)
- Kuva ja kohta 5: Osoittaa vain miten portin puolikkaat ovat vastakkain.
- Kuva ja kohta 6: Lommahdus pitkittäisjäykkäajässä. (Tämäkin on varmasti vanha.)

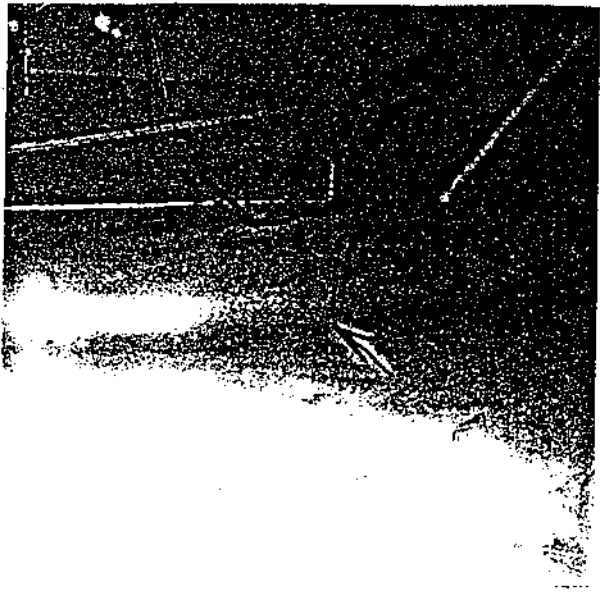
Näiden lisäksi joukko pienempiä muodonmuutoksi.

(Alus oli merikoeajallo erittäin pahassa ilmassa ja tällöin tuli vaurioita samalle alueelle melko paljon. Tällöin tehtiin vahvistuksia ja korjauksia.)

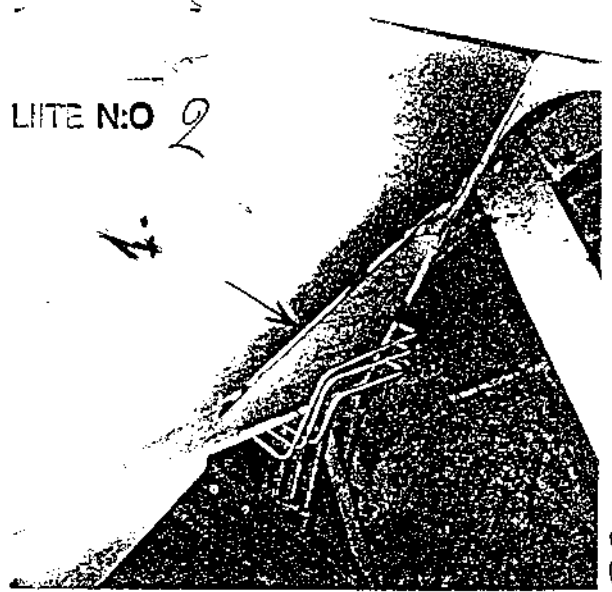
Oltu yhteydessä MacGregor Naviren Tarmo Mäkeen sekä Pyökäriin. He toimittavat 3 korjausmiestä alukselle illalla 29.9 n. klo 22.30.

Samalla tulevat paikalle Bureau Veritaksen edusta Curt-Olof Eklund sekä käyttötarkastaja Erik Schalin.


SEPPÖ MATTILA
Chief Engineer
m/s SILJA EUROPA



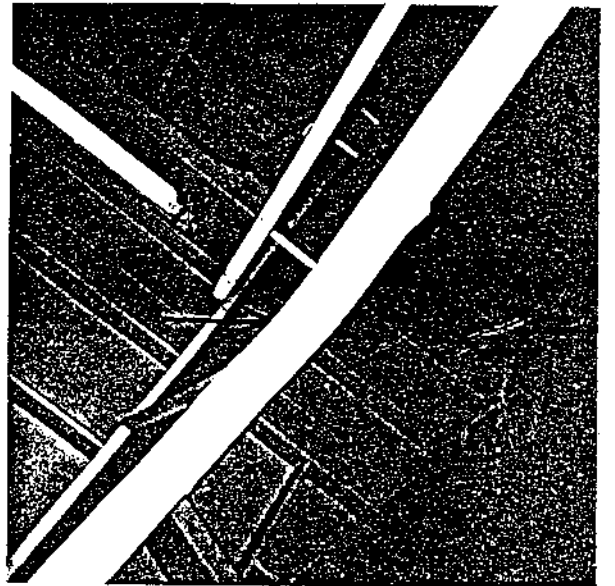
BB tubikgeri #218
29.9-94 2.



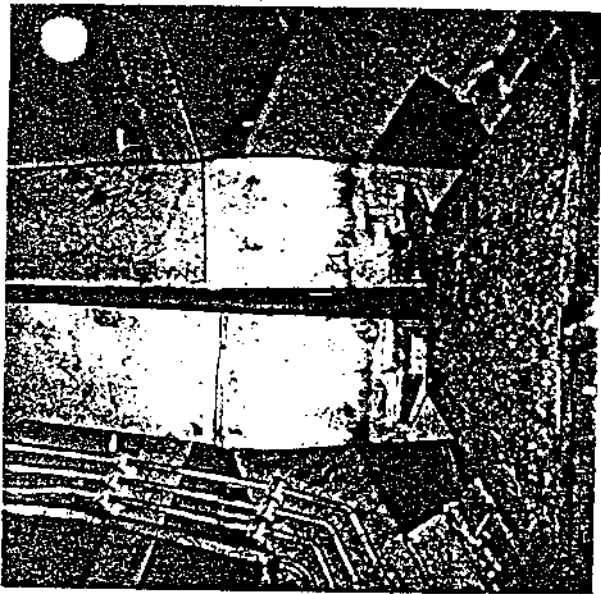
RR en...



BB ohjaustrissa
29.9-94 3.



209 919



29.9-94 5.



(

M/S Silja Europa Track Recording: 01270994.GPS 20.10.1994
 Ship relative to track history

Nr	Time UTC hh:mm:ss	Nav	Mde	Latitude	Longitude	SOG kn	COG deg	HDG deg	Drift deg
T01	20:14:56	2D	DGPS	N 59:39.428	E 23: 9.557	19.0	260.0	254.5	< 5.5
T02	20:23:52	2D	DGPS	N 59:38.876	E 23: 4.149	19.0	257.0	253.3	< 3.7
T03	20:43:18	2D	DGPS	N 59:37.642	E 22:52.582	18.1	258.2	256.2	< 2.0
T04	20:54:16	2D	DGPS	N 59:36.955	E 22:46.270	18.2	258.9	257.3	< 1.6
T05	21:04:02	2D	DGPS	N 59:36.342	E 22:40.703	17.5	257.2	255.2	< 2.0
T06	21:13:46	2D	DGPS	N 59:35.732	E 22:35.238	17.5	257.2	255.0	< 2.2
T07	21:21:44	2D	DGPS	N 59:35.280	E 22:30.802	16.8	258.7	256.6	< 2.1
T08	21:28:58	2D	DGPS	N 59:34.898	E 22:26.855	16.3	261.1	257.3	< 3.8
T09	21:36:08	2D	DGPS	N 59:34.536	E 22:23.050	16.3	258.3	255.3	< 3.0
T10	21:47:34	2D	DGPS	N 59:33.945	E 22:16.957	16.0	258.8	255.9	< 2.9
T11	21:54:46	2D	DGPS	N 59:33.585	E 22:13.197	15.7	258.6	255.8	< 2.8
T12	21:59:16	2D	DGPS	N 59:33.353	E 22:10.846	15.7	258.6	253.6	< 5.0
T13	22:12:32	2D	DGPS	N 59:32.671	E 22: 4.070	15.0	255.8	255.3	< .5
T14	22:25:10	2D	DGPS	N 59:32.023	E 21:57.674	14.8	259.4	255.3	< 4.1
T15	22:31:54	2D	DGPS	N 59:31.687	E 21:54.393	14.6	260.8	254.4	< 6.4
T16	22:44:28	2D	DGPS	N 59:31.266	E 21:48.051	14.8	274.5	272.6	< 1.9
T17	22:47:28	2D	DGPS	N 59:31.351	E 21:46.579	13.8	274.0	273.0	< 1.0
T18	22:58:50	2D	DGPS	N 59:31.683	E 21:41.077	12.4	279.9	275.4	< 4.5
T19	23:02:16	2D	DGPS	N 59:31.771	E 21:39.635	12.0	277.5	272.5	< 5.0
T20	23:09:48	2D	DGPS	N 59:31.974	E 21:36.473	11.5	275.8	271.5	< 4.3
T21	23:14:04	2D	DGPS	N 59:32.061	E 21:34.790	11.5	273.9	268.9	< 5.0
T22	23:20:46	2D	DGPS	N 59:32.196	E 21:32.120	10.9	273.1	272.3	< .8
T23	23:26:30	2D	DGPS	N 59:32.346	E 21:29.817	9.4	277.1	267.4	< 9.7
T24	23:30:10	2D	DGPS	N 59:32.417	E 21:28.626	9.7	273.4	265.7	< 7.7
T25	23:36:38	2D	DGPS	N 59:32.521	E 21:26.487	8.7	271.3	263.1	< 8.2
T26	23:45:48	2D	DGPS	N 59:31.870	E 21:23.985	12.5	187.1	197.7	> 10.6
T27	0:06:18	2D	DGPS	N 59:29.227	E 21:28.560	9.5	149.2	165.9	> 16.7
T28	0:20:40	2D	DGPS	N 59:27.244	E 21:31.196	10.8	118.0	141.9	> 23.9
T29	0:45:48	2D	DGPS	N 59:24.789	E 21:36.732	7.4	109.9	135.8	> 25.9
T30	1:01:20	2D	DGPS	N 59:24.227	E 21:39.427	2.7	69.0	146.1	> 77.1

SCALE: 1: 743170

60:00

59:51

59:38

59:23

LITE N: 0 57

T02 T01

T03

T04

T05

T06

T07

T08

T09

T10

T11

T12

T13

T14

T15

T16

T22 T20 T198 T176

T20 T21

T27

T28

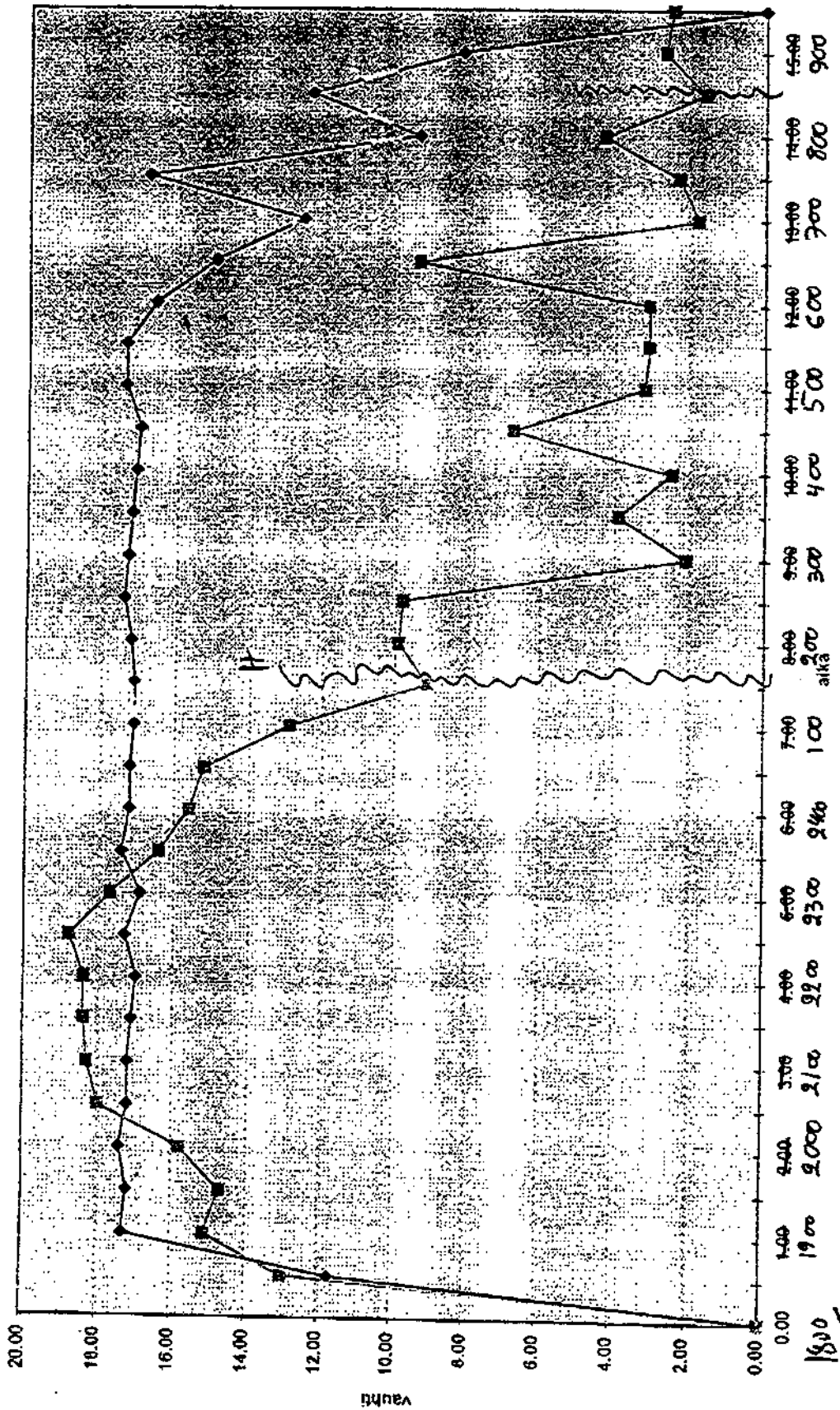
T29 T30



LIITE N:O 6

Sheet1 Chart 3

Vahtikäyrät Estonia/normaali



norm.
maikka.
Estonia

18.00
28/9