

# Statement Carl overberg

Original

Enclosure 12.4.2.151

Statement

Carl Övberg, alias Kadir Kaymaz, states:

I was born on 18.06.52 and am living at Sundbyberg / Sweden - P.O. Box 7127  
17207, phone +46-70-732 53 31, Fax +46-8-760 86 24.

I have studied jurisprudence in Turkey, but am lacking 2 years of practice to be able to work as a lawyer. In 1980 I immigrated to Sweden and took the Swedish citizenship in 1986 and changed my name from Kadir Kaymaz to Carl Övberg. I was working as a truck driver, driving my own truck and went already with my truck to Tallinn with the "Nord Estonia", the ferry engaged in the Stockholm-Tallinn service before the "Estonia".

Soon after the "Estonia" had taken over this service I made my first trip on this ferry followed by many more. In total I have made 40 trips. At the beginning there were many Swedish crew members on board in addition to the Estonian crew, the number of Swedes, however, became less and less and I am not sure whether there were any on the last voyage. I went a few times by truck, but more often with Volvo personal cars which I sold in Estonia and came back alone. Normally I was staying in cabins above the car deck and only when I booked rather late I had to take a cabin below the car deck on the 1st deck. I keep a logbook where I register what I am doing day by day and where I am, but the one covering 1994 sank with the "Estonia". I have, however, saved my passport and am thus able to state the exact number of voyages I made with the "Estonia" once the respective stamps have been made visible.

When looking at the pictures on Enclosure No. 1 - I recognise these to show the car deck and the bow ramp with the control panel at port side. Several times I stood with Volvo cars right behind the bow ramp, because I drove on board early at Stockholm to be one of the first to leave the ferry at Tallinn.

When I was waiting in my car on the car deck on one voyage I noticed that there was a video camera mounted underneath the upper deck at port side forward which was looking aft. The approximate position is indicated by arrow 3 on picture no. 1 on Enclosure no. 1. I am aware that the ferry's car deck

monitory system comprised 4 video cameras located forward, aft and at both sides of the centre casing, which, however, had nothing to do with the above-mentioned camera. This is also known to other passengers.

Sometimes my car was also on the hanging deck very much forward. The last time my car got stuck (the left front part of the bumper was caught by a pipe which was subsequently freed). I have also been down on the car deck at sea several times to take out something from the car or to look whether nothing was touching it. The car deck doors were never locked, but easy to open by just pressing the button. I also went down in the night and the doors were also unlocked. Only after the "Estonia" casualty were the doors on "Mare Balticum" locked at sea.

During my many stays on the car deck I have made numerous observations which, in my opinion and experience, are not in conformity with the normal operating practice on board a modern car/passenger ferry. These are, to the best of my recollection:

- (a) As stated before, the car deck doors were not locked at sea (although it was said by the crew that they were), thus I was able to go down onto the car deck at sea, also at night (although it was strictly forbidden). I did this frequently to bring something to my car, or take something out, or just to check the car in bad weather to make sure that nothing was touching it. The car was sometimes secured by wooden wedges being put in front and behind the wheels, the trucks were sometimes secured by belts, the trailers very often not at all.
- (b) I once or twice came down to the car deck at sea during normal weather/seastate conditions, opened the door in the centre casing and saw at once that there was a lot of water on the car deck, I would estimate about 5 cm. This was the 2nd door from forward, i.e. in the forward third of the car deck. This was on voyage from Stockholm to Tallinn, because vice versa I had no reason to go to the car deck as I sold the cars in Tallinn.

- (c) In front of the centre casing there were always one or two garbage containers standing into which the crew put empty bottles, cartons and the like. In addition, I noticed sometimes these containers also standing at port and starboard sides in the aft part of the car deck. I have drawn the position into a sketch of the car deck attached as Enclosure no. 2. As far as I remember these containers were never secured and very often caused concern to me when my car was standing close to them. The port one is visible on picture 1 of Enclosure no. 1. Arrow 2 is pointing to it.
- (d) When I was down on the car deck at night, I have several times seen the flashing light of welding being performed in the forward part of the car deck near or at the bow ramp.
- (e) I have actually seen crew members working at the bow ramp many times by hammering, welding or cutting (burning). I have seen the gas bottles and considered it to be very dangerous. As I am quite familiar with the way the crews from ex Eastern Block countries work, I was, however, not too surprised.
- (f) I also remember having heard similar hydraulic noises from forward at sea the same, as I heard during the night of the catastrophe, but not as long lasting as during that night.
- (g) It was clearly visible that the bow ramp was severely misaligned respectively bent. In open condition the port side was much lower compared to the starboard side. The bow ramp could not be opened in one go, but had to be raised/lowered several times before it was finally down.  
Before the ramp was lowered down completely to the quay two crew members jumped on the quay and rolled one or two rope coils underneath the starboard side of the ramp, which was still 30-40 cm above the quay when the port side was already resting on it. I remember also to have

seen that wooden pallets were placed underneath the starboard side of the bow ramp instead of the rope coils, as visible on the picture attached as Enclosure no. 3 (arrow). Such a pallet can also be seen on the large photo attached as Enclosure no. 4 (arrow).

- (h) I am also of the opinion that, at least during the last months before the catastrophe, the bow ramp could not be closed completely anymore, because several times I observed from my position at the fore part of the car deck that light was falling onto the car deck as soon as the visor began to open, i.e. before the bow ramp itself was even moved. This, in my opinion, is only possible if the bow ramp was already open to a certain extent when the visor opened. The light came in as shown on the photo on Enclosure no. 5 at the upper port side. The whole ramp was badly misaligned, in particular the port side looked very bad, whilst the starboard side looked quite in order. Once I saw a crew member standing on a wooden pallet which was lifted up by a forklift standing behind the closed bow ramp at port side. The man was lifted up to a position just underneath what I believe was the upper bolt. After some hammering to the area where the bolt was located the man was lowered down to the car deck again.
- (i) When I was sitting in my car in a position close behind the bow ramp waiting for the ramp to open, I remember having frequently seen crew members pulling steel plates across the gap between the open bow ramp and the car deck. I know that this gap is normally closed by steel flaps, as visible on the photo on Enclosure no. 5 (red arrow "flaps"), but these had been dismounted with certainty at the port side. There were now holes in the flaps on both ends into which crew members were putting hooks by means of which they were pulling the flaps across the gap when the ramp was open and to the side before the ramp was closed. The area with missing flaps at the port side of the closed bow ramp can be seen on picture 1 of Enclosure no. 1, where it is indicated by arrow 1.

- (k) I also remember that I have more or less always seen a large number of wooden pallets on the car deck, which were stowed behind the side-houses at both sides, as I have marked on Enclosure No. 2.
- (l) When I was standing with my car close behind the bow ramp I could look into the open control panel located at the port side inner bulkhead behind the bow ramp. I remember that at least during the last months before the catastrophe there were only 1 (one) green and 1 (one) red light visible on the panel. The operator was always an ordinary crew member with boiler suit and walkie-talkie.
- (m) I saw welding and burning several times when the ramp was closed. It was the port side, mainly the lower bolt. There was always a ladder in the vicinity of the bow ramp.
- (n) I do not remember having been on the 7th deck forward upon departure Tallinn, but I was there upon departure from Stockholm when the visor was frequently open.
- (o) I also made a trip with "Estonia" in February/March 1994 when "Estonia" was acting like an icebreaker proceeding at full speed through heavy ice all the time until shortly before arrival. Once she almost stopped due to the very thick ice and then proceeded slowly ahead. The vessel was shaking and vibrating which was felt and heard all over the ship.

On my last trip to Tallinn before the casualty (I missed one sailing) my car was on the hanging deck at starboard side. Thus I could not see what was going on at the ramp and the visor when being opened. I saw, however, crew members working at the bow ramp before it was lowered down. When I drove down the ramp I saw the equipment for either welding or burning (gas bottles) laying at port side near ramp. We had to wait longer than normal, maybe half an hour or more before the bow ramp opened. I remember this clearly, because I had

people waiting for me at the quay who had left before I was from board because it took so long. It could be the time when I saw the visor moving up and down several times before the bow ramp opened combined with banging noises and also hammering (the same banging noises I heard later during the accident).

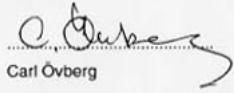
Before the last departure I came on board probably as the last passenger because I had problems getting to the terminal as the whole area around the "Estonia's" berth/terminal was shut off, I believe, by military forces. That's why my friend had difficulties to drop me at the terminal. When I was on board, they pulled back the gangway and the door was closed. This was at about 19.00 hrs. I walked straight to the Reception and asked for a cabin, they said, they didn't have one. The girls were very nervous and behaved quite differently to other voyages. I was asked to come back after 1 hour and I put the luggage into a locker. Finally, at about 20.30 hrs., they gave me cabin 1049, down on the 1st deck. I went down, it was a 2-bed cabin, where I was alone. I went up again and walked around the ship and was also outside on the 7th deck. The weather was not so bad, some wind. Later the vessel took a slight list to starboard. I did not go to the sauna. It was extraordinary that there were no crew members visible, it was like a dead ship. At about 22.30 hrs. I went down to the cabin and to bed where I tried to sleep. After a certain time I suddenly woke up, I believe due to the rather strong noises of rushing water which I could hear from both sides, mainly from the starboard side (not from above and not from below) which alarmed me and, in addition, I heard quite strong metallic banging noises, which had not been there before. I sat up in my bed (was athwartships) and put my feet to the floor, I sat now facing the door, i.e. I was looking aft. I lit a cigarette and listened with concentration to the strange and disturbing noise scenario. After a while I heard suddenly the noise of the starting up of hydraulic pumps, the clicking of valves, and, then, the typical noise of a hydraulic system under load, simultaneously I heard the banging of sledge-hammers. I am uncertain whether these noises came from forward.

The hydraulic-under-load noise faded away and came back again, whilst the sledge-hammers were more or less banging continuously. Both hydraulic and banging of sledge-hammer noises continued for ca. 10-15 minutes whilst the other banging noises, heard then already for some 20-25 minutes, also continued.

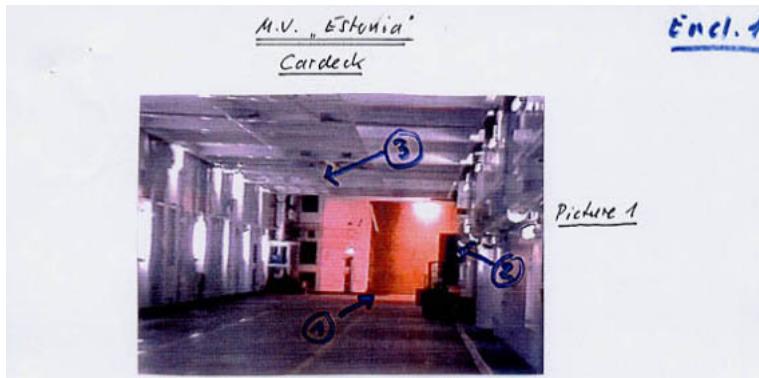
The hydraulic- and sledgehammer-noises stopped with a sharp, short, metallic crash which gave me the impression that something heavy, metallic was broken. After a 'silence' of 30-40 seconds the next really extreme crash followed in connection with an abrupt stopping of the ferry which was so 'sudden' that I was thrown against the front wall of my bed, it was again a short, sharp intense crash as if the ship had struck against something. I jumped out of my bed and put on clothes very quickly when I realised that all engine noises had stopped and the ferry was now making much softer pitch movements. I rushed out of the cabin, turned right towards the stairway, around the aft part of it, through the open WT-door (watertight) towards aft, but turned around after some meters and headed forward, the vessel started to make sideways movements by now (rolling), the door at the port side of the stairway was either open or missing, and I rushed into it, turned right up the stairs when my coat got caught at the beginning of the right handrail, I turned round to my right and looked over my right shoulder out through the door opening into the alleyway (corridor), thereby I saw 2 goose-necks next to the cabin wall, as I have indicated on the drawing attached as Enclosure No. 6, out of these goose-necks water was streaming under great pressure (arrow), I also saw water penetrating the door forward of these goose-necks in the next compartment (arrow), which according to the drawing belonged to a cleaning room. I saw the water running over the floors. Then I had freed myself, whereby I lost my mobile phone which fell down the stairs to 0-deck. I rushed up the stairs. When I was about half way up to the car deck the vessel heeled suddenly and abruptly more than 45°, probably 50° or 60°, to starboard because I was standing on the wall holding to the stair rail. The ferry quickly came back to almost upright position and thereafter slowly heeled more and more to starboard. I continued upwards, i.e. I pulled myself up whilst the ferry was

rolling, i.e. almost uprighted and thereafter heeled to starboard more and more. When I was holding onto the rail in a squatted position during the very wide heel there was an elderly man above me on the same stair, whom I passed on my way up after the ferry had more or less uprighted. My way up is demonstrated on the drawing attached as Enclosure no. 7, whilst the drawing attached as Enclosure no. 8 shows me and the man above me during the excessive heel of the ferry to starboard. After deck 6 it was only possible to walk when the ferry had rolled in the up position and I had to wait and hold myself when she was heeling deeply to starboard, I reached the 7th deck and managed to get out through the forward door, went to the locker with lifevests and opened it, tried to lower the 2nd lifeboat from forward when the lights went out and some came back after a short while, there was one light underneath the port bridge wing which kept burning all the time, otherwise the bridge was totally dark. I was subsequently told that at the moment when the lights went out, the diesel generators shut off due to the heel which must then have been about 45°. The light came back a little later when the emergency generator had started. The bow was raising, whilst the stern was sinking down and the vessel was on her side, I was underneath the bridge and walked down the hull side towards the water just forward of the large letters ESTLINE, I actually walked across the E. It became rather slippery and I took off my shoes, but the seaweed or whatever else was covering the vessel's hull side turned out to be rather sharp.

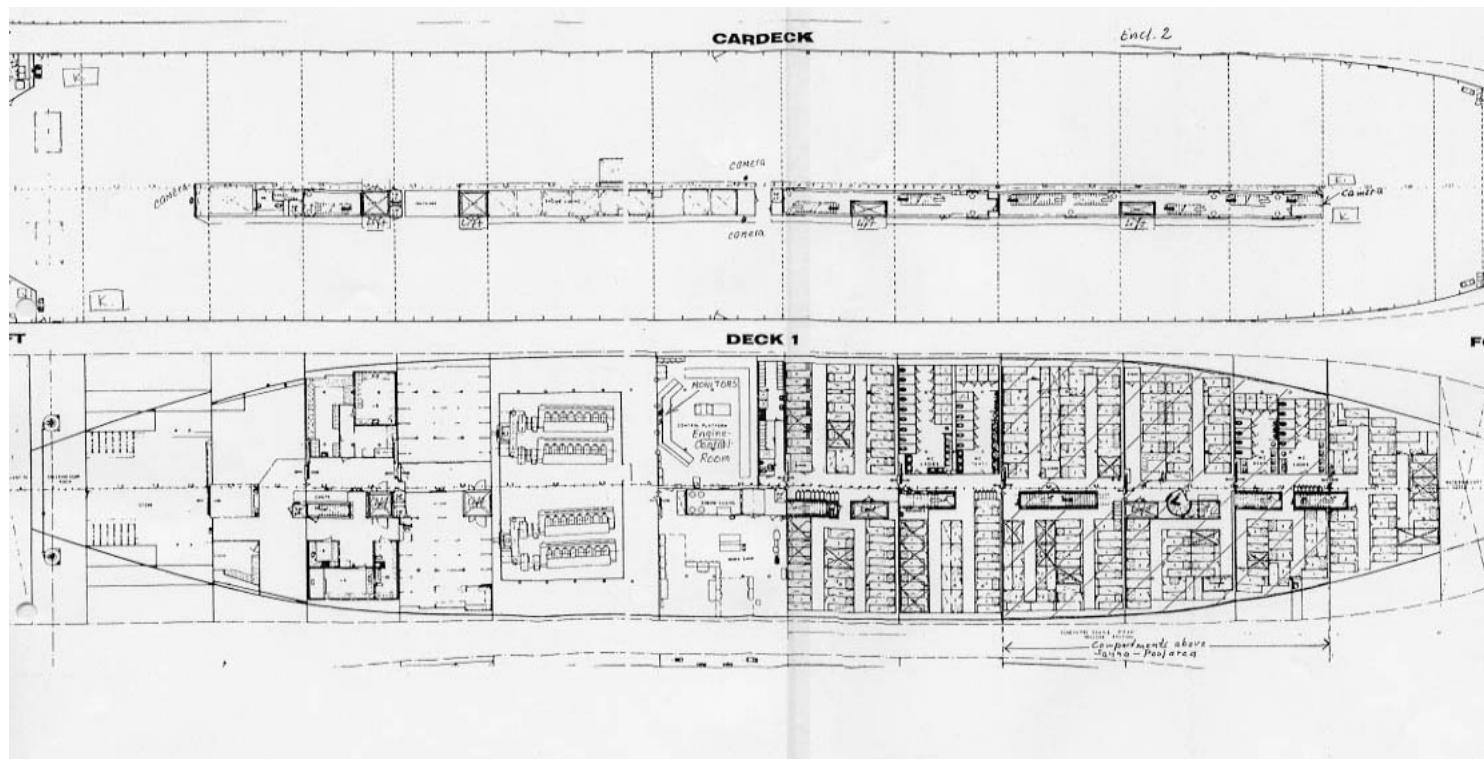
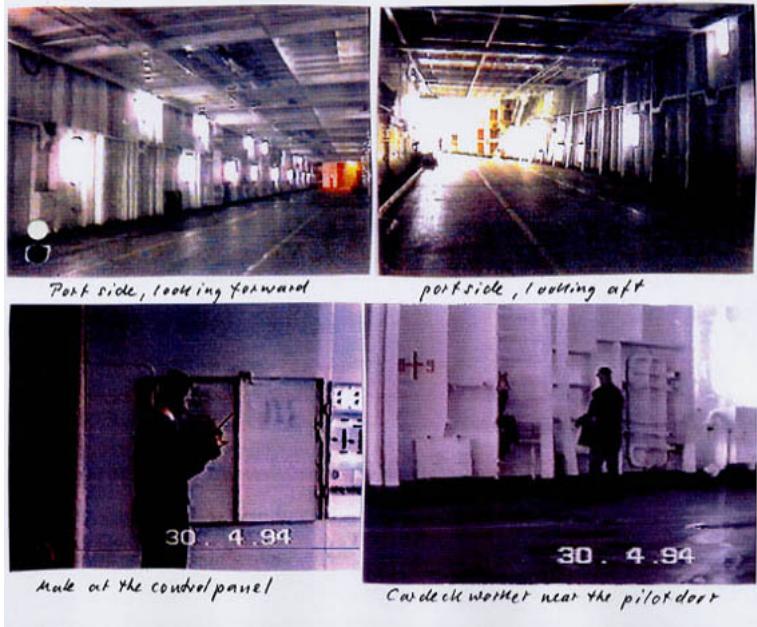
I felt and heard the sound of escaping air and smelled diesel fuel before I heard the sound of the siren, I first believed the vessel would stand on the ground and not sink, however, this was wrong and I finally jumped into the water. I heard lots of people shouting and swam forward, found a rubber raft and grabbed a rope, I pulled myself onto the liferaft, where I spent the next hours together with 3 men and 1 girl until we were picked up by a Finnish helicopter and brought to Hangö.

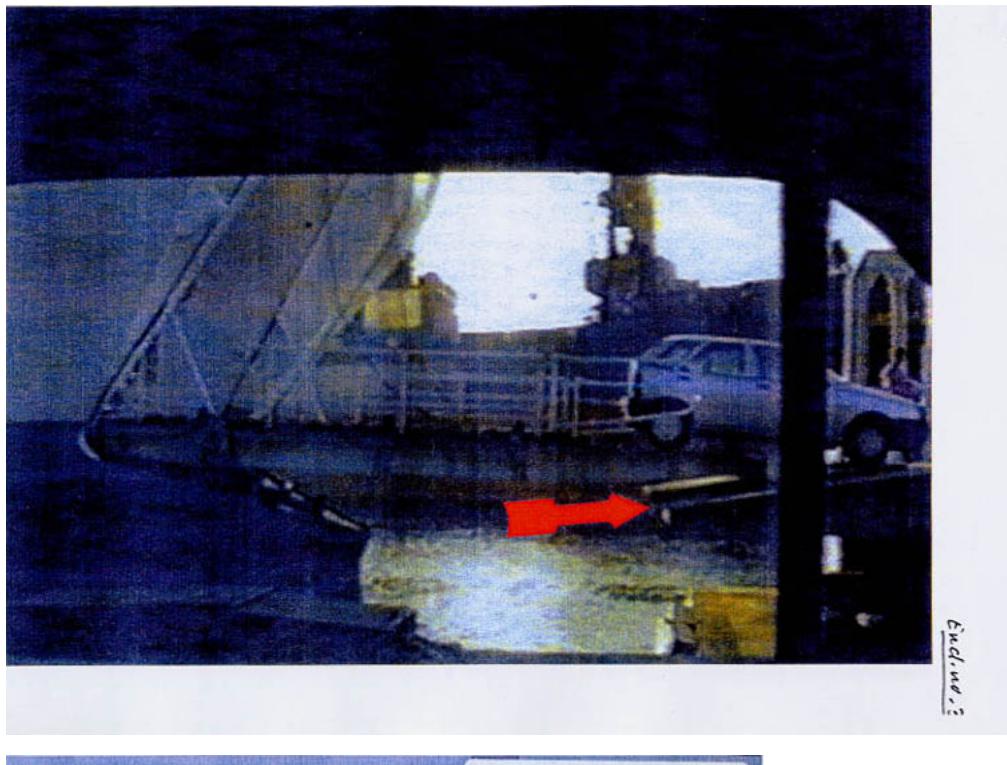
  
Carl Övberg

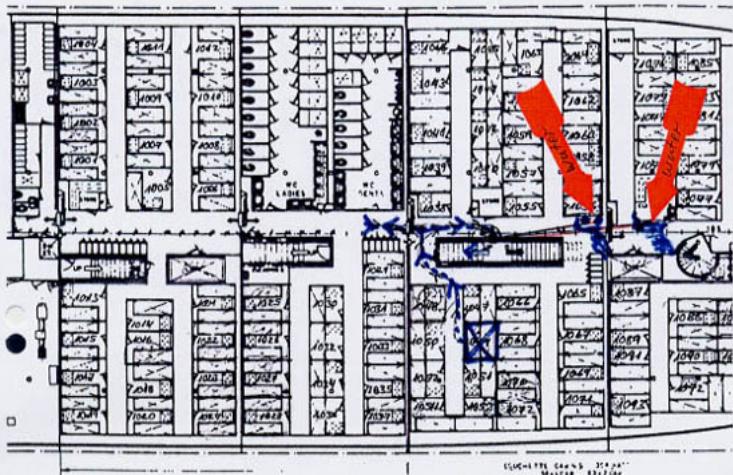
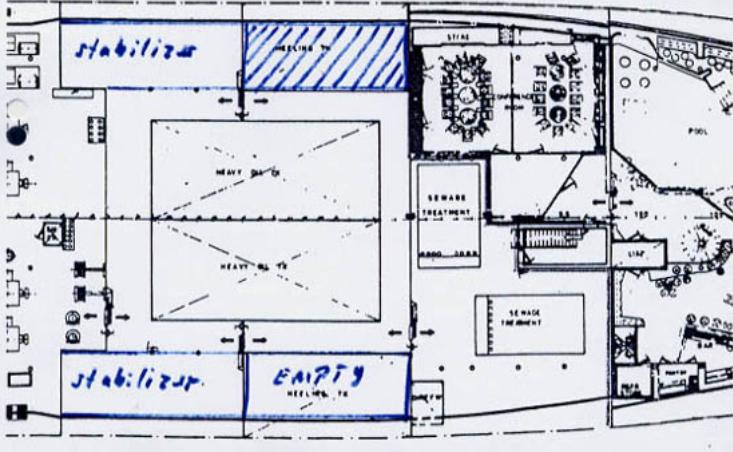
Stockholm, 9.9.97

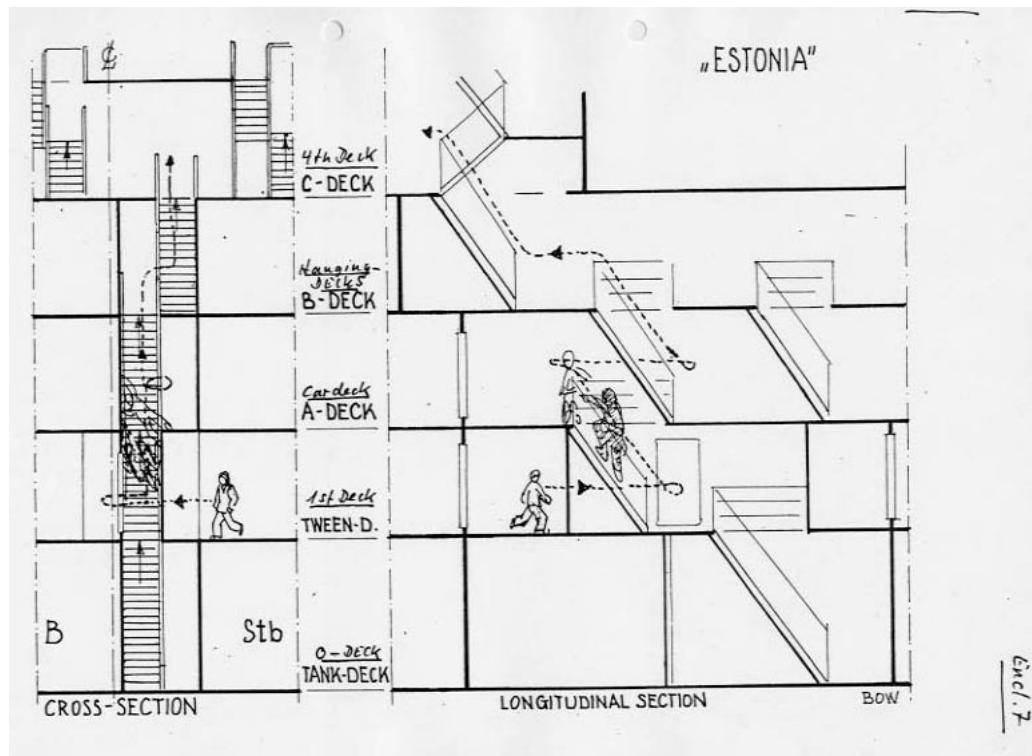
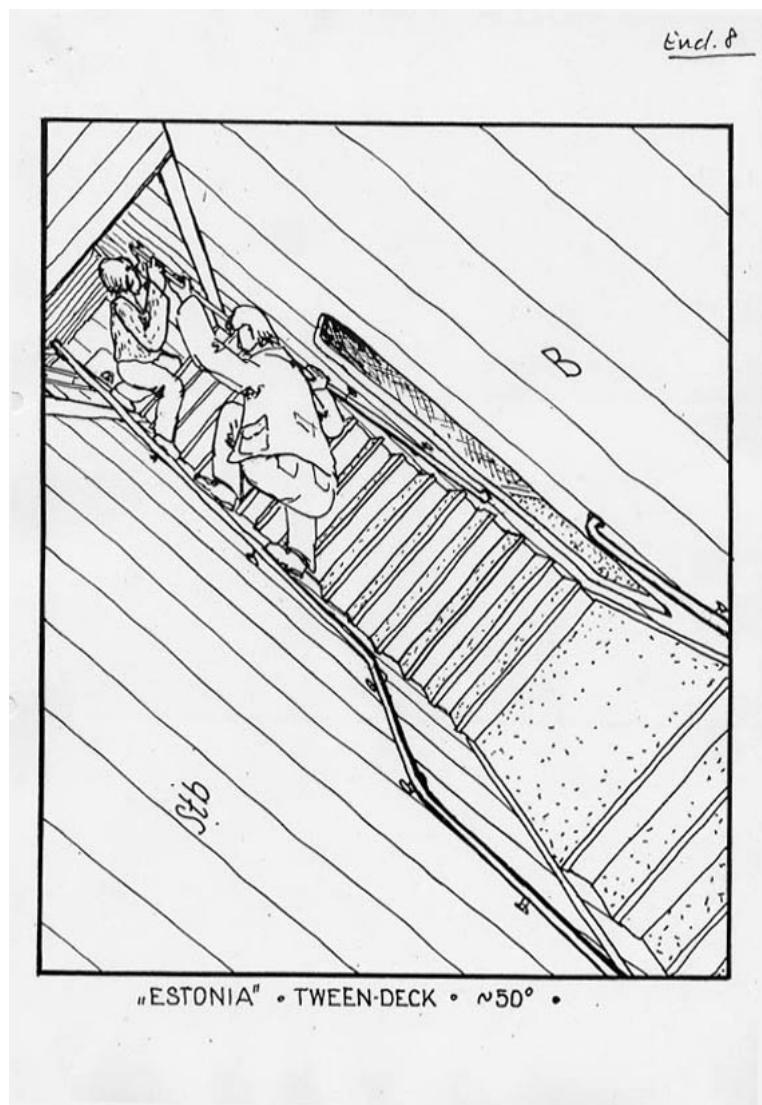


Port forward part with closed bowramp.  
Arrow 1 indicates the missing flaps between ramp/cardeck, which are pulled to the side when the bowramp is closed.  
Arrow 2 indicates the garbage container.



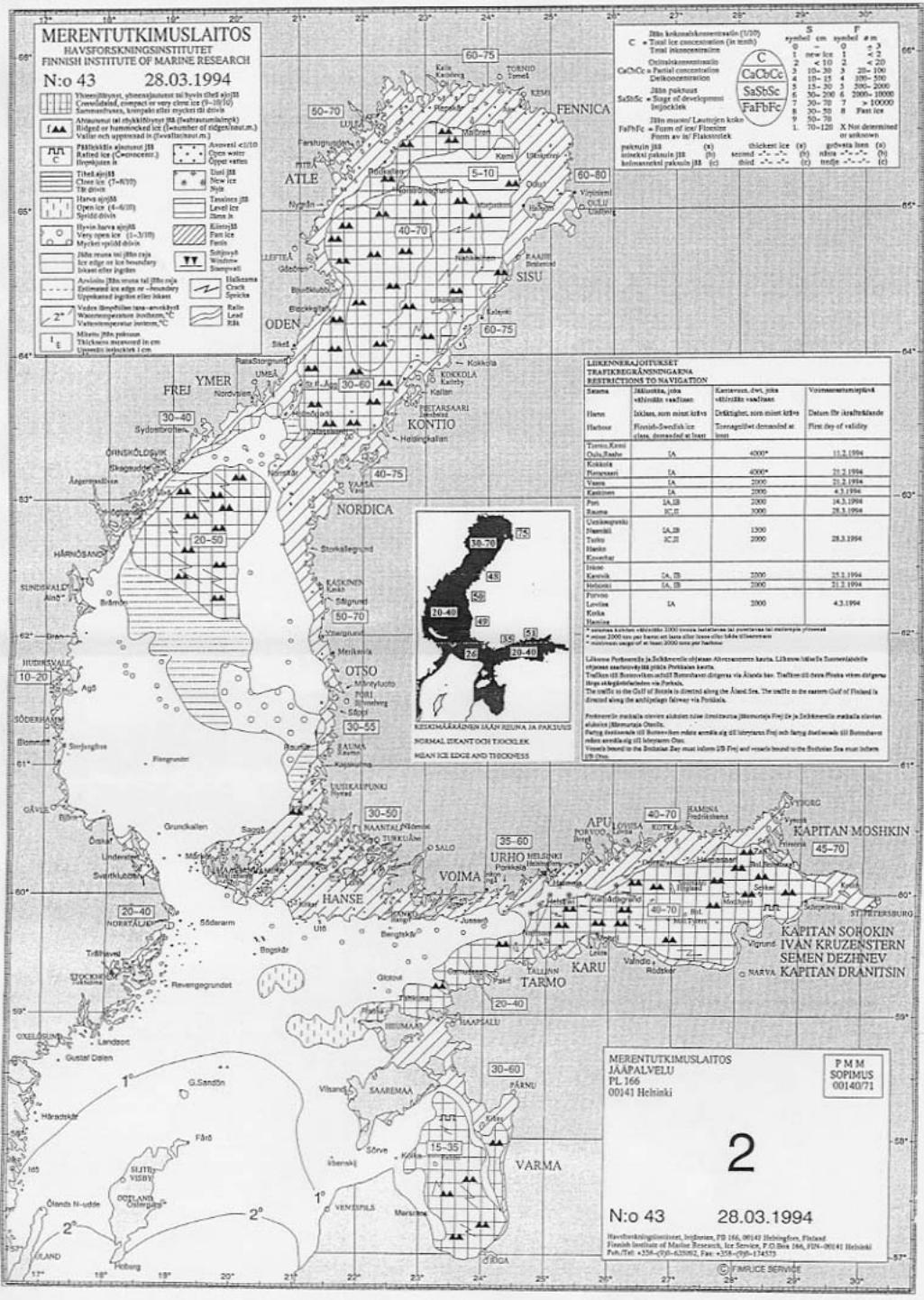


Encl. no. 5Encl. NO. 6**DECK 1****DECK O**

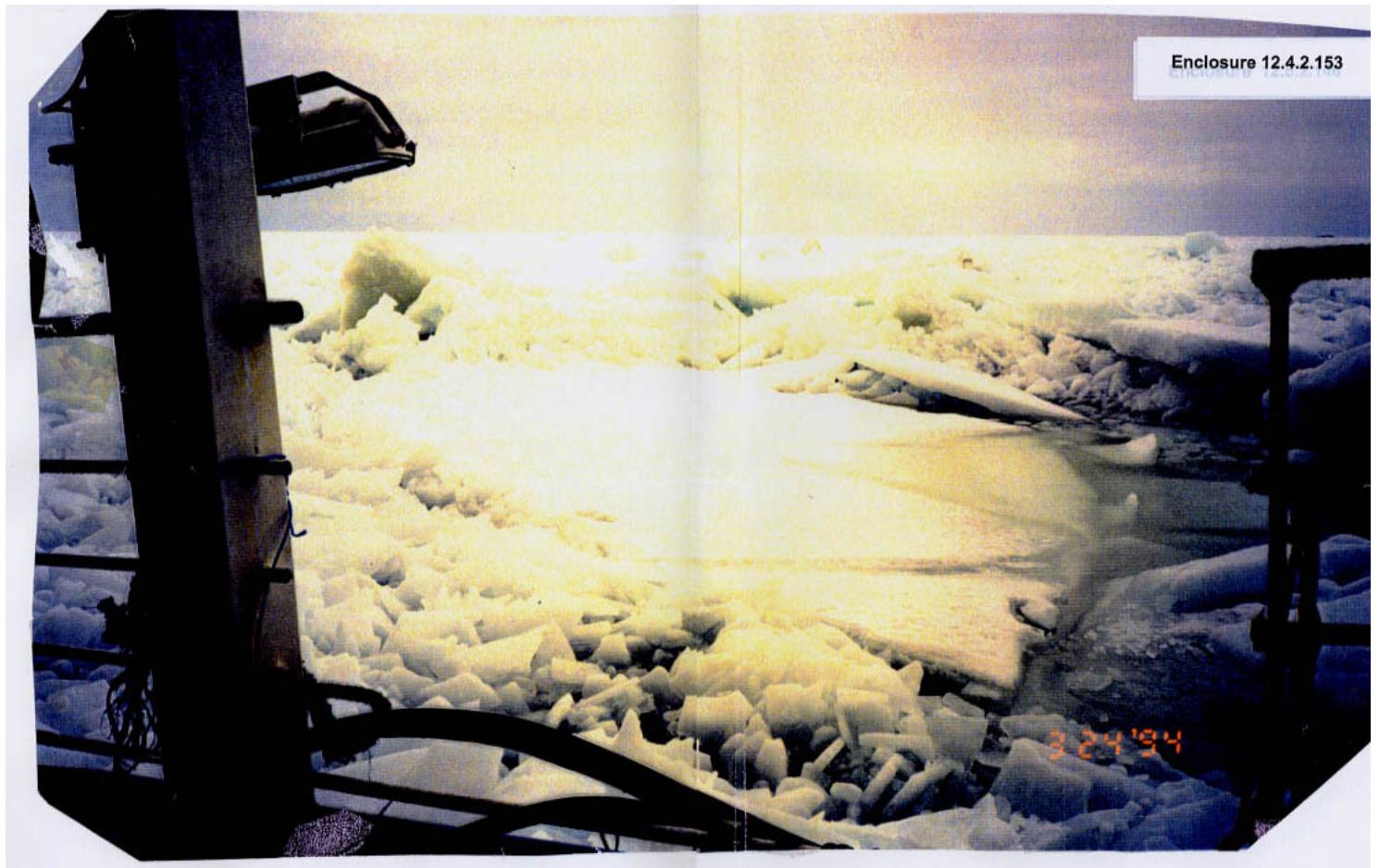
Incl. 7Incl. 8

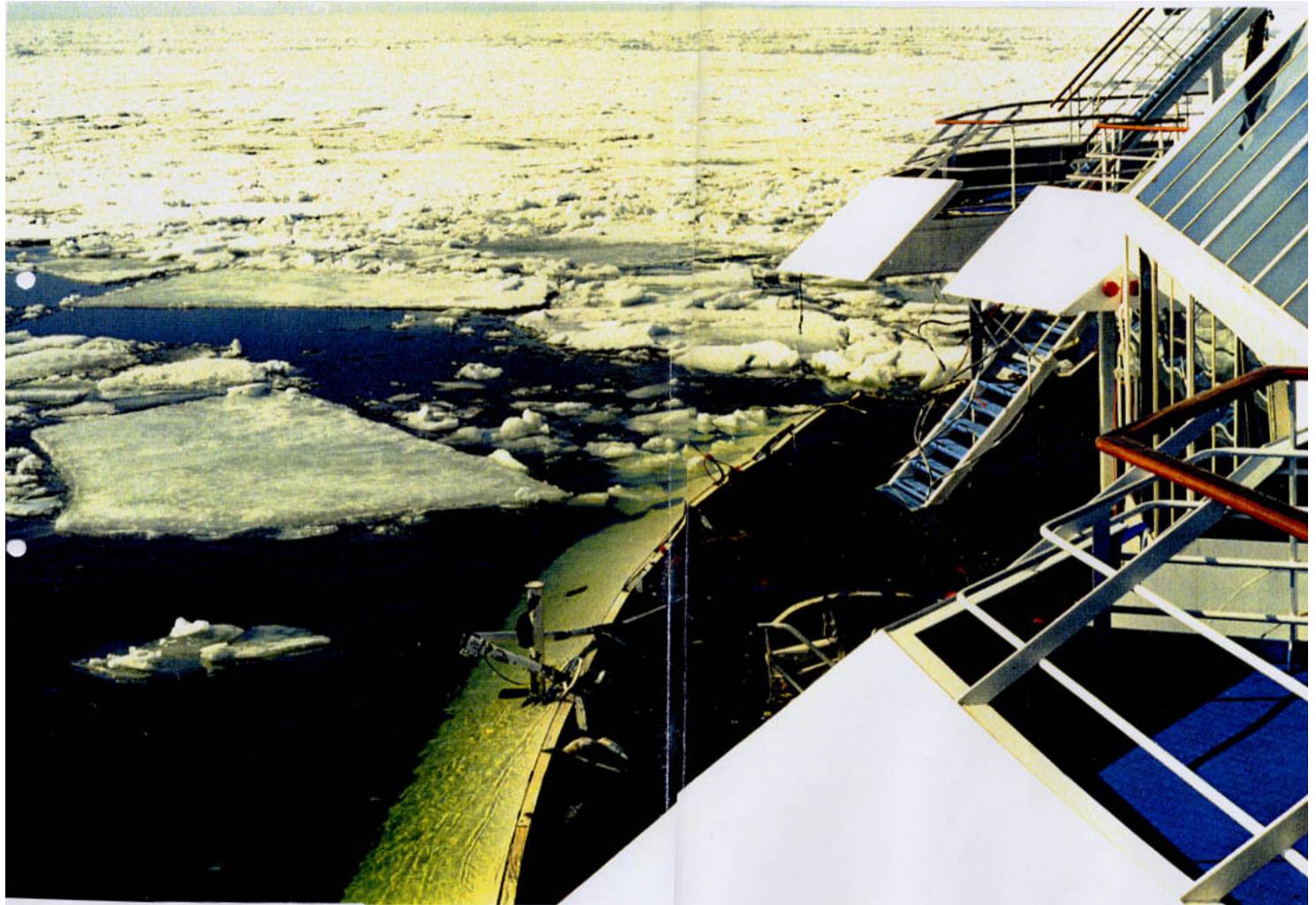


## Ice chart



## **Photo showing sally albatros aground in ice**





## Interview Lars lindstrom

Interview

Lars Lindström (lost his brother plus 10 friends) – was on board as a passenger with car the last week in July 1994. Their car was the last one to roll on board in Tallinn, the bow ramp was closed behind them and they were leaving the car when he realised that 2 crew members were trying to lock the starboard lower bolt of the bow ramp, which did not work. A third one came with an iron bar in his hand, hammered the pocket a few times, without the bolt moving at all, whereafter they turned around and walked away saying: "*It can remain as it is*" even though the bolt was not locked. (He speaks and understands Estonian.) He had subsequently written a letter to Estline AB and complained about the above, whereafter he received a letter stating that the securing bolts and locking devices were the responsibility of a Finnish engineer company, the name of whom he also received. He wrote to them as well as to Det norske Veritas, but never received a reply.

Stockholm  
18.06.1997

Werner Hummel

## Interview Kari holmsten

**Enclosure 12.4.3.155**Interview

Kari Holmsten, 44 years (lost his wife and both children), his father-in-law is an Ukrainian General and he is now in the metal and weapon smuggling business, which is bad for the time being. He started his professional career/education with Wärtsila, Helsinki as a welder, has also worked inside visors on Silja and Viking vessels. Between 1993 and the catastrophe he made at least 50 trips on the "Estonia", sometimes by car, he has presented 5 passports fully stamped mainly with arrival/departure dates from Tallinn.

By means of these passport stamps he has reconstructed that it was on March 3rd, 1994 when they arrived at Tallinn and when for the first time he noted that something was wrong with the ferry. His car was the 2nd one from forward and he watched how the crew tried in vain to open the visor, he was nervous because he had to reach the Belorussian Embassy before they closed to obtain a visa, he speaks and understands the Estonian language, thus picked up from crew members talk that they were unable to unlock the side locks, he left his car and told the crew members to lift/lower/lift/lower, etc. the visor in short intervals and, when lowering, try to open the side locks simultaneously, they followed the advice and after about 30 minutes they finally managed to open the visor and subsequently also the bow ramp, which did not create problems. There was no ice in the port of Tallinn at the time, however, he seems to remember that there had been ice at sea.

Later, probably on 27th March 1994 he was again on his way to Tallinn when the same happened again, but this time it took the crew only 15-20 minutes to open the visor.

As far as he remembers, it must have been already back in October 1993 when they came down to the car deck and there was still water on the deck inside the indentations and in the corners at the sides.

He had the definite impression that the visor was totally misaligned and did not fit anymore into the locking devices. He does not remember that "Estonia" went with excessive speed through heavy ice, but what he remembers are drunken

crew members in boiler suits, this was especially so in the wintertime when there were not so many passengers.

He also remembers that he frequently noted with surprise when driving onto the car deck at Stockholm that timber boards were standing upright leaning against the bow ramp and that wooden pallets were lying in front of the bow ramp, which did not make sense to him unless they needed wood in Tallinn.

He further noted frequently when driving up or down the bow ramp that the piston rods were dry without any oil (he is willing and prepared to obtain statements from Estonian crew members, who are, so far, silent).

Stockholm

18.06.1997

Werner Hummel

## Statement Torbjorn Cederqvist

Memo

Enclosure 12.4.3.156

## 4.1. Captain Joel Haukka

born 11.4.30 in Estonia and now a Swedish citizen, since 1944, has been at sea since 1948 on Swedish ships, obtained his Master's license in 1961 in Kalmar together with Hans Rosengren, who is now a teacher at this navigation school and a member of the Swedish Part of the International Commission, to whom he has kept in contact until recently, he sailed as mate on Johnsson Line vessels and as master for the last 15 years on tankers of the Lorentzen Group, he has been retired since 1990 and since then has been working as a consultant for Swedish companies in Estonia, he speaks Swedish, Estonian and English. In his consulting job he has gone to and from Tallinn approximately 20-25 times on the "Estonia", the last time in August 1994, sometimes by car, mostly without. He remembers clearly that the cardeck was always wet when they came down just before arrival, as if there had been water on deck before. He remembers in particular one trip he made with his car with some Swedish friends and this trip is the subject of the letter he wrote on 9.10.94 to his previous school friend and mate from the "Kungsholm", Hans Rosengren, in his capacity as a member of the International Commission. He explained what he had observed on this particular trip in his letter where he states as follows:

*"I have made at least 20-25 trips between Tallinn-Stockholm on the "Estonia".*

*I knew Captain Arvo Andresson personally, I have been on the bridge at least 3 times. He made a sympathetic, open and experienced impression on me, however, I don't know anything about his behaviour in unusual situations.*

... / ...

(2)

Concerning the bow ramp I would like to state that in January 1994 at Tallinn I together with many others had to wait for ca. 45 minutes, because they were unable to unlock the ramp. It could not be opened. My car was the first one to leave the cardeck which I had arranged respectively with the chief mate. The car was the first in line at port side, directly next to the hydraulic pump controls which were at port side. They had a problem with the system and alleged that the ramp was frozen fast. I am prepared to give evidence on that and can also state the names of the others."

To the above he added the following after having been questioned respectively:

"The Estonian crew members tried to open the bow ramp in vain for about 20 minutes by operating the hydraulic different ways, then started to hammer against the what he believed were the securing bolts, also in vain, then they asked the Swedish adviser to come down and he believes it was Karl Karell. He stepped out of the car, shook hands with him and said: <Why do the Estonians switch off the hydraulic system at sea?> He shrugged and said something like one year with Estonians is more than enough, but he did something whereafter it was possible for the crew to open the bow ramp and they left the ferry."

He further stated having heard from Estonian truck drivers before and after the casualty that cargo had shifted inside the trucks to forward, which they attributed to the excessive speed of the vessel trying to keep to the schedule. When they complained to crew members about the

.../...

damage caused, the answer had always been that Estline was proud of beating Silja and Viking in bad weather.

He has spoken to the trainee mate Einar Kukk who told him that even the mates on the bridge had discussed amongst themselves on the casualty voyage that the speed was much too high, but no one had the power to do anything against Arvo Andresson who was following the instructions from Estline. (Einar Kukk is now with Tallink.)

He assisted a French camera team about 4 weeks ago in Tallinn and on board of the "Regina Baltica". They were reporting on the "Estonia" casualty. He arranged the meetings in Tallinn and also saw the Report of the Estonia Commission. On the way back on board "Regina Baltica" they wanted to talk to a crew member who was one of the survivors, but had considerable difficulties because the survivors are forbidden to talk about the casualty at all. He promised to send details of the French camera team to enable us to contact them.

He added that he had been told by Erik Moik, one of the masters of "Regina Baltica", that he had once been instructed by Estline to power full ahead against a full storm and find out what happens to the visor.

Note: The visor of this vessel is not welded closed as on "Mare Balticum".

On 2nd February 1996 he wrote a 2nd letter to Hans Rosengren from which the following is quoted:

*"I am sending you the Swedish translation of an interview with Andi Meister published in the Estonian newspaper 'Postimees' on 16th January, 1996.*

*Read the article and draw your own conclusions.*

*For me, having read his statement, it is a further confirmation that the guy doesn't know what he is talking about.*

*He made it quite clear that the causes of the catastrophe are exclusively technical.*

*Why is the excessive speed not taken into account?*

... / ...

(4)

In interviews and statement by the Estonian members of the International Commission it is said that the speed is of no relevance and had no effect on the catastrophe.

The chairman of the Commission has furthermore given wrong information in the interview when he stated that during the voyage there would be nobody on the cardeck. The crew went safety rounds on the cardeck.

At the same time I am asking the question, after having read in the interview about all the deficiencies that had been on the vessel, why were these obvious deficiencies not rectified when the vessel changed flag to Estonia?

The vessel was for a longer time sailing under Estonian flag and it should very well have been noted that the ramp was at the wrong place.

Or didn't they have competent masters and superintendents who were able to find that out?

According to the Estonian newspapers one of the conclusions in the Final Report shall be that the speed had no relevance for the catastrophe, which is totally wrong and not understandable because the vessel was proceeding with full engine power against a full storm. Many people, who do not even have own experience with good seamanship, will laugh about it. Already in the autumn (1995) the public has pointed to the fact that the Estonian Commission is biased. This is true, but the required consequences have not been taken.

The Commission itself does everything to make the Final Report, which is of substantial international interest, a farce, which is absolutely impossible.

Forssberg did indeed state in yesterday's Svenska Dagbladet that the survivors had been questioned by the police. I am asking you, Hans: Is it possible for a layman, who has never

... / ...

(5)

*had to do with shipping or with how to handle a vessel, to ask  
the proper questions to establish a correct picture (scenario) of  
what had happened?"*

Hans Rosengren never replied to this letter and the friendship between  
the two came to an end.

18.6.97

*Warne Hamel*

## **Statement Bo pettersson**

**Enclosure 12.4.3.157.1**Statement

**Bo Pettersson**, living at Norberg/Liken  
born 09.04.46 – profession: manager and owner of Djurutställningar AB, a company engaged in exotic animals.

My father worked at the lock of Hammerby, at the connection of Lake Mälaren and the Baltic. I grew up there in the immediate vicinity, but there were no seagoing ships, more boats. My father was a sailor during the war.

I made two trips to Turku on the big ferries and a couple of times to Denmark and Germany.

I made one trip on the "Estonia" at the end of May 1994 together with my wife. We had a cabin in the forepart of the accommodation from where we could overlook the foreship, probably it was on deck 6. We did not take photos nor did we make a video.

We boarded the ferry at Stockholm and were the last people to come onboard because we first went to the wrong terminal. We went to the information and were shown the way to the cabin. As we were late the ship left straight away. After we had settled down in the cabin, I believe on the 6th deck which was overlooking the foreship, I went to the window and looked down on the foreship while the vessel was proceeding through the archipelago. I immediately had the impression that it was a very old vessel in a bad condition. I saw a couple of empty foundations from where the parts belonging on top, e.g. mooring winches and the like, had been taken away. I had a rather negative impression from the beginning, also that apparently a lot of paint layers were used without taking care for what was underneath. I also noted that the mooring ropes were substantially worn and in a bad condition. They were looking simply worn and over-stretched.

I also saw two crew members on the port side of the forecastle deck. The bigger man was standing on the visor facing me and was hammering with a big sledge hammer on the port edge of the visor which was extending the forepeak deck

by some 10 cm. The gap was in any event big enough that I showed it to my wife. We could see the water through the gap. The other man was standing on the forecastle deck opposite to the one with the sledge hammer and I could only see his back side. The visor was obviously not properly closed because its port side was standing upwards above the level of the forecastle deck, worse at the port outer corner on which the crew member was hammering, apparently without success, as far as I remember.

The window could only be opened by force. I also checked the nearest way to the rescue station. I think we stayed in the cabin for about 1 hour, after some time the hammering stopped but the visor edge was still standing up.

For a luxury cabin the outfit was rather poor. The beds were just welded to the cabin wall and there was a gap between the wall and the bed into which my book fell.

The weather was good and we did not hear anything special during the night on way to Tallinn and also on the way back to Stockholm.

I did not see when they opened the visor at Tallinn because we were probably on our way to the gangway already. We returned onboard the same evening to the same cabin, but I have no memory whether I looked out of the window again and if I saw anything unusual. Most likely not. The voyage back to Stockholm was uneventful.

Liken, 4th September 1999

.....

Bo Petterson

## Interview charly dahlberg

## Enclosure 12.4.4.158

Memo

4.4. Charley K. Dahlberg, engineer, ca. 40 years, has made about 30 trips on the "Estonia", clearly remembers frequently having heard the splashing of water inside the visor at sea; realized the bad condition of the visor and bow ramp as well as the many cracked and rewelded welding seams in way, decided not to use the "Estonia" anymore when going from Stockholm to Tallinn but to go via Helsinki instead; just after the casualty he met a retired Estonian onboard a Viking ferry to Stockholm, this man told him that he had been in the building/construction branch employed with a Swedish firm working on projects in Estonia, thus he very often travelled together with his colleagues on the "Estonia" to Tallinn and back, after a while they realized that at least in the foreship area there was no welding seam which had not cracked and been rewelded at least 3 times, and this was due to pushing the vessel too fast against headseas, this behaviour of the ferry's command in combination with the general bad impression they had of the crew and of the vessel in general persuaded them that it would be safer to refrain from using the "Estonia" any longer and to take the longer but - in their view - safer journey via Helsinki, the same as Charley Dahlberg; consequently they went to Helsinki on Silja or Viking ferries which was o.k., but then they had to rely again on the Estonians because before Silja took up the Tallinn service in 1995 only the "Tallink" and "Georg Ott" were available; Dahlberg has written down his experiences on these ferries in a letter dated November 22nd, 1994, which is attached as enclosure to this addendum and which is absolutely self-explanatory and in line with his experience on the "Estonia".

17.6.97

Warren Flammel

## Letter and drawing of torsten sundberg

Enclosure 12.4.4.159

ESTONIA<sup>22</sup>  
F 56

Till Statens havsverkommision  
Västerbronplan 3  
Box 12538  
10229 Stockholm

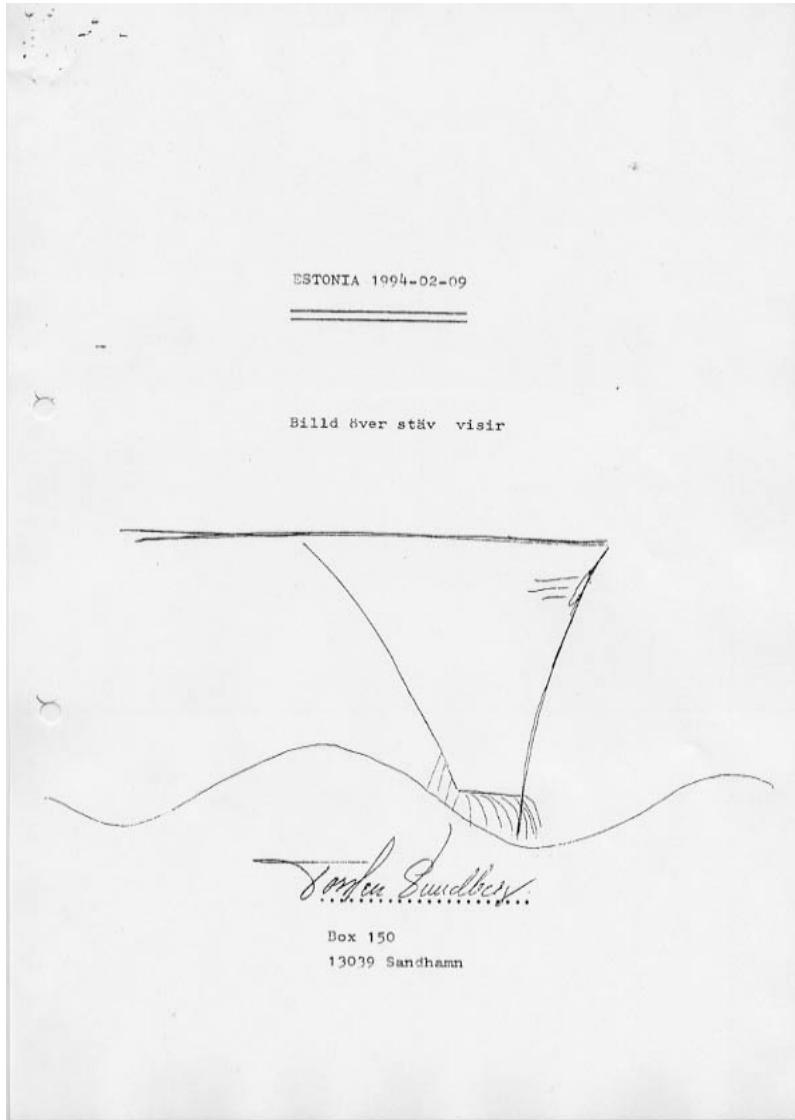
Hänvisar till tidigare telesamtal December 1994 om iakttagelser kring Estonias nedre ståvdel (bogvisir).  
Det är lite ovist om exakt datum det kan vara den 2-9-1994, men vad som kan vara visentligt är min iakttagelse från lotsbåten. Vid utgång till ett fartyg möter vi Estonia sjögången här mättlig vindriktning är ESE, Estonia nedre ståvdel sätter under i sjögången när fartyget lyfter ur vändalen försar det massor av vatten ut ur undre delen av hela bogvisiret även sidor detta upprepas flera gånger under detta möte med Estonia.  
Avståndet till Estonia är kring 75 meter vid iakttagelsen och god sikt.

Sandhamn 1995-02-14

*Dagfin Lundberg*

Box 150  
13039 Sandhamn

Tel 57153213



## Report pilot Bo soderman with office translation

**Enclosure 12.4.4.161**Office TranslationReport of Pilot Bo Söderman

With reference to our telephone conversation today herewith the facts about my observations in December 1993 concerning water ingress on the cardeck of the MV ESTONIA when I piloted the vessel to Stockholm. On the 24th December 1993 at about 05.50 hrs I went alongside the ferry's starboard side on board the Sandhamn pilot boat inside Svängens Light, wind and sea state according to the attached copy.

Water covered the whole starboard side of the cardeck ca. 3-5 cm high.

On the 26th december, 1993 I piloted ESTONIA again, this time from Söderarm. The weather was now worse, according to my own notes ca. 22 m/s from East, with rough seas. I boarded the ferry about 1,5 nm outside Remmargrunds Light. Upon my recommendation the master turned to starboard to make leeway for the pilot boat. I jumped on board from the upper platform of the pilot boat, the port pilot door was open. Under such conditions one has to expect water splashing up from below between ferry and pilot boat. This time, however, surprisingly the water came from above out of the pilot door when the ESTONIA rolled to port. When I came on board the mate warned me that there was "plenty of water on deck!" On the way to the lift I walked through water high up the legs of my boots, ca. 20 cm.

In my opinion there was 5-10 cm water over the whole area of the vessel's cardeck. The water was splashing about 1 m high against the bulkhead with the stairways (centre casing).

I do not know from where the water penetrated the cardeck. I have tried to get a copy of the weather report from SMHI to compare it with my own observations, however, I never received a reply in spite of written and telephone reminders.

In case I can contribute to solve the ESTONIA question in a seaman like way, I am willing to cooperate.

signed by

Bo Söderman, retired pilot

Köpmankholen 314, 76018 YXLAN

**Letter osten lonnestrom/ babro hellstrom**

**Enclosure 12.4.4.162****Office Translation**

Tyresö, 23/7 95

HALLO

I hope that you are able to read and translate this letter and that these lines are going to reach the very person who is doing a special investigation concerning the accident of ESTONIA soonest.

In my opinion the German shipyard, assigned with the task of putting ESTONIA into operating condition, has nothing at all to do with the accident of ESTONIA. If you don't find a shipping company to blame then you tend to blow the fault over to the shipyard which has done a huge job in putting her into shape. I find this rather cowardly of the Swedish authorities, because those are the ones who were doing a sloppy control of all vessels, ESTONIA was one of them. I defend this shipyard regarding the handling of ESTONIA.

What follows now is a statement, made by two Finnish seamen, who, during a conversation, referred to the bow visor which, on many occasions, would not be closed at once without being forced to be opened and thereafter closed again. This they pointed out several times to their superintendent but nothing happened. It was also said that the portside hydraulic, regulating the up and down of the visor, on many occasions had an oil leak. According to the latest report, which can be read in DN, the 'Havarikommision' states that this so-called 'Atlantic Lock' should have caused the accident.

Such a statement cannot be accepted, partly because this report is secret, in this way the 'Kommision' deliberately defends somebody, when there has been an unbelievably messy job done on the vessel causing the death of 900 people. I claim that if this hydraulic was defect by the delivery from the shipyard and that if the shipping company had pointed out that something was wrong, then they definitely would have done something with it. The explanation of the faults pointed out by those two men were purposely delayed in relaying to the superior and who, in turn, should have consulted the shipyard for the purpose of investigation. The theory we are working on (there are four of us), what we would like to hold on to, through all the rumours, is, that this bow visor was not locked in such a way as it should have been when leaving Tallinn. The visor was closed but the locking system was not fixed. Such a construction, the weight of the bow visor being 58,755 kg, we cannot see being blown away just like that, unless somebody actuated the process itself.

Länsiäistä/Helsingfors (Note 13. März 1997)

- page 2 -

Regarding the weather it was not of the type which should be of any danger to ESTONIA or its passengers, it is being said that a giant wave sank her, maximal height of waves according to SMHI could be four or five metres. The speed has been discussed many times. The speed of ESTONIA when leaving Tallinn was actually high, however, after four hours the speed was reduced, this means that she would be late according to her timetable. That these precautions were taken was due to the fact that very probably, after these hours, there was water on the big cardeck already. The seaman Silver Linde should have been there on the cardeck, the ascertained time was 23:35-23:40 hrs. The information he has given to the 'Kommision' is not correct. Even though this bow visor broke away about midnight, you need a lot of water to sink a vessel of the size of ESTONIA: The water was observed on the cardeck about 23:50-23:55 hrs., that is why I am of the opinion that the water came in on the cardeck much earlier than the 'Kommision' has stated.

There are some questions which we have got no answer to regarding the command on the bridge. First of all, where was the captain when the crisis started to arise, secondly, in my opinion none of the staff on the bridge could speak a coherent international language. This was proven when they sent out their MAYDAY. The machinist, who was in the engine room did, according to the press, escape close by the funnel. How can this be possible taking into consideration the heat surrounding it. We believe that this man saw his possibility to escape at an earlier moment and escaped by the stairs leading up past the cardeck midships when all this water started to seep into the engine room.

There were many factors leading to the ship wreckage of ESTONIA on 28/9/94 in the Baltic Sea. First of all the bow visor was not locked in the way it should have been in order to hold the visor back, another thing was that the hydraulic was defect and thirdly the alarm system, showing if the visor is closed. Probably there was a fault on this system, or they didn't care about this on the bridge. Fourthly ESTONIA was stowed wrong, heavy vehicles had been placed all the way in front by the car-ramp at the right side of the ship (portside). The weight estimated is about 375-400 tons. That means that 14/15 heavy vehicles were placed on the portside, one can imagine what this means to a vessel. Why were her ballast tanks not filled, this would have made her going more steadily?

They failed to take up the case (equipment) which had recorded ESTONIA's speed during the night she sank. I to interpret this to the effect that the salvage company, doing this job, got the order that this case should remain at the bottom of the sea, because something might emerge pointing against the shipping company. With the

- page 3 -

knowledge and resources being at one's disposal today it should have been possible to lift this case up.

This occurrence with ESTONIA is and will be a rather mysterious matter. Nordström & Thulin have received several complaints regarding the careless handling of the passengers by the crew. How the bow visor loosened, whether the breaking point was down, up or towards starboard or towards portside, the latter being the side to which she capsized, nothing is proven. To us it is obvious that Nordström & Thulin are the ones carrying the responsibility for what happened to ESTONIA. On page 3 the salvage of ESTONIA is being mentioned and how this could happen, according to a telephone conversation with a Norwegian salvage company.

During a dialogue regarding an eventual salvage of ESTONIA a Norwegian salvage company was asked whether such a salvage could be performed. The result was that some difficulties could arise but that it should be possible to carry out the salvage operation. The costs for this task should amount to more than one billion kroner. This Norwegian company was in contact with a German salvage company, whose capacity should correspond to ESTONIA's weight one and a half time, in other words these two companies had the capacity to lift about 35,000 tons. Cranes resembling pontoons were accessible, equivalent to the Swedish "lodkrok". It was in vain, it turned out that the amount would exceed one and a half billion kroner.

When the Swedish government got knowledge of this it was claimed that the Norwegian salvage company was not trustworthy enough to get the assignment of ESTONIA's salvage. Since then the government, with Ines Usman, has delayed this project and made a lot of excuses to avoid the costs involved in getting up all these people who died when ESTONIA sank. Despite the difficult weather condition during the week in question these two companies could have salvaged ESTONIA, it would have been possible with a notice of about 40 hours, the salvage operation could have taken place during even heavier weather conditions. The description of the salvage operation itself was an easy task for me, however, this I would have to revoke. The explanation is that you get down some wired ropes which can be fastened inside the vessel's aft, that means in the entrance gate, simply to achieve a horizontal level of the ship. The stern of the vessel is constructed in such a way that it is possible to lift the ship if you manage to get the aft lifted a little bit up from the bottom. More wires can be fastened under the keel, even the forepart of the ship can be lifted. Of course it is alright to do an experiment in a basin with a model of ESTONIA, however, this cannot be compared with the reality. We repeat that the only ones responsible for the accident with ESTONIA are Nordström & Thulin.

- page 4 -

They did not act responsible and in a seaworthy manner towards their passengers, 90% of the responsibility for the disaster have to be blamed on them, the remaining 10% have to be blamed on the Estonian associate who had no idea of what the Swedish colleagues were doing. Nordström & Thulin did not handle the ferry traffic between Stockholm and Tallinn satisfactory, a lot of things were ignored regarding the vessel's maintenance, like such an important thing as the life-saving equipment on board. Many of the lifeboats were locked and lacked the equipment which should have been inside them. This has been stated by the crew. On the bridge were different instruments showing sometimes wrong data regarding the speed, showing a slower speed of the vessel than stated by the yard. On the 13th of March '94 the superintendent got the information that oil was leaking from the hydraulics on portside. This had not been repaired when these two left Nordström & Thulin on 29/8/94.

We have asked a lot of people about the construction as well as about the functioning of the bow visor. It seems that the information given to the 'Havarikommision' is not in accordance with what came forth during the conversation with these people. It was very interesting to visit one of the Viking's liner ferries, named ISABELLA. It happened on the 25/10/94. We were friendly received and got a technical description of what was located on the foreship. It was surprising to see the construction of those bow visors, as well as the car-ramp when it was moved up and down, there are two gates leading to each side of the vessel, the weight of these two are 45 tons each, that means 90 tons hanging in the bow. In order to get them up a counter pressure is needed.

It is difficult to understand the accident of ESTONIA, that the bow visor could break anyway. Taking into consideration the weather conditions when it happened, the only explanation would be that the vessel went through heavy ice which might have knocked out the Atlantic lock. You felt that the people were unwilling to talk about this matter.

A continuous surveillance is done of these gates, as well as of the hydraulic operating these gates, by a German company who has constructed the equipment being on board these two vessels. One can wonder when this was done on ESTONIA. We also visited AMORELLA; there they told us the same thing as on the sister vessel. A search, hopefully taken up in the police program on TV 3 called "efterlyst" (search for), might lead to the finding of these two Finnish speaking men who had difficulties in speaking Swedish. Thanks to my stay in Norrland I managed to learn a bit Finnish, which was the reason why I could make myself understood and make a conversation

- page 5 -

in Finnish. I placed the usual questions about the work onboard, how long they had been working on ESTONIA. The tasks they were usually given was to place the heavy trucks in a position so that an even distribution of the weight was guaranteed on the big car-deck. We also got to know that carelessness happened rather often when these two were not on duty. They could even tell that on many occasions water was on the big car-deck. The occasions happened during the time from 14/3 until 18/3/94 when those two left in Värtahamnen (Stockholm). It was observed that the bow visor was not properly closed, they had to open it again and close it again, then it was locked. I am convinced that already then the hydraulic on starboard was defect and that water had come in on the big car-deck. This is exactly what happened on ESTONIA the night the sank in the Baltic Sea. A reconstruction of what happened when ESTONIA left Tallinn on 28/9/94 at 18:12 hrs., when ESTONIA had travelled for 45 distance-minutes (1 hours travel = 2,77 miles - 15 dist.) at a speed of 15,7 knots which means at level with Örö after 3,5 hours. There was an opening between the bow visor and the hull. This widened as she proceeded for Stockholm. There were head-winds on most part of the voyage, however, after Örö the weather got worse with the result that the bow visor, which was not in the right position, encounters heavy blows. The force of the waves from beneath is very big and the bow visor is so heavy that it moves forth and out again, later it bends over towards portside and takes with it the car-ramp, which is not locked either.

If it had been driven up towards the landings which are in the construction around the frame which the car-ramp is supposed to rest against, then it would not have got stuck in the bow visor when that one broke away. The distance from the car-ramp to the bow visor is constructed in such a way that it should, under normal circumstances, not be possible for the bow visor to tear away in such an important thing as a car-ramp. I do a relatively simple experiment like taking a piece of iron, copper and brass and bend it to and from to a point of near breaking. The same thing is thinkable to have happened on ESTONIA. The bow visor, weighing 58,755 kg, moves back and forth and after awhile these unbelievable hinges finally break and the accident happens. Not even a constructor of the foreship, with his construction knowledge, could dream of such an accident happening. ESTONIA was even equipped with an amplification to withstand hard weather and relatively heavy ice. Those were the bangs which were heard on ESTONIA. A competent crew on the bridge could have prevented the accident by 45% by making a powerful turn to the portside. Such a manoeuvre would have placed ESTONIA into relatively shallow waters, this would have given her ample time to get away from the wind and heavy sea. I must admit that

- page 6 -

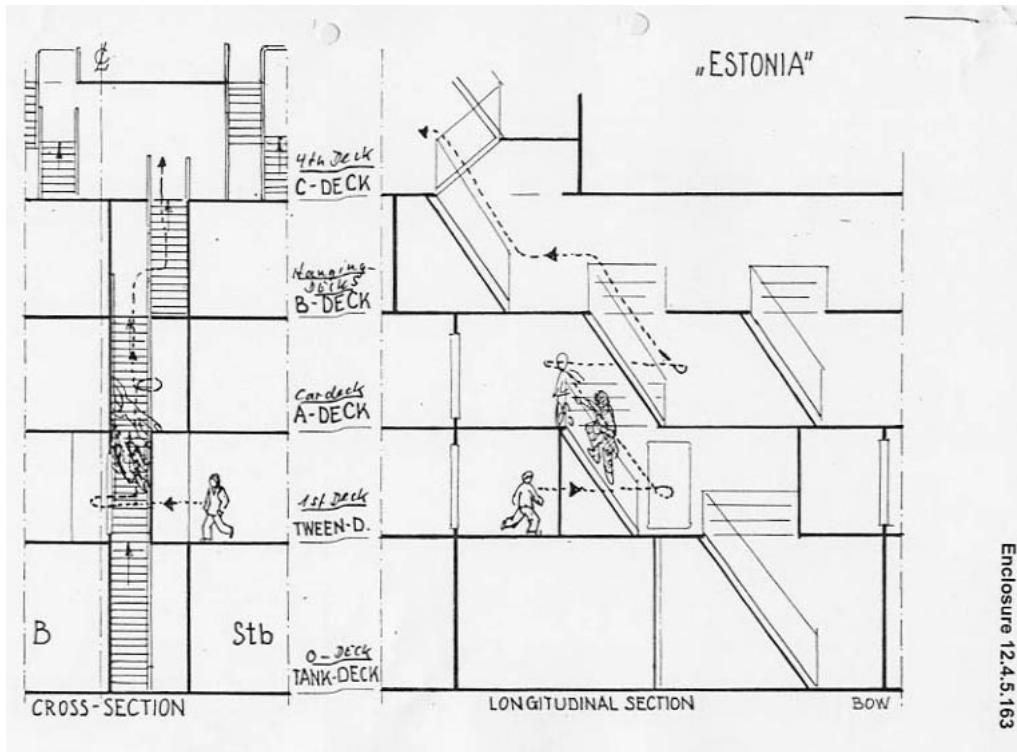
such a manoeuvre also would have cost some lives, namely passengers in the economy quarters. These are lying very close to the bow under the car-deck. There were some people around the pool and the sauna. How ESTONIA would have managed a grounding and how the passengers would have survived such a manoeuvre is something we have thought over for some length. Probably the people would have been severely hurt, the number of victims would probably have been fewer. The length of the ship is 155 metres, the depth of the sea from Örö towards a group of islands called JURMO would have caused the foreship to ground at a depth of about 15/17 metres and the aft part about 28/30 metres. This would have meant that part of the ship would have been over the waterlevel and would thereby have supported the task to rescue the people. When the engineer moved upwards in the vessel to bring himself into safety there was already water on the car-deck. I believe that this man told his friends on the bridge what had happened on the car-deck, since they activated the TV monitor and were able to see water on the car-deck. They were scared stiff and could do nothing about it, that is something I am wondering about (where was the commander who was responsible for the vessel when a decision should have been taken). The time it took to go from Örö to the place where she sank, according to the Finnish UTÖ there should have been enough time to ground ESTONIA in shallow waters. At 00:24 hrs. ESTONIA sent an emergency call to SILJA EUROPA: "Mayday, Mayday". At 00:30 hrs. her last words were heard: "Really bad, it looks really bad here." Through our conversations with competent seamen we got to know that what happened to ESTONIA is a very curious matter. Next you will find the search message which was sent on TV 4 regarding those two Finnish speaking men. The man we spoke with (I speak Finnish) was about 180/85 cm tall, he was dressed in dark Manchesterjeans, he wore a checkered shirt in many colours as well as a light blue quilted jacket with a red stripe in it, he had a peaked cap with a sign similar to a club membership sign. His beard was about 5 cm long, it was well groomed and he wore heavy working boots. When the conversation was finished he said to his friend that we had taken down in writing a lot of what had been said. He turns towards his friend, whom he calls by the name of PERTTI, and asks if he goes with it (that is how it is being expressed in Finnish). As they turn away and walk towards the customs station which is located a little away from the place the ferry OLYMPIA of Silja Line lied moored. The second man was dressed in working pants with suspenders, he wore an army coloured shirt, he had dark hair, he wore a dark brown leather jacket with a little lighter lining, he also wore heavy working boots. We have to guess the age of these two men somewhere between 48-55 years, the latter spoke no Swedish.

- page 7 -

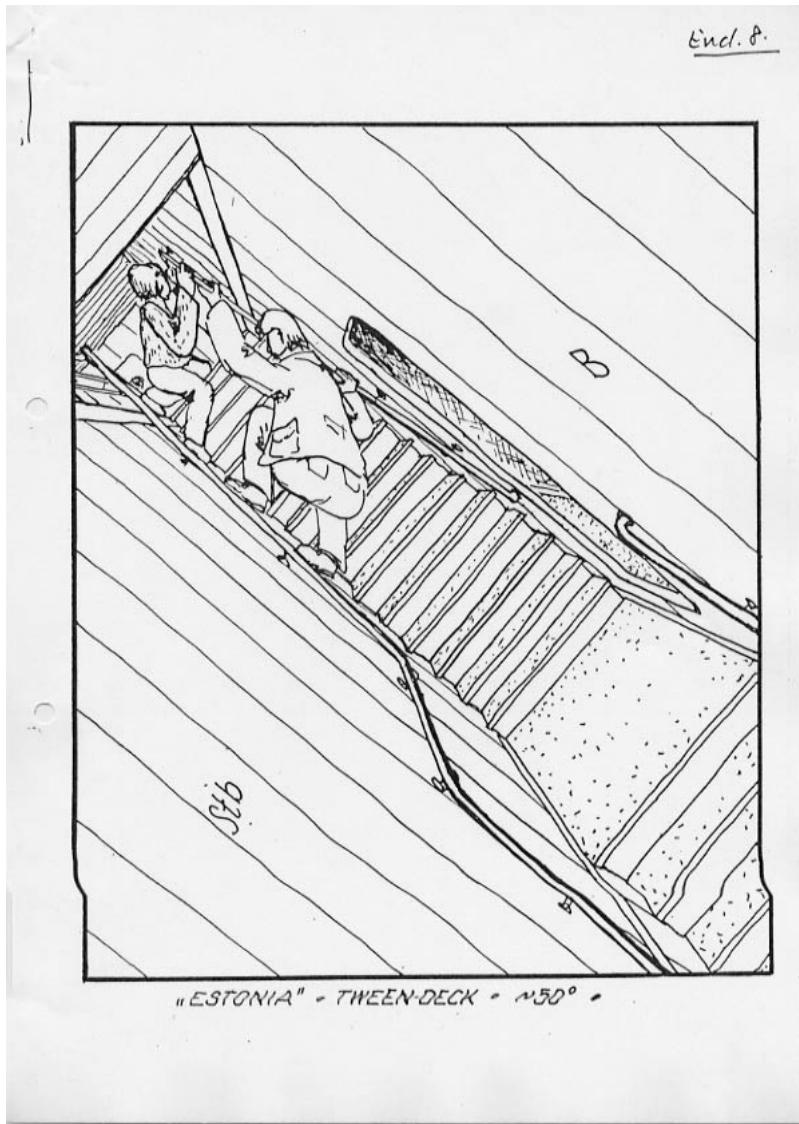
We have done some travelling to ABO, MARIEHAMN, HELSINGFORS as well as some trips to Tallinn, hoping to pick up some more information by talking to the crewson the ferries going on the Baltic Sea. It has been instructive to learn about their vessels' capacities, constructions and also the rescue equipment onboard the ferries. The last trip we made was onboard Silja Line's SYMPHONY, on 18/7/95 we were in ABO. As a result of all these conversations we may conclude that to take possession of ESTONIA will not prove difficult to fortune hunter companies who have enormous resources to overcome different obstacles. These companies mostly operate in warm waters where driving in deep waters is of no difficulty. There are tug boats equipped with compressors for divingchambers, there are even small boats of types similar to the Swedish mini-submarines. It is only a question of time when these companies will make a visit to ESTONIA. The rumours say that a huge amount of valuables are to be found onboard the vessel which costed the lives of 900 people. What could be found are jewelry, securities (shares, obligations) foreign currency which should have been exchanged in Sweden. There were even different drugs onboard like cannabis, hashish ass well as anabolasteroid. The value of these things out to amount to several million kroner. Last but not least one should not forget all the personal belongings of the victims and which are of great value to the relatives. Also there are all the contents in the cars, trailers, busses. Waiting for reports from different sources, such as the final report from the 'Havariekommission', this letter has been delayed, however, we have made our statements and send this letter off hoping that somebody else may contribute to the explanation of this accident in a rightful and satisfactory manner for all people involved. Finally I can only state what we have heard through conversations that Nordström & Thulin are and will remain the only ones responsible for the disaster with ESTONIA. We wish you all a nice and beautiful summer.

Regards from      Östen Lönnérström  
                         Barbro Hellström  
                         Rullstensgränd 2  
                         135 50 Tyresö

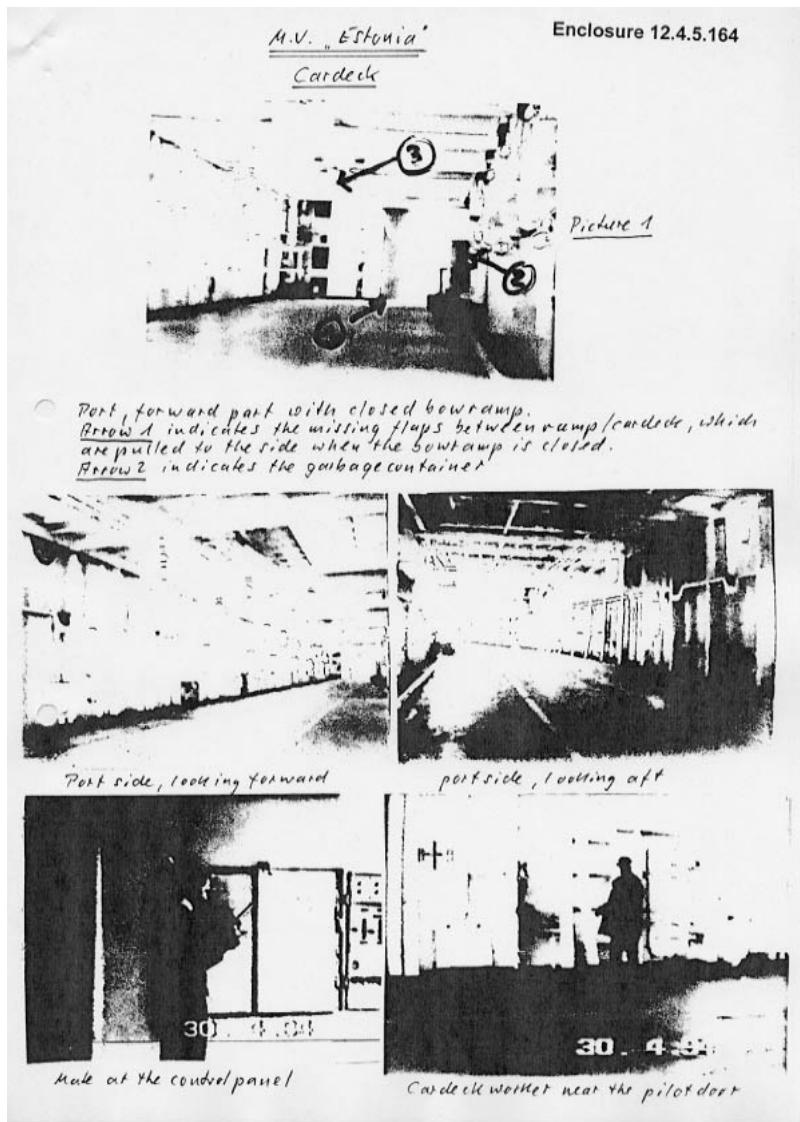
## Drawing carl overberg



Enclosure 12.4.5.163

Encl. 8.

## Photo page reffering to statement of carl overberg



Fax carl-Magnus ring to Goran Persson

Fax till

Kopia av brev till

Statminister Göran Persson

HEJ!

JAG FÖLJER DEBATTEN OM ESTONIAS

TÄCKNING MED STOR INDIGNATION.

ESTONIA LIGGER NEDANFÖR ENKELT

DYKBART DJUP För AMATORDYKARE.

DESSA KAN EJ HELLER EKONOMISKT  
ORGANISERA MÄTTNADSDYKENING FÖR ATTFÅ TILLTRÄDE TILL FARTYGETS INNANDÖMEN - VÄRDET AV FÖREVAL OMBORD,  
som är utspridda, kan inte försvara  
EN PROFESSIONELL DYKEXPEDITION.

ALLTSÅ ÄR EN TÄCKNING ONSÖDIG!

MAN KAN VÄNDA SIG TILL MARINENS  
DYKERICENTRUM FÖR ATT KONSTATERA  
OVANNÄMDA FAKTUM.UPPSLAUNNINGEN AV FARTYGET GÅR RELATIVT  
FORT OCH KAN PÅSKYNDAS GENOMPUMPNING AV SLAM FRÅN BOTTENINGINTILL.  
DÄRMED SKULLE MAN KUNNA TILLFREDSTÄLLA TÄCKNINGSVARNA.

DYKARE TYCKER ILLA OM SLAM.

JAG HAR DELGIVIT UPPGIFTER OM  
ATT STOPPKLACKARNA TILL BOGVISIRET  
SLIPATS NER AV ESTLÄNDARNA, DÅ MAN  
INTE HADE RÅD ATT BYTA GUMMILITTEN.  
DENNA UPPGIFT KOMMER FRÅN EN

Forts.

TIDIGARE OM BORDANSTÄLLD SVENSK

I BEFATNINGSPERPOSITION OM BORD.  
DET ÄR VÄSENTLIGT ATT KOLLA DETTA.

JAG BEGÄR INHIBITION AV  
BESLUTET OM TÄCKNINGE TILLS  
EN ADEKVAT OCH OBJEKTIV ~~FACKLIG~~  
UTREDNING ÄR KLAR. DET ÄR  
INTE BRÅTTOM ATT TÄCKA FÄRTYGET.

Med vänliga hälsningar,

Carl-Magnus Ring

CARL-MAGNUSS RING  
BORGAR G.  
117 34 Stockholm

Tel. arb. 611 22 33

P.S. JAG ÄR DYKARE, BÄRCARE  
OCH SKRÄPPSBYCARE.

D. S

Office translation

Fax to  
Prime Minister Göran Persson 18.4.96

Hi,  
I am following the debate about the "Estonia" tragedy with great indignation.  
"Estonia" is lying at a depth beyond the limits of amateur divers .....  
Also the covering is not necessary .....  
I have received information that the Estonians had grinded down the steel pads  
of the bow visor, because they did not have the money to renew the rubber  
packings. The information came from a previous Swedish crew member  
onboard. It is important to talk to him. ....

With best regards  
Carl-Magnus Ring

## Statement Peeter tuur

**Enclosure 12.5.167**Office Translation**2nd Engineer Peeter Tüür**

(Interview by Juri Lilm in June 1996)

- As trainee on "Wasa King" from Christmas 1992 until the end.
- My job was the hydraulic and in charge of the engines, watch 04h00-08h00 - 16h00-20h00, 10-hour working day.
- Was on watch during departure.
- How were the difficult hours of "Estonia"?

Before the watch I was in my cabin and was woken up by unusual things. Five to six times I heard the noise of the visor, but when I was really and fully awake and concentrated on listening, there was no more noise. Shortly afterwards the vessel took the list. When the list started I was already dressed and left the cabin. Also the 1st Engineer and Reefer eng. were in the alleyway. Asked the 1st Engineer what happened? Probably the visor has been broken up, was the answer. Then I thought that the information was the same for everybody and they were all thinking like me, then came the Fire Alarm: This meant for him to go with his walkie-talkie to Fire Station 1 behind the bridge, which he did.

To save time I went through the window, because the fire station was above my cabin.

- The Alarm was "Mr. Skylight 1, 2". The voice was very excited and it was only once.
- When I climbed through the window I saw many life-vests and automatically put one on.

In such a situation it is possible that fire can break out on the cardeck.

Q: You are a specialist and have said that you heard noises caused by the visor. Can you please explain in detail?

A: This is such a specific noise that I realised it even when sleeping. The vessel was slamming into the waves and I had the feeling as if the visor

was open respectively broken loose (in Estonian there is only one word for open and loose). He was going to call the bridge, however, after he had got up from his bed the noise had already stopped and he did not hear it any more. As he did not have detailed information he decided not to call the bridge, because that should be done only with exact information. He was also a bit dizzy. Soon after the list the alarm "Mr. Skylight 1,2" came.

- 04h45 picked up by "Isabella", before he had not been seen by "Mariella".
- I had been waiting for Leiger, because he was the head of the fire-fighting team who, however, did not show up. Also none of the other team members showed up.
- Until the list was 90°, people were asking me what to do?
- I heard the whistle 3 times and the people kept asking me what to do, and I replied: "The vessel is sinking."

Q: When and where has the visor been repaired?

A: Knows nothing about any weldings to the visor and has also heard nothing from the "Wasa King" people about anything in this respect. I can say nothing about this.

Q: Is it possible that such works had been carried out before the ferry became "Estonia"?

A: It is possible that the previous owners had done that because the vessel had several names.

Q: The experts have confirmed that there have been weldings made to the visor to remove corrosion damage. Is this possible?

A: Our crew did not carry out any weldings and with the removal of corrosion by welding he has never been confronted.

Q: Why was the watch AB sent down to check the condition of the visor, although this should be seen on the monitor?

A: On the monitor you cannot see the visor, just the bow ramp.

Q: It was said that the Atlantic lock was not in order because it had been repaired? (geflickt/patched)

A: I do not want to comment on this. This would need very detailed knowledge.

Q: Was it in order?

A: All locks were in order and had been closed by the operator.

Q: These questions are now daily life and that's why I am asking them.

A: 2 years have passed in the meantime and this is a long time.

Q: Were the supports of the visor deformed?

- Which one do you mean?

- The construction of the visor was o.k. Nothing abnormal observed, also no corrosion.

Q: There is a lot of polemic about the hydraulic and somebody from the Estonian Commission has said that each time crew members had to help with a hammer?

A: If it should have been like this I would have received in the control room the orders from the captain to deal exclusively with the visor.

Has worked before on ro-ro vessels of this type and he could now compare the Russian technique with the German.

Q: The Atlantic lock had a stopper which was hammered closed?

A: During my time nobody has been down there with a hammer.

Shown picture of the upper part of the bolt; empty sensor plate, cut cables, etc.

Q: Indicates hammering marks, etc.

A: I cannot say directly that the plate is bent, it seems to me that it is not possible with a hammer to spread it open as we see it (looking at the picture with part of the bolt and part of the sensor plate and the port and centre lugs).

I did not use a hammer for the Atlantic lock.

Q: Showing picture of bushing piece (hinge !), but Juri says Atlantic lock lugs - wrongly!

A: Cannot say anything about it and puts picture away (no further comments).

--: Explains his job

Q: What works were carried out at the visor, I know about painting?

A: The main work was according to the instruction of the manual, to keep the hydraulic in order that there are no leakages, that proper greasing is done; from above we have added oil, as the grease did not reach all the necessary spots we added the oil which reached all locations, as it was provided for in the instructions. It is remarkable that it was (dublert?), the boatswain did the greasing work and we had a specific machine which was transported with a sort of car-lift, and also the engine staff did greasing work, thus 2 teams took care of this.

Q: Why were oil traces inside the visor?

A: After the catastrophe the hydraulic pipes broke and therefore came the oil. The oil traces are created by the greasing work *to the bowramp flaps*. In Stockholm the visor and bow ramp were not opened, just in Tallinn. *no*.

Q: Did you personally go to inspect visor, bow ramp, Atlantic lock in port, or who from the crew did it?

A: Hydro mecanique, 2nd Eng., electrician, of which there were several, Chief eng., boatswain.

Q: It has been observed that water was flowing out of the visor when reaching port?

A: This could sometimes happen as part of the packing was defect. Down below part of the packing allowed water to penetrate sometimes.

Q: If there was water in the visor could that affect the functioning of the sensors?

A: This is the area of the electrician which I do not want to comment on. There was not that much water that it could reach the sensors, it was further down.

Q: It was observed that the lugs of the visor were oval which has led to a large play?

A: I did not see it and also others have not. In any event, it is of no importance and no proof that the visor was not tightly locked. On the other hand the

visor is so heavy that the storm must be very strong to move it. Have never observed that the visor moved.

Q: Had the Atlantic lock sensors?

A: Yes, it had.

Q: Have there been hindrances in the final phase of closing the Atlantic lock?

A: No.

Q:

## Interview Ervin roden by jutta rabe

*Schrank. Die Wand begann sich zum Boden zu wandeln. Das bedeutet, KREEN könnte ca. 40 Grad sein.*

F: Und was hast Du dann gemacht?

A: Ich habe mich schnell angezogen.

F: Und dann bist Du rausgegangen?

A: Ja, dann bin ich vom Schiff rausgegangen. Die Wände des Flurs begannen ...schon ein zum Boden und anderes zur Decke verwandeln.

F: Und dann bist Du nach draußen gegangen?

A: Ja, ich ging zum Ausgang.

F: Wenn Du zum Ausgang gegangen bist, (als) Walkie-Talkie was gesprochen hat, da hast Du nichts gehört?

A: Nein, da fiel alles auf den Kopf. Da konnte man nicht mehr verstehen, was passiert. Nachdem dieses PAUK war, war alles durcheinander.

A: Es gab keine Zeit, irgendwelche Verbindungsgeräte zu suchen, alles war durcheinander.

F: Ist das so, daß als Du im Krankenhaus in Schweden warst, hast Du da irgendwelches Gespräch gehört, daß Silver Linde hat in dieses Walkie-Talkie gesprochen, daß auf dem Autodeck Wasser ist.

A: Ich erinnere mich nicht. Ich könnte hören. Vielleicht war es Schock. Ich könnte es hören, aber ich erinnere mich darüber nicht. Obwohl ich bezweifle nicht, daß wenn er da war, dann er das gesprochen hat.

F: Erinnerst Du dich an überhaupt Nichts von diesem Gespräch?

A: Nein.

F: Aber später hast Du über diese Geschichte gehört?

A: Naja, diese Geschichte habe ich später gehört.

*Aber es ist Fakt, wenn er Wachmatrose ist, dann wird damit das gemacht, was gemacht werden soll. Da wird nicht umsonst herumgehängt.*

F: ....ob Du im Krankenhaus auch diese Geschichte erzählt hast ...

A: Ich hatte Niemanden, mit wem ich reden konnte.

F: .....

A: Ich war alleine mit einem Schwede im Krankenzimmer.

- A: Später haben wir uns getroffen, wer hatte nach Lust darüber zu reden.
- F: Wenn Du aufgewacht bist, wie fühltest Du, daß etwas auf dem Schiff los ist?
- A: Ein Schiff geht nicht von sich selber 45° ins KREEN.
- F: Du bist erst aufgewacht, als das schon so war?
- A: Das ist so schnell passiert, es gab da keine Zeit zu beobachten, wie es nun geht. Das war ruck-zuck.
- A: Am Anfang war es, als ob es ein Paar Schläge durch Traum gegeben hat. Es ist jetzt schwierig zu sagen, weil ich in schlafrigem Zustand war. Als ob es waren solche leichtere und dann gab es nach einander zwei stärkere MATSO. Wenn es solcher Sturm ist ... solche Wellen. Das ist kein Wunder, solche Schläge können Wellen hervorrufen.
- F: Kannst Du dich erinnern, wie das Deck geladen war. War das Autodeck voll von Wagen?
- A: Ja, es war. Es gab viele Wagen. Ich war selber auf dem Autodeck. Es war nur ein Gebüsch von Befestigungsketten.
- F: Gab es da auch Pkws oder waren die Großteils Lkws?
- A: Ich erinnere mich nicht. Es gab jegliche.
- F: Erinnerst Du dich daran, wie waren ungefähr Pkws und wie Lkws gestellt?
- A: Das gehört nicht in mein Kompetenzgebiet. Dafür gibt es andere Leute, die sie stellen. Mein Gebiet war etwas anderes.
- F: Aber das Schiff war voll von Autos?
- A: Natürlich, das Schiff war immer voll von Autos.
- F: Hast Du solche Erfahrungen, daß es irgendwann Schwierigkeiten gegeben hat mit dem Öffnen und Schließen der Visierklappe bzw. Rampe.
- A: Es kamen Kommissionen, bestätigten, daß alles in Ordnung ist, dann kamen neuere Forderungen. Es wurden Verbesserungen gemacht, dann kamen neue Forderungen. Meine Aufgabe dabei war klein. Meine Sache war es, nachzuprüfen, ob Visier geschlossen oder geöffnet ist. Das war alles.

F: Gab es oft, daß Kommissionen Forderungen gestellt haben, daß bei Visier Verbesserungen gemacht werden sollen?

A: Was bedeutet Forderungen. Es wird entsprechend den seerechtlichen Bestimmungen überprüft. Es ist nicht so, daß heute kommt ein Mann und sagt, jetzt wird das und das gemacht. Es gab ständig Kommissionen und es wurde dann gemacht.

F: Aber wie oft diese Kommissionen Überprüfungen durchgeführt haben?

A: Ich erinnere mich nicht.

F: Bist Du vom Anfang an auf "Estonia" gewesen?

A: Ja.

F: Gab es so was, daß ganz am Anfang, als "Estonia" begann zu fahren, da irgendwelche drei Finnen kamen, die irgendwelche Nachreparaturarbeiten durchgeführt haben?

A: Ich erinnere mich nicht. Wenn das Schiff da stand und Cargo wurde geladen und laufende Verbesserungen gemacht, gab es da so viele Menschen, daß ich erinnere mich wirklich nicht.

F: Wenn das Schiff von Finnland kam, wurden da irgendwelche nachträgliche Reparaturarbeiten gemacht bei dem Visier bzw. Rampe?

A: Etwas wurde da gemacht. Ich bin nicht sicher, ob gerade bei dem Visier. Irgendwelche Schweißarbeiten, laufende Reparaturen, etwas wurde immer gemacht.

A: Ob es jetzt beim Visier war, kann ich nicht sagen.

F: Sie ist daran interessiert, weil dieselben Männer haben das repariert, als das Schiff noch den Finnen gehört hat. Und dann wann das Schiff nach Estland rüberkam, dann haben sie die Nachreparaturarbeiten zu Ende gebracht. Als das Schiff aus Finnland nach Estland rübergefahren wurde, gab es da etwas?

A: Ich bin nicht mit "Estonia" von Finnland nach Estland gefahren. Ich bin auf "Estonia" gegangen, als es hier in Kapli für Reparaturarbeiten lag, nicht Reparaturen, Vorbereitungen.

F: Was sie meint, daß ich zu viel inzwischen rede, machen wir so, daß sie noch mal fragt und Du wiederholst es wieder so, daß am Anfang gab es da Leute, vielleicht auch Finnen, Du weiß es nicht. Man ist da gewesen, aber Du weiß nicht, ob es bei dem Visier oder Rampe gemacht wurde. Dasselbe Gerede.

A: Ein Moment, machen wir jetzt eine Sache klar. Ich weiß ganz gut, was ist Rampe und was ist Visier. Auf dem Schiff wurden überall Schweißarbeiten durchgeführt. Man kann die Sache nicht so formulieren, daß da oder da, weil ich muß wissen, was sind diese für Dinge und ich weiß es auch.

F: Das ist gut dann.

A: Da gab es so viele Leute, daß ich mich nicht erinnern kann, wer da war und wer nicht. Es wurden Schweißarbeiten durchgeführt. Und sonst gab es viel Arbeit, weil wir noch über ein Monat in Tallinn geblieben sind.

F: Kannst Du sagen, ob auch beim Visier und Rampe Schweißarbeiten durchgeführt wurden?

A: Ich kann es nicht sagen, ich erinnere mich nicht. Es wird gesagt, das Schiff muß an einem bestimmten Tag losfahren und es wird auch losfahren. Dann kommen aber tausende von Menschen auf das Schiff und es werden jegliche Arbeiten gemacht, jegliche.

F: Wenn das Schiff schon fuhr, sind dann noch irgendwelche finnische Fachleute da gewesen und haben sie etwas gemacht?

A: Das ist ja so, wenn das Schiff schon fährt, dann während der Fahrt (...) wird da an dem Visier und Rampe nichts gemacht, das ist schon logisch. Im Hafen da wird immer etwas gemacht. Ich verstehe, was sie interessiert, ob da an dieser Ecke des Visiers bzw. Rampe geschweißt wurde, war das Visier geöffnet, in welcher Stellung sie war. Ich verstehe, was sie interessiert.

A: Es interessiert Euch, ob irgendwelche Arbeiten da stattgefunden haben. Es fanden überall Arbeiten statt. Er könnte genauso da irgendwelche Deckplatte wechseln, die die Rampe überhaupt nicht betrifft.

F: Für sie ist wichtig, ob es darunter auch Finnen gab.

- A: Bestimmt gab es.  
*Es hat Zeit gekostet, aber endlich sind wir angekommen.*
- F: Erinnerst Du dich, ob oft Finnen dabei gewesen sind. Oder haben Finnen immer geholfen?
- A: Machen wir eine Sache klar. Bald wird gefragt, wie sie angezogen waren, ob sie einen Koffer in der Hand gehabt haben. Das ist unmöglich, verstehen sie, damit beschäftigen sich ganz andere Menschen.
- F: Sie hat gehört, daß Du Kapitän Piht gesehen hast, als Du nach draußen gegangen bist.
- A: Ich habe mit ihm so nahe geredet.
- F: Und kannst Du darüber noch mal erzählen?
- A: Wie es alles war?
- F: Ja, was Piht betrifft.
- A: Als wir aus dem Schiff rauskamen, haben wir Rettungswesten angezogen. Ich war gerade damit fertig, einer Frau, sie ist leider ertrunken, eine Rettungsweste umzubinden, ich war gerade mit der Befestigung fertig, dann habe ich vor mir Kapitän Piht gesehen. Er erteilte Kommandos. Und er sagte, sei nett, helfe einer Rettungsinsel (Parv) zu öffnen. Irgendwelche Mädchen waren dabei, eine Insel (Parv) zu öffnen und ich erinnere mich bis heute an ihre Gesichter nicht. Als ich in dieser Richtung ging, kam eine Welle. Ich sah sie. Ich konnte mich nur festhalten, als die Welle zurückging. Das war alles.
- F: Hast Du verstanden?
- A: Ich wollte genaue Übersetzung.
- F: Künftig sind aus Schweden solche Informationen gekommen (von .....), als ob es im Boden (Bottan) des Schiffes eine Explosion gab und dadurch dieses Wasser reinkam. Was meinst Du über solche Gerüchte?
- A: Ich sage nicht ja und nicht nein.
- F: Aber Deine persönliche Meinung?
- A: Ich vertrete hier mich selbst und das ist meine Meinung.

- F: Was meinst Du, sollte der Untersuchungsausschuß sich daran interessieren, das untersuchen. Könnten sie da etwas finden?
- A: *Natürlich sollte man.*
- A: *Was geschieht jetzt eigentlich? Ist man unten gewesen oder nicht. Man ist unten gewesen, um nachzusehen, ob das Schiff wirklich da ist. Und dann ist es alles, oder?*
- F: So wie jetzt allgemein gesagt wird, daß diese Untersuchungsarbeiten nicht ordentlich durchgeführt worden sind.
- A: *Das ist meine Meinung. Ich meine gerade das, daß man war da unten und es wurde etwas gefilmt, bzw. die einige Abschnitte, die gezeigt werden sind. Ich meine schon, daß es unkorrekt gemacht worden ist. Vielleicht wurde es korrekt gemacht, aber das, was ich weiß, ist nicht korrekt gemacht. Und dann wird irgend etwas geredet, daß es abgedeckt werden soll mit Platten.*
- F: Hat die Kommission irgendwann sich für deine Meinung interessiert?
- A: *Ich war bei der Kommission, sie haben einfach gefragt, ...und welche Momente und ...  
Die Kommission muß sich ja nicht darum kümmern, ob es mich interessiert oder nicht.*
- F: Hat die Kommission die Meinung der Leute befragt, die auf "Estonia" sich mit technischen Fragen beschäftigt haben?
- A: *Ich zweifle daran nicht. Bestimmt hat er.*
- F: Was meinst Du über diese Schmuggel-Geschichte. Könnte da Schmuggel sein?
- A: *Nennen wir beliebige Presse in die Hand und lesen das. Es bedeutet, es passiert in der ganzen Welt. Das ist jetzt nur so aufgeblasenes oder heikles Thema. Etwas könnte bestimmt sein. Natürlich ist das nur Vermutung.*

## Fax exchange with christer eriksson

12-96 THU 10:40 ANSON TRADING AB

P.01

Herr Werner Hummel,  
Fax no +49-40 362198

Ljungbyholm, Sweden, Dec 5, 1996

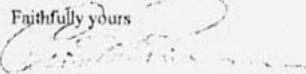
Re The M/s Estonia matter

Dear Sirs,

The other day I saw in a Swedish daily that the International Commission, investigating the Estonia disaster, has released a piece of information to the effect that there was something wrong with the bow door hinges and the Atlantic lock. I have earlier noticed that you suspect that someone could have manipulated the said details.

I do not know if it has any significance; you may already be aware of it, but during a trip onboard the vessel I noticed that welding works were done on the bow door while moored in Tallinn. This happened in the spring time of 1994. I went ashore at approximately 9.30 AM, when most of the passengers were already sight-seeing the city. When I returned onboard at 5.45 PM, I noticed that the workers were busy collecting the welding cables and removing the transformator. For all I know they may have been working all day long with whatever they were doing on the bow.

As I have already pointed out I do not know if this has any significance at all, if not I trust you to destroy this message. If you, on the other hand, should need to know more about this please give me a call on phone no +46-48030044.

Faithfully yours  


Christer Erikson,  
Klockarvägen 7,  
S-300 33 LUNEDSVIKEN

**The German Group of Experts  
investigating the sinking of M/V "ESTONIA"**  
c/o AHLERS & VOGEL · Schaar tor 1 D-20459 Hamburg · Telephone 49-40-371075

Christer Erikson  
Klockarvägen 7  
S - 38832 Ljungbyholm

Ihr Zeichen/Your Ref.

Unser Zeichen/Our Ref.  
WH/Hz

Hamburg/Date  
December 5th, 1996

re: "Estonia"

Dear Christer Erikson,

Thanks again for your call and your fax. We are very grateful for your help.

I am now attaching 2 large photos showing "Estonia" in Tallinn at the beginning of February 1994 and on 24.3.94, furthermore 1 video image from 30.4.94, i.e. only 4 days before your trip, on which severe damage to the visor bottom is visible.

I have marked on the large photo from 23.4.94 the location of the 2 visor hinges on forecastle deck and the Atlantic lock, which is actually below the open bow ramp on forepeak deck and can be seen in Tallinn from the quay only.

Kindly draw your observations into the most suitable photo and please consider carefully if the visor was in the fully opened position, as seen on the pictures, or if it was lowered down somewhat, which is technically possible and has been done on frequent occasions to carry out work at the visor bottom or inside. Please also consider whether there was painting done or paint pots standing around or being removed when you came back in the evening.

I am also attaching a drawing showing the side view of open visor / open bow ramp on which you could possibly indicate where the shower of sparks came down.

I am waiting to hear from you.

Sincerely yours,

Kind regards,  
*Werner Hummel*  
Werner Hummel

Encl.

P.S.: "Estonia" left Stockholm on 3rd May, 1994 and arrived at Tallinn on 4th May in the evening.

The German Group of Experts investigating  
the sinking of M/V "Estonia"  
Fax no +49-40 36 21 98

For the kind attention of Mr Hummel

Ijungbyholm Dec 10, 1996

**Re: Estonia**

Dear Mr Hummel,  
Thanks for your letter and photos in this matter. I shall try to reply to your questions the best I can, even though I'm afraid that you will be disappointed.

You are of course quite right, I cannot possibly have seen the Atlantic lock while passing over the ramp.

I have no recollection of the position of the visor. In any case it was opened enough for me to pass under it. I'll have to leave this question unanswered.

Nor do I have any recollections of ears of paint on deck. On the other hand we must consider that when I passed the works must only recently have begun and it seems logical to me that one welds first and paints afterwards. Paint works would have been made while I was ashore.

Judging from your drawing I can conclude that what I may have witnessed was an attempt to do welding works on either

- \* the lower part of the visor hydraulic cylinder, or
- \* the upper part of the ramp hydraulic cylinder, or
- \* the parts designated G13 through G17 on your drawing,

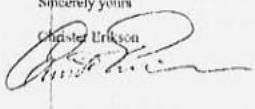
of which I rather believe most in the latter, because I distinctly remember that the work was done high up under deck.

Unfortunately my recollection tells me that the work was carried out on the port side, not on star board. I remember the giant welding transformator, looking distinctly Army surplus, standing nearly in the middle of the car lane, immediately inside the ramp, with the cables running to the port side.

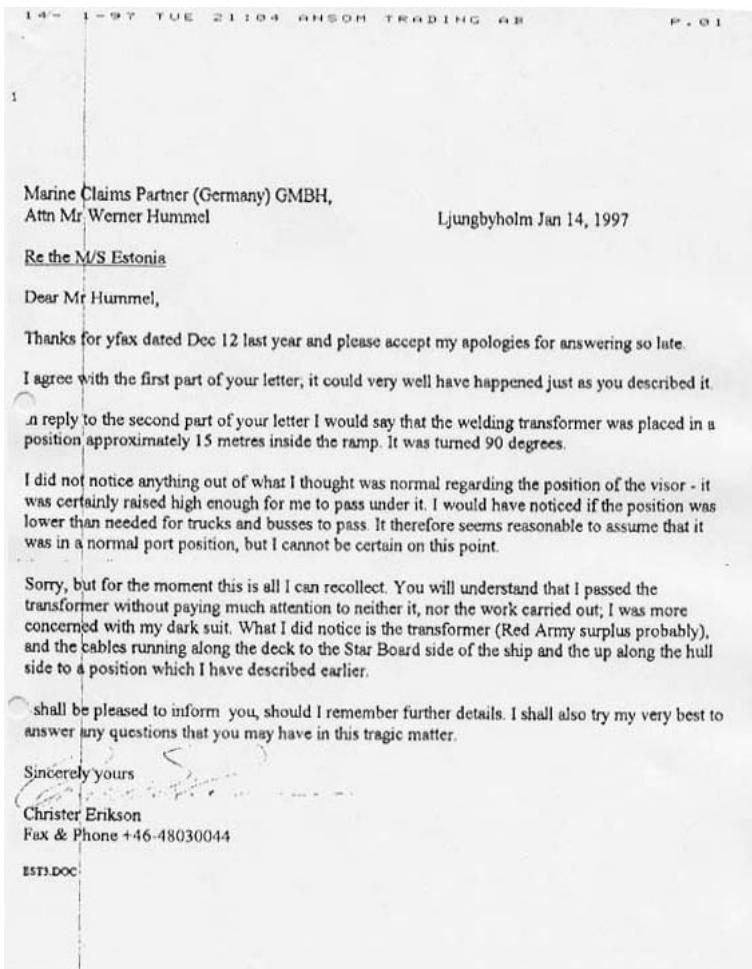
I am a bit confused over your information that the vessel arrived in Tallinn on May 4th in the evening. I seem to remember that we departed Stockholm on Tuesday the 3rd in the afternoon, arriving early morning on May 4th, not in the evening as you stated.

Sincerely yours

Christer Eriksson



4/8/2021



## Letter anton B paulomo

Enclosure 12.5.170

**Balt Invest OÜ.**

Consignor der Fähre "Estonia"

Majasa 29, 00250 Helsinki

Finland

J. L. Meier &amp; co Werft GmbH

Attention: Der Estonia - Gruppe

An den Vorsitzenden

Helsinki den 13. Dezember 1996

Sehr geehrter Herr Vorsitzender!

Ein paar Monate vor der Estonia-Katastrophe mussten die Autos am Bord des Schiffes drei Stunden im Hafen warten, bis man nach erheblichen Schwierigkeiten endlich die Tore zu dem Autotransportraum aufmachen konnte.

Ursache des langen Verzögerns war, dass die Schlosser der Tore nicht funktioniert haben, und schliesslich mit Gewalt aufgebrochen werden mussten.

Schon viermal nach der Katastrophe haben wir der Deutschen Botschaft in Helsinki diese Information die ursprünglich nicht den Medien gedrungen ist, vermittelt. Die Botschaft hat aber keinerlei Interesse an der Information gezeigt und mit uns kein Kontakt aufgenommen.

Obwohl das Ereignis schon ein paar Monate vor der Katastrophe stattfand, können Zeugen, die bei diesem Ereignis nur Bord der Estonia in ihren Autos gewartet haben, noch ausfindig gemacht werden.  
Ich persönlich kenne zwei.

Falls Sie das interessieren sollte, können Sie mit mir Kontakt aufnehmen.

Hochachtungsvoll  
Anton B. Paulmo, Geschäftsführer

## Statement Ulf hobro

1 (5)

**Enclosure 12.5.171**

m/s ESTONIA

PROTOKOLL fört över förhör med  
Hobro, UlfFörhöret hålls tisdagen den 22-november-1994  
med början klockan 10.35

Förhörsplats Estlineterminalen, Stockholm.

Förhörsledare Krinsp Lars-Erik Andersson och  
Krinsp Jan StålhamreNärvarande vid förhöret var Advokaten Jörgen  
Almelöv

ANMÄLAN K-84051-94

**DIKTERAT FÖRHÖR**

Protokollet utgör en sammanfattning av förhöret som i sin helhet upptagits på band.

Hobro är anställd som teknisk inspektör vid Nordström & Thulin AB. Hobro har varit ansvaryig för Estonias drift och underhåll samt budget och pengar. Han har haft sin placering vid Skeppsbron, men ofta besökt fartyget då det varit i hamn i Stockholm.

Hobro har varit engagerad i Estonia ända sedan planerna uppstod på att köpa båten. Han tittade på fartyget redan innan de togs i bruk. Hobro har till uppgift att gå igenom fartyget och titta på fartygets allmänna skick och kontrollera de certifikat som krävs för fartyget. Vid besöken ombord har Hobro kontakt med befälhavare och maskinchef och diskuterar de fel som uppstått på fartyget. Uppkomna fel åtgärdas i regel av besättningen men ofta måste reservdelar beställas och det sköts från land.

*Yondu F241*

*Z,*

2 (5)

ANMÄLAN K-84051-94

Det är Lennart Klevberg som sköter om reservdelsinköpen. Uppstår större fel på fartyget så anlitas specialister för reparationen.

När Estline tog över fartyget Estonia bedömde Hobro att fartyget var i gott skick. Fartyget skulle flaggas om till estnisk flagg, från finsk flagg och man måste då gå igenom alla certifikat och system. I samband med detta blev en del reparationer gjorda i Åbo och Tallin på varv. Sedan fartyget i januari månad 1993 sattes i trafik mellan Tallin och Stockholm har man vid två tillfällen haft läckage i propellerhylsan. Båda läckagen inträffade våren 1993. Felet åtgärdades då på varv. Reparationerna av propellerhylsan har besiktigats av Bureau Veritas. Till sin hjälp har Hobro, Tomas Rasmussen som varit placerad i Estlineterminalen som biträdande inspektör. Rasmussen har åkt med fartyget fram- och tillbaka vid ett flertal tillfällen och varit kontaktperson mellan fartygsbefälet och Hobro. Rasmussen har i stort sett haft daglig kontakt med fartyget.

Hobro uppgav att han är utexaminerad sjöingenjör med 20 år till sjös, varav 12 år som maskinchef. Han har också varit inspektör vid Sjöfartsverket. Sammanlagt har han varit i branschen sedan 1965.

Enligt Hobro har Rasmussen ägnat hela sin tid åt Estonia. Några problem med bogvisiret har inte förekommit på Estonia. Det har endast varit då bogvisiret isat igen som man fått väarma visiret för att få upp det. Uppvärmningen av bogvisiret sker genom att man spolar det med varmt vatten. Hobro uppgav att han inte hört talas om att man vid något tillfälle värmat på bogvisiret med svetsläga. Hobro har inte själv vad han kan erinra sig utför någon direkt inspektion av bogvisiret. Däremot kontrollerade han det och klättrade runt i visiret innan fartyget köptes av Estline. Någon direkt kontroll av bogvisirets låsanordningar eller signallamporna för visirläsen har inte Hobro utfört. Detta ingår enligt Hobro i rutinerna för fartygsbefälet.

*Händen F241*

3 (5)

ANMÄLAN K-84051-94

Rutinerna på Estonia var sådana att sedan lastning avslutats så stängdes bogport och därefter bogvisiret. Att läsanordningarna trätt i funktion kunde kontrolleras på en signalpanel på bildäck. På fartygets brygga fanns det dessutom indikeringslampor på vilka man kunde se då port och visir var stängda.

Ansvarig för lastning och lossning på Estonia var 2:e styrman och ansvarig för att bogport och visir var stängda är 2:e styrman eller båtsman. Två sådana styrmän som ej var med då Estonia förliste är Roland Lemmendick och Raul Allvee.

Roland Lemmendick arbetar numera på Estlines nya fartyg Mere Balticum som överstyrman. Lemmendick talar förutom estniska även engelska. Hobro uppgav att sedan fartyget togs i bruk i januari 1993 har det inte varit några anmärkningar på bogvisiret. Eventuellt kan det ha varit något hydraulickage på någon kolv. Inget fel har dock kommit till Hobros kännedom. Hade något större fel uppstått på visiret så skulle detta i så fall ha rapporterats till Bureau Veritas.

Hobro deltog i uttagningen av befälhavare och maskinchef till Estonia. Han bedömde att befälhavaren var mycket kompetent. Han hade flera års erfarenhet av persontrafik mellan Tallin och Helsingfors. Även maskinchefen hade tjänstgjort på fartyg som gått i trafik mellan Tallin och Helsingfors. Besättningen i övrigt var enligt Hobro väl så god som en svensk besättning.

På fråga om Hobro hade någonting att göra med säkerhets- och räddningsutrustning ombord, uppgav han att man i samband med fartyget flaggades till estländsk flagg gjorde en revidering av säkerhetssystemet ombord. Det var tvunget att detta anpassades till det estniska språket. Manualer och annat måste anpassas och översättas. Hobro var då inblandad i att sköta om de praktiska detaljerna med upptryckning av skyltar mm. Även befälen ombord var engagerade i detta. Räddningsflottorna ombord skall besiktigas och packas om en gång om år och detta sköttes av Hobro och Klevberg. Ompackningen har skett hos en auktoriseringad firma i Stockholm.

## ANMÄLAN K-84051-94

Vid omvälvning skickades ett totalt flottar i taget till firman. På Estonia fanns omkring 60 stycken livflektar. Flektarna på Estonia var av två typer, en typ som kastades i sjön och utlösts genom att man ryste i en lång lina. Den andra sorten var sådan att den hängande i en kran blåstes upp varvid passagerarna skulle stiga i flotten som sedan hissades ner på vattnet. Hobro kallade dessa för kastflektar och kranflektar. Ombord fanns mest kastflektar. Samtliga flektar var utrustade med s.k hydrostatisk utlösare, vilket innebär att dem automatiskt löses ut om de följer med fartyget ner till ett visst djup.

Livbåtarna ombord på Estonia fästades en gång, var 14:e dag. Besättningen hade övning var 14:e dag, vilket innebär att båda besättningarna hade en övning på varje 14-dagars period. Övningarna var av olika slag, vid olika tillfällen. Ibland sjösatte man livflektar, ibland livbåtar och ibland var det fråga om brandövning.

Estonia var utrustad med fyra stycken huvudmotorer och två propellrar. Motorerna låg med två motorer på varje propelleraxel sammanbundna med växel. Elektriciteten kommer ifrån två stycken dieselelektriker. De fyra motorerna kan sedan köras i olika kombinationer allt från en motor till alla fyra på en gång. Maskinrummet är ständigt bemannat. Hur mycket motorkraft som behövs regleras genom kommunikation mellan bryggan och maskinrummet. Vid normal gång används i regel bara tre motorer vid färden över Östersjön. I skärgården kör man oftast med endast två motorer.

På fråga vilken hastighet Estonia normalt gick med över Östersjön överlämnade Advokat Almelöv en skrivelse som också överlämnats till haverikommissionen där man jämför tids tabeller och farter med Silja Lines fartyg.

Hobro uppgav att på bildäck fanns TV-kameror för övervakning. Bl a fanns en kamera riktad mot bogporten.

5(5)

ANMÄLAN K-84051-94

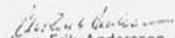
Däremot fanns ingen kamera placerad mellan bogport och bogvisir. Till kamerorna var anslutet monitorer av vilka en fanns i maskinrummet och en på bryggan. Den monitor som fanns placerad på bryggan fanns i ett s.k kartutrymme. Monitorn skiftade automatisk bild mellan kamerorna var 5:e sekund. Monitorn var ej placerad så att den som styrde båten kunde se någonting på monitorn, utan var tvungen att gå några meter åt sidan, för att titta i monitorn. Det fanns alltså ingen möjlighet att med kamera och monitors hjälp, se då bogvisiret rycktes loss från fartyget. Hobro framhöll att man inte ens från själva bryggan kan se fören på fartyget.

Estonia var utrustad med ett huvuddäck för bilar. Dessutom fanns ett hissbart bildäck, alltsammans fanns dock inom samma utrymme. Inströmmande vatten på bildäck kunde alltså observeras på monitorer i maskinrum och på brygga under förutsättning att någon, just då, tittade på monitorn. Anledningen till att monitorn på bryggan inte står tillgänglig precis vid styrman beror på, att han i så fall skulle bli bländad av ljuset, från monitorn och förlora sitt mörkerseende. På bryggan skall finnas två styrmän och en utkik. Inomskärs ska på bryggan finnas befälhavaren och lots.

Avslutningsvis uppgav Hobro att det under tiden från januari och fram till förlisningen inte har varit några fel av allvarligare art ombord på Estonia. Det har endast förekommit normala driftstörningar.

Förhöret avslutat klockan 11.05.

Stockholm den 22 november 1994

  
Lars-Erik Andersson

Kriminalinspektör

PK 1

Utskrivet den 23 november 1994/ E. Eriksson

## Explanatory note

## Enclosure 12.5.172

Explanatory Note

The sensors of the Atlantic lock on M/V ESTONIA had a magnetic sensitive element, not a mechanical one as the drawing VON TELL 49111-373 indicates. The approximate location of the sensors is indicated on the enclosed scheme.

At the time the vessel was flying the Estonian flag, the sensors were not replaced. Only the distance of the sensors has been regulated and indication checked. The fact that there are several built-in intermediate relays in the signalling control panel of the ramp and the bow visor implies that this kind of sensors were used from the very start of the operation period of the vessel. The fact that the davits, lifeboats, car deck platforms, stern ramps, lifts and the big goods lift also have the same kind of sensors, contributes to the assumption.

February 23, 1995

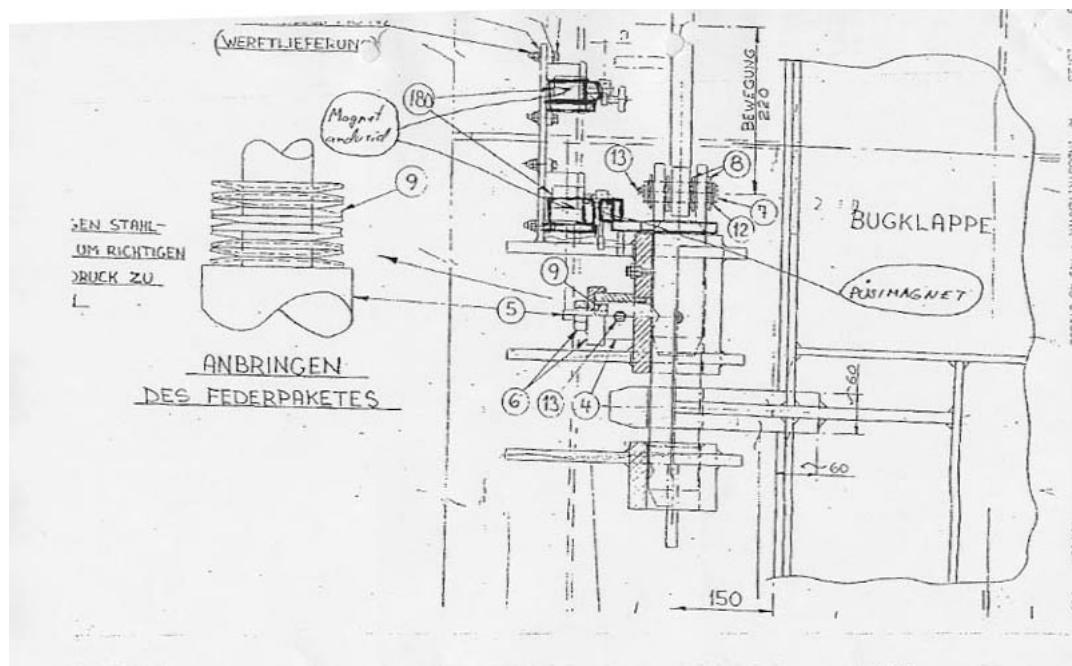
Chief Engineer on M/V ESTONIA H. Moosar

Electric Engineer on M/V ESTONIA M. Doronjuk

Electrician on M/V ESTONIA D. Salomon

Electrician on M/V ESTONIA A. Rohumaa

Boatswain on M/V ESTONIA H. Leik





B/W

## NORDSTRÖM &amp; THULIN

1 (2)

Civ. Ing. Börje Stenström  
Ringvägen 24  
182 46 ENEBY BERG

Stockholm den 15 nov 1995

Börje,

Bifogar :

- ✓ 1. Jörgen Almclövs (JA) protokoll från hans och Per-Erik Källströms (PEK) möte med Estonias eling/elektriker i Tallinn den 6 november 1995.
- ✓ 2. PEK:s tekniska noteringar från ovanstående möte (jämte den "frågelista" jag skickat med PEK som stöd.)\*
- ✓ 3. SL montage MOLNDAL ritn. nr 79-1-033, blad 34 & 35.
- ✓ 4. Fotografi av Estonias brygga 1994-04-10.
- ✓ 5. ROLF JANSEN ritn. nr S 13.862/01-10, blad 10.
- ✓ 6. SIEMENS AG ritn. nr (3) G.18000-A9108-P199.
- 7. Skiss med indikatorbeteckningar för bogvisir och bogramp.
- ✓ 8. Schoenrock ritn.nr SBN4-233.
- 9. Papper till läns från 3/10 -95.

Här till har jag följande kommentarer:

JA\_protokoll.(1)

På min förfrågan efter att ha tagit del av protokollet, bekräftar PEK att besättningsmedlemmarna vid mötet hade framhållit att de rutiner som beskrivs i första och sista stycket på sidan 2 samt de två första

\* kommer på post direkt från PEK - jag hade ingen kopia

Nordström & Thulin AB (publ)  
Swed. address Skeppsholmen 54  
Postal address P.O. Box 1215  
S-111 82 Stockholm, Sweden  
Bostäderadress ABF 144 51 71-2472

Telephone +46 8 613 1900  
Telex +46 8 21 81 07 Management/Finance  
+46 8 21 22 26 Dry Cargo/Tanker Dept.  
+46 8 20 45 12 Shipping Dept.  
+46 8 20 45 04 General & Personnel

Telexograms Nordström & Thulin  
Tele 13250 Management/Dry Cargo  
13170 Tanker Dept.  
11967 Shipping Dept.



2 (2)

styckena på sidan 3 tillämpades strikt.

PEK bekräftade också för mig att vad som står om MD:s utsago i fjärde stycket på sidan 2 inte betyder att MD fysiskt kontrollerat sensorerna utan att MD dragit slutsatsen därför att båten inte varslat MD om felfunktion i samband med stängning före avgång. Tjänstgörande eling, befann sig enligt utsago normalt alltid i maskinkontrollrummet före avgång för att alltid vara tillgänglig för ev. avgångsförhindrande upplykande fel.

#### PEK:s tekniska noteringar (2)

PEK har bemödats sig om att bara ta med uppgifter som eling/elektriker var eniga om. Det som någon av dem var osäker på har utlämnats. Därför har klart besked på en del punkter, t.ex. fästskruvarnas material och typ, inte redovisats. Det som jag angav i mitt svar till BV var baserat på PEK:s och mitt tidigare möte med enbart DS där han var mera säker på dessa punkter.

#### Ritningarna (3), (5), (6), (7) och (8)

Ritningarna (3), (5), (6) och (7) är samtliga återfunna ombord på Mare Baltikum eller fartygets landarkiv. Som framgår av (1) anser eling att (3) visar arrangemanget på Estonia medan (5) och (6) återger Mare Baltikums arrangemang i princip. Beteckningarna Gxx i (7) förefaller gemensamma för både Estonia och Mare Baltikum. PEK försöker ta reda på från SL i Mölndal till vilket fartyg deras ritning (3). Möjligen kan Du också få ut mer av varvet i detta avseende ??

Ritningen (8) har PEK fått från Schönrock efter Tallinnmötet. Den visa klara likheter med elings skisser. PEK har beställt en sådan magnetbrytare för att visa eling, och utröna om det är densamma som satt på Estonia. I så fall kommer PEK också att försöka få reda på från Schönrock om de hade en större beställning på sådana från Meyerwerft under Viking Sallys byggnadstid. Möjligen kan Du från varvet få bekräftad huruvida magnetsensorerna på Estonia tillkom redan under Viking Sallys byggnation trots att fartygets ritningar utvisar mikrobrytare ??

#### Fotografiets (4)

Förefaller bekräfta att Estonia bara hade 2 par lampor rött/grönt för bogvisir/bogramp, dvs ingen separat för Atlantlåset som fallet var på Mare Baltikum.

Bästa hälsningar  


MEMORANDUM CONCERNING MEETING ONBOARD "MARE BALTICUM" ON 6TH NOVEMBER 1995 IN TALLINN

Present: Per-Erik Källström, Estline AB (PEK)  
Jörgen Almelöv, Advokatfirman Ihre & Almelöv AB (JA)  
Electric engineer on M/V "Estonia" M Doronjuk (MD)  
Electrician on M/V "Estonia" D Salomon (DS)  
Electrician on M/V "Estonia" A Rohumaa (AR)  
Boatswain on M/V "Estonia" H Liek (HL) (only partly present)

1. Service onboard "Estonia"

MD since December 1992.

DS since January 1993 (to be rechecked!).

AR since January 1993 (to be rechecked!).

2. Maintenance of the Magnetic Switches

The magnetic switches were maintained every sixth month in accordance with AMOS D (MD).

3. Chronology of Events

MD confirms that he observed the magnetic switches already in December 1992. None of the electricians has any particular recollection of the magnetic switches, apart from ordinary maintenance, up to the end of the spring 1994.

From the spring 1994 upto the beginning of September 1994 MD and DS experienced difficulties with the magnetic switch in closed position 3-4 times each. When the atlantic lock was in fully closed position there was no green indication on the indicator lamp at the control panel inside the ramp. The problem was solved by a simple adjustment of the magnetic switch to 10-15mm indicating closed position.

When the boatswain noted that there was no green light in spite of the atlantic lock being in closed position this was reported to the electrician onboard. MD or DS would then visually inspect whether the atlantic lock was in closed position or not. If the weather forecast was reasonably good the electrician would thereafter recommend that the vessel should leave without a green lamp indication on the control panel inside the ramp. However, with a bad weather forecast the problem would immediately be rectified (MD, DS, HL).

Some time between July 6 - 21 DS installed a woodbar under the magnetic switch indicating closed position. This was done on his own initiative to solve the problem with correct distance between the permanent magnet and sensor, final distance being 10-15mm.

Some time between August 20 - September 2, 1994, MD checked the magnetic switch system. This was due to the problem with the lack of a green lamp indication on the control panel inside the ramp. The problem was as set out above, i.e. that the gap between the magnetic switches was too wide. The problem was rectified and thereafter worked well. AR was also present during MD's rectification work.

MD confirmed that the system worked well in the morning of September 23, 1994. He left the vessel on the 24th.

AR confirmed that he did not receive any information concerning malfunctions of Atlantic lock indication in the evening of September 28, 1994.

The electricians can confirm that to the best of their knowledge no one else have been working with the magnetic switches. Furthermore, they do not have any knowledge about anyone removing the magnetic switches.

HL described the locking procedure as follows; The boatswain was the person actually locking the bow ramp/visor. When this

had been done in a proper way it was reported to the cargo mate. He in turn reported to the mate on the bridge that everything was OK.

If there was something wrong with the locking device an electrician was called upon. The electrician would then make a research of the problem and then report to the boatswain whether there were any remaining problems.

4. The control panels inside the ramp and on the bridge

With respect to the control panel inside the ramp MD confirmed that the system worked just as described in 2.1.1.7 in the Joint Accident Investigation Commission part report (my own reference to this section since it was not read or disclosed to MD).

Concerning the control panel on the bridge there were green/red indicating lamps concerning fully closed ramp and fully closed visor respectively. However, there were no cables from the atlantic locking to the bridge. Accordingly, there was no indication on the control panel on the bridge concerning whether the atlantic locking was in open or closed position. A photo was shown which supported this comment from the control panel on the bridge.

This was compared with the present situation on "Mare Balticum" where there is a separate position switch on the bridge concerning the atlantic locking being in closed or open position.

According to MD there was no indications whatsoever that "Estonia" was built with the Atlantic lock being connected to the control panel on the bridge.

5. Drawings concerning electrical installation

had been done in a proper way it was reported to the cargo mate. He in turn reported to the mate on the bridge that everything was OK.

If there was something wrong with the locking device an electrician was called upon. The electrician would then make a research of the problem and then report to the boatswain whether there were any remaining problems.

4. The control panels inside the ramp and on the bridge

With respect to the control panel inside the ramp MD confirmed that the system worked just as described in 2.1.1.7 in the Joint Accident Investigation Commission part report (my own reference to this section since it was not read or disclosed to MD).

Concerning the control panel on the bridge there were green/red indicating lamps concerning fully closed ramp and fully closed visor respectively. However, there were no cables from the atlantic locking to the bridge. Accordingly, there was no indication on the control panel on the bridge concerning whether the atlantic locking was in open or closed position. A photo was shown which supported this comment from the control panel on the bridge.

This was compared with the present situation on "Mare Balticum" where there is a separate position switch on the bridge concerning the atlantic locking being in closed or open position.

According to MD there was no indications whatsoever that "Estonia" was built with the Atlantic lock being connected to the control panel on the bridge.

5. Drawings concerning electrical installation

MD referred to a drawing marked "79-1-033" and stamped with the date 1980-07-07. This drawing concerning the electrical installation of switches/control panel shows that there were no cables going from the atlantic locking to the control panel on the bridge. According to MD the drawing reflects the actual wiring onboard "Estonia" except for the fact that microswitches instead of magnetic switches are shown on the drawing concerning the Atlantic locking.

MD also referred to drawing S13.862/01-10 concerning the same electrical installation onboard "Mare Balticum". On this drawing it is clear that the atlantic locking is connected with the control panel on the bridge.

#### 6. BV

MD was sometimes present when Anders Wirstam from BV surveyed electrical installations. He is not certain whether Anders Wirstam actually knew whether the atlantic locking was connected to the control panel on the bridge or not. Otherwise, no particular comments or remarks have been made by Anders Wirstam.

#### 7. When were the magnetic switches installed?

According to MD it is most likely that the magnetic switches were installed already at the time "Estonia" was built. The reason being that there are a number of other "similar type" magnetic switches/inductive switches concerning e.g. life boats, car deck platforms, stern ramps, lift etc. Furthermore, in MD's view it would be unnecessarily costsome to switch from mechanical to magnetic switches. MD's theory is that the plate to which the magnetic switches were mounted could have been prepared for mechanical switches from the beginning. However, during the building of the vessel it was decided to change from mechanical to magnetic switches.

#### 8. Technical comment

(For Per-Erik Källström's comment).

**A. SENSORERNA****1. Allmänt**

1. När senast före haveriet 28/9:  
 a) arbetade någon av de tre "handgripligen" med sensorerna ?  
 b) kan någon av de tre bekräfta att man av annan anledning (vilken i så fall?) observerat att sensorerna fanns på plats ?
2. Förutsätter att alla tre kan bekräfta att ingen av dem av någon anledning avlägsnat sensorerna utan att återmontera dem på plats ?
3. a) Vet någon av de tre om det finns någon annan ur besättningen som har arbetat med eller kan tänkas ha haft anledning att arbeta med sensorerna efter tidpunkt enligt 1a/b ovan och fram till haveriet?  
 b) I så fall vem och varför?
4. Fick Arvi Rohumaa någon information om felfunktion av något slag på läsindikeringarna i samband med avgången från Tallinn 28/9?
5. a) Etablerade/gängse rutiner vid fel på läsindikeringarna?  
 b) Förekom det att man gick från hamn utan att åtgärda rapporterat fel?  
 c) Hur/vem konstaterade i så fall att läsningarna var OK?

**2. Tekniskt**

1. Sensorernas/magnetens material/dimensioner/form/typ?
2. Fastsättning av sensorer/magnet jämfört med originalritningen med microswitchar?  
 a) antal hål för fastbulorna/enhet?  
 b) hålens placering på enheterna resp på fästplåtarna?  
 c) hålens dimensioner (dia)?  
 d) var något av hålen i fästplåtarna de gamla microswitcharnas fästhål?  
 f) fastbulornas/skruvarnas material (järn/mässing?)/dimensioner (M5/M6?)/längd?/ty (sexkanthuvud/spårhuvud?)
3. Distanスマ特iel mellan sensorer och fästplåt:  
 a) material (trä/plast/bakelit/metall)?  
 b) dimensioner?  
 c) var sensorernas fastbultar borrade igenom ev. distansmaterial eller var distansmaterialet enbart fastklämmt mellan sensor och fästplåt?
4. Fästplåtarna jämfört med originalritningen:  
 a) dimensioner?  
 b) placering?  
 c) fastsättning till underlaget (svets/skruv)?
5. Kabelaget till sensorerna:  
 a) Fastsättning fram till sensorerna (rör/klamror)?  
 b) hur satt rör/klamror fast?  
 c) hur var kablarna anslutna till sensorerna?

**B. INDIKERINGARNA**

- 
1. Avikeler på Diana II och Estonia jämfört med Diana II:s kopplingsschema?  
a) speciellt huruvida Atlantlåsets indikering på bryggan ingick i gemensamindikeringen  
för övriga lås/var separat/inte ingick alls?

[Ang.atlantilåsets sensorer på Estonia.](#)

Med hävning till Jörgen Almelövs och undertecknads möte med elektrikerna i Tallinn den 6 November. Följande framkom följande vad tekniska detaljer beträffar. MD står för M.Doronjuk och DS står för D.Salomon.

1) **Sensorernas material?**

Enligt samstämmiga uppgifter från MD och DS var materialet mässing eller brons.

2a) **Antal hål för fästbulaterna/enhet?**

Enligt MD och DS var det två hål på sensorn och likaledes på magneten, vad magneten beträffar finns en osäkerhet eftersom de aldrig behövt arbeta med den.

b) **Hålens placering på enheterna resp.fästplåten?**

En samstämmig bild från MD och DS beskriver hålens placering på sensorn, se bifogad skiss. Vad fästplåten beträffar är bilden oklar.

c) **Hålens dimensioner?**

Entydigt från MD och DS är håldiametern emellan 6-8mm.

d) **Var något av hålen i fästplåten de gamla microswitcharnas hål?**

Tveksam minnesbild från samtliga närvarande „men man enas om att ett hål på sensorn för stängt är det gamla microswitchhålet. Det andra hålet se svar 3c.

f) **Fästbulaternas/skruvarnas data?**

MD och DS enas om att de ej med säkerhet kan bestämma varken material sexkant eller spårhuvud. Däremot att dimensionen är M6. Att muttern sitter under fästplåten och att en planbricka ligger emellan bult/skruvskalle och sensorkropp.

3) **Distansmaterial emellan sensorer och fästplåt:**a) **Vad slags material?**

DS är säker på att det var av trä, han har den bestämmda uppfatningen efter att konsulterat den motorman som var honom behjälplig vid monteringen av denna distans någon gång i tidsperioden 67-21/7.

b) **Dimension?**

DS som alltså monterade distansen uppskattar den till en tjocklek på ca:20mm. Ytan den utgjorde är i paritet med sensorns bottenplatta.

c) **Distansmaterialet genomborrat av fästbulaterna eller fastklämt av sensorn?**

DS är åter säker på sin sak när han säger att man använder en sladdlös bormaskin och borrade upp det ena hålet igenom både distansbiten och fästplåten. För det andra hålet borrade man upp distansbiten och använde gammalt hål i fästplåten. Det ska här noteras att det endast är sensorn för indikering av stängd position som har denna distans och möjligen också ensam om dylika hål-arrangemang.

4) Fästplåt jämfört med originalritningen:

- a) Dimension på plåten?  
MD och DS kommer efter vissa referensmätningar fram till 450 x 260mm  
MD och DS tror att den är original, den har mångårig patina som vid närmare betraktelse har en röd primer i botten som övrig plåt i denna region.
- b) MD och DS säger att den sitter i sin originalposition i en 60 graders vinkel mot bottenplåten.
- c) Fastsättning till underlaget?  
MD och DS är eniga om att den var svetsad.

5) Kablaget till sensorerna:

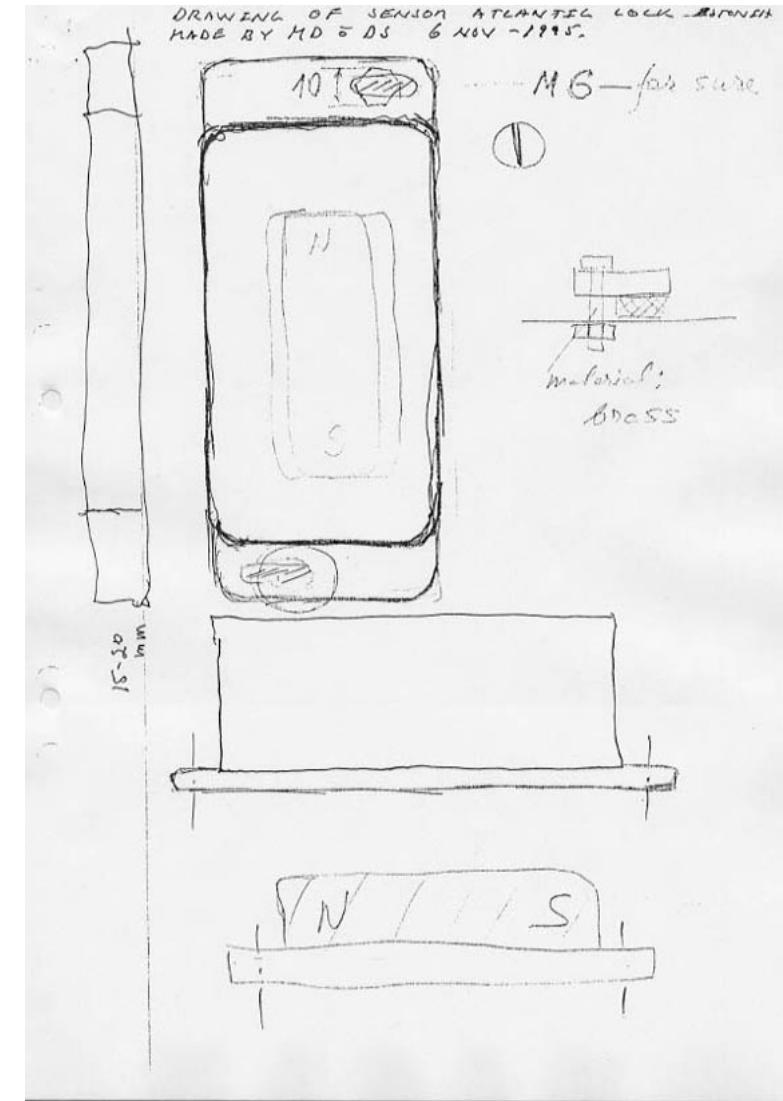
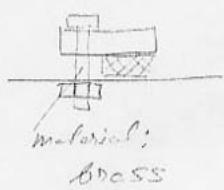
- a,b) Fastsättning fram till sensoreerna?  
MD och DS beskriver installationen som att fram till fästplåten kom kablarna i ett rör svetsat men kanske också fastst med någon klammer. Efter röret är kablarna fästade med klambers skruvade i en eller båda sidor.
- c) Hur var kablarna anslutna till sensorerna?  
Se bifogad skiss, någon klar minnesbild finns ej.

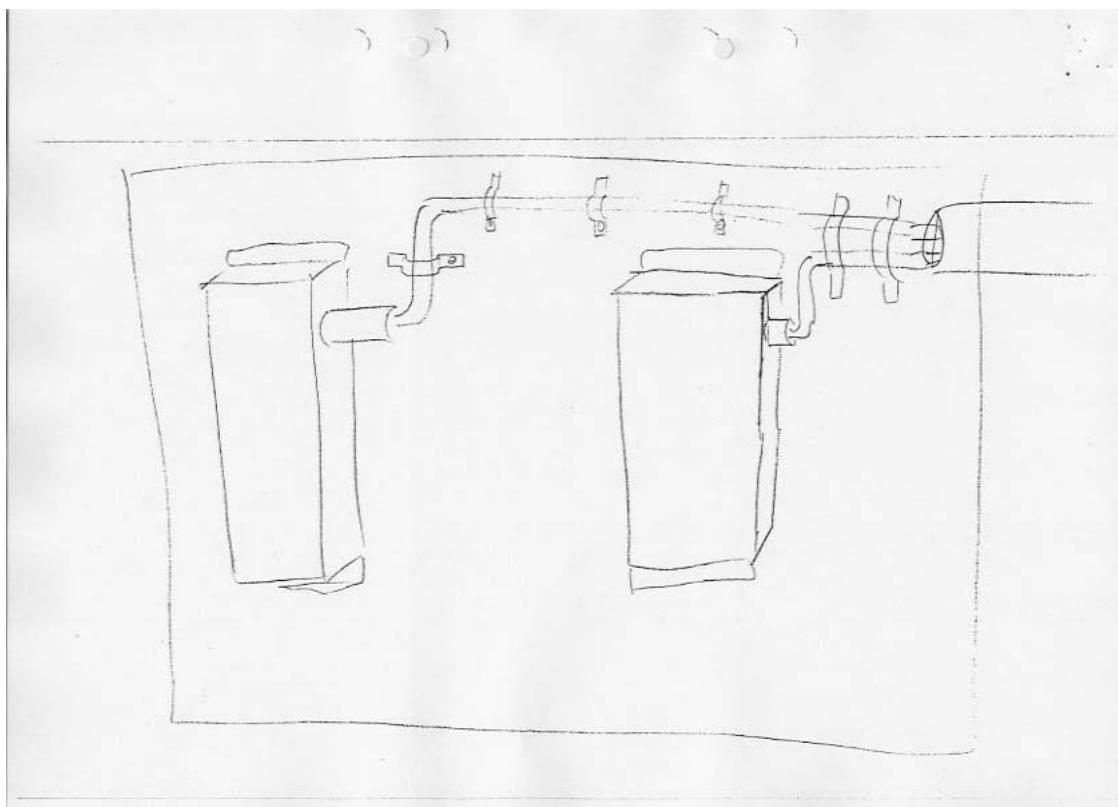
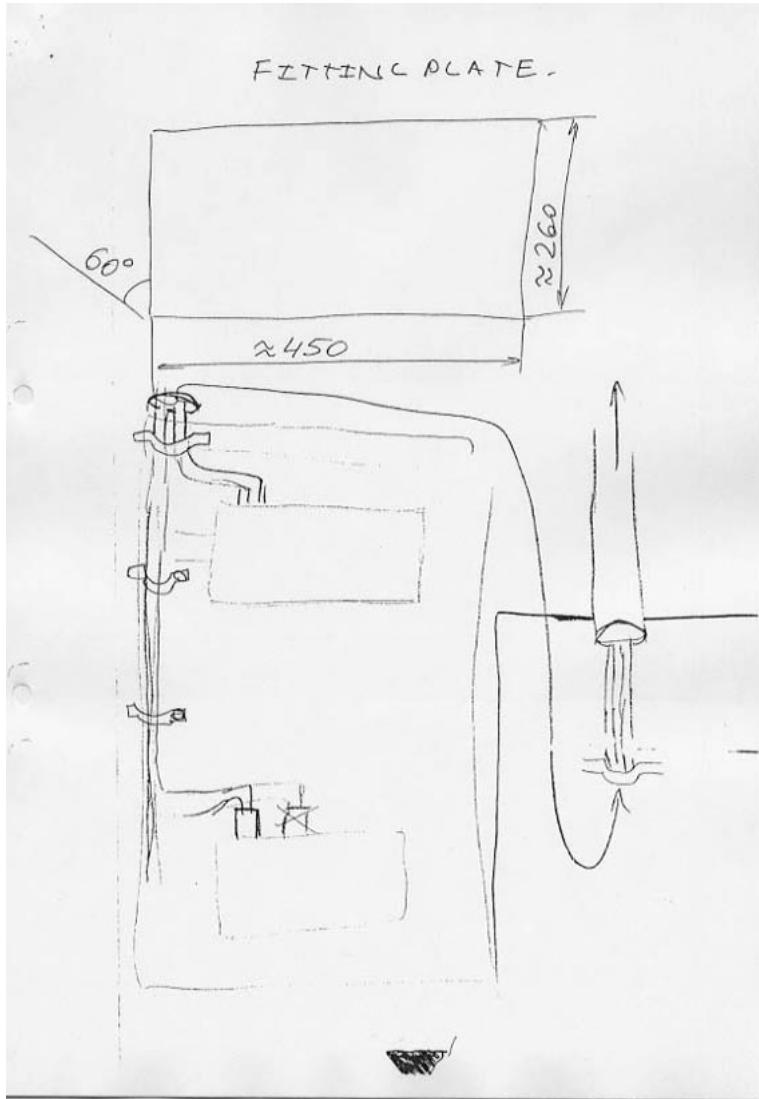
Per-Erik Källström  
Sup.int.EstLine/ESCO

DRAWING OF SENIOR ATLANTIC LOCK-BARRELS  
MADE BY HD & DS 6 NOV -1995.



M6 - far sure.







## Interview sillaste /Moosaar

### Enclosure 12.5.174

Interview of Henrik Silaste (HS) / Moosar (TM)  
by Jutta Rabe - Spiegel TV at Stockholm - Ariadne Hotel on 10.3.95

#### Cassette No. 1

Q: What was your function onboard?

HS: I was responsible for the sanitary systems.

TM: I was not directly responsible for anything. The person above me was responsible and I had to do the work. I dealt with oil separators, etc. and whatever was connected with hydraulic - the lifts, visor, ramps.

HS: We worked together, but the 2nd engineer had the responsibility.

Q: Henrik, please tell us what you experienced from the moment it got serious.

HS: I was called into the engine room because there was a problem with the vacuum. While I was doing the repairs I felt 2 heavy impacts which I thought would be resulting from waves as it happened before, but thereafter the list occurred and I realised that something must be wrong. I rushed to the control room and asked the watch engineer: "What's going on?" He said: "Water is penetrating into the cardeck (garage)." I looked to the monitor and there I could see that the water was coming into the cardeck. It was visible that the water was coming in rather strong and the vessel listed more and more like the hand of a watch (indicating by his hand what he means.) and did not stop, the listing occurred in steps but did not stop.

TM: The main engines have oil sumps (lubrication oil system), if the suction pipe is sucking air due to the list of the vessel the main engines shut off automatically.

HS: The watch engineer and the motorman tried to do everything possible and I stayed in the control room as long as necessary. Certain consumers shut off by themselves and we saw that nothing more could

be done. Therefore, I and the motorman left the control room while the watch engineer stayed behind. He remained in the control room until he received permission from the bridge to leave and until the emergency generator started. When the power failed, i.e. the generators shut off, we were on the 5th/6th Deck. Immediately thereafter the emergency generator started. We left the emergency exit on the 8th Deck through the boiler room. Outside I was most afraid of panic, but somebody gave strict orders and therefore it was relatively disciplined. I could, however, imagine what the panic might have been like inside the vessel. In the aft part of the vessel the liferafts were located. We went there and opened some 5-6 which fell partly into the water and partly remained on deck. At sometime the emergency light also went out and just some illumination by the batteries remained. When the ship's bottom was already out of the water it became completely dark.

TM: (Interrupted) No, it did not become dark at all. (HS shrugged his shoulders).

HS: (Continued) When the bilge keel was out the water we went into the water. Thereafter I saw the vessel only once when I realized that there was no visor anymore.

We drifted past the bow of the vessel and we were lucky not to have been sucked into it. We were then in the raft and pulled in 6 persons in addition. All 16 were rescued, at first the helicopter picked up 13, and 40 minutes later the remaining 3 were rescued among whom I was myself. We were brought to hospital at Turku.

Q: At what time did you feel the 2 impacts?

HS: I cannot say this exactly, it was possibly at 01.00 hrs. or a little later.

TM: When the list occurred I looked immediately at my watch and then it was some minutes before 01.30 hrs., at that time there was already a heavy list.

Q: Anything unusual about half an hour before?

HS: No, just as it is when proceeding though a storm.

Q: On what deck did you work?

HS: I was working on 0-Deck.

Q: Did you hear at any time the Skylight call?

HS: After the main engines had shut off already.

Thereafter the girl from the reception said on the loud speaker, with a crying voice, that there is an emergency situation and the vessel has to be left.

Q: How many minutes between the two announcements?

HS: The "Skylight" call is for the crew and the other for the passengers which came directly thereafter.

Q: Who did the "Skylight" call?

HS/

TM: It was Juhani (Note: the chief mate).

While the chief mate said it for the crew, the information girl was responsible to say it directly thereafter for the passengers, and that's what she did.

Q: How did you communicate with the bridge?

HS: We had no walkie-talkie, but in the control room there was in the middle a button to be pressed and then you could talk to the bridge where was the same system. Due to the list it might be difficult for those on the bridge to reach this button, but apparently there had been somebody.

I personally had no communication to the bridge. The watch engineer was responsible for that. That was Margus.

Q: Please tell exactly what you saw on the monitor?

HS: The monitor is also in the middle and so we could see it. At first there is the visor and then comes the ramp. We could see that at the sides of the ramp the water was penetrating.

After a drawing of the bottom had been made, it was established (or ascertained) why the water had penetrated at the sides. The monitor can be switched to the different cameras on the cardeck. I was afraid that the trucks would move, then everything would happen faster. Fortunately all the trucks were standing in their positions.

Q: Did you see Silver Linde on the cardeck?

HS: No, it was already later when I came into the control room, when the ship had already some list.

Q: Did you hear anything of the communication between Silver Linde and the bridge?

HS: No, it was not possible to hear.

Q: Who told you to go up?

HS: It was Margus.

Q: Tanel, where were you at the moment of the list?

TM: Asleep, because I was to go on watch at 04.00 hrs.

I was sleeping, but felt the wave impacts all the time, which was not unusual, woke up when the vessel did not upright after the listing, my first thought was that we were aground as it had become so quiet. It was the same feeling as being aground, but the ship was listing further; then the "Skylight" call came, I dressed myself, my cabin was at the port side in the aft part. It was impossible to go through the door, my function would be the lifeboat No. 3. It was impossible to go to the starboard side.

Q: Please tell exactly what you saw on the monitor?

HS: The monitor is also in the middle and so we could see it. At first there is the visor and then comes the ramp. We could see that at the sides of the ramp the water was penetrating.

After a drawing of the bottom had been made, it was established (or ascertained) why the water had penetrated at the sides. The monitor can be switched to the different cameras on the cardeck. I was afraid that the trucks would move, then everything would happen faster. Fortunately all the trucks were standing in their positions.

Q: Did you see Silver Linde on the cardeck?

HS: No, it was already later when I came into the control room, when the ship had already some list.

Q: Did you hear anything of the communication between Silver Linde and the bridge?

HS: No, it was not possible to hear.

Q: Who told you to go up?

HS: It was Margus.

Q: Tanel, where were you at the moment of the list?

TM: Asleep, because I was to go on watch at 04.00 hrs.

I was sleeping, but felt the wave impacts all the time, which was not unusual, woke up when the vessel did not upright after the listing, my first thought was that we were aground as it had become so quiet. It was the same feeling as being aground, but the ship was listing further; then the "Skylight" call came, I dressed myself, my cabin was at the port side in the aft part. It was impossible to go through the door, my function would be the lifeboat No. 3. It was impossible to go to the starboard side.

HS: It would also have been impossible for me, I had lifeboat No. 9.

MT: It is not possible to go through the door when there is a list to starboard, the door cannot be opened.

Cassette No. 2

TM: We went through the window. We opened the window and climbed out. It was good that the cabin was on Deck 7. There were no lifeboats, just liferafts. There also no lifevests, just from time to time some came blown by the wind, there were also not many people there, most of them were standing in the middle; we opened a liferaft on the deck, we did not want to go to midships as there were so many people, I later heard that Capt. Piht ordered the opening of liferafts on starboard side, which, however, all drifted away empty; then the stern began to sink into the water and the women went into the liferafts.

About Piht I heard later onboard "Mariella" from the security man (Note: Safety Officer Erwin Rohden).

Q: You were on watch when the vessel left?

TM: Yes, my job was to prepare the main engines.

Q: When did you go on duty on that day?

TM: As usual, it was a normal day. I had to lubricate the rudder engine, control oil levels and check for leakages.

Q: Result?

TM: Everything was o.k. No written recording. It was my job to do it twice a day, always during my watch (when they leave and when they came into the Swedish archipelago). Once a week they make a check of the steering engine. Last time, beginning of the week.

Q: Hydraulic checks by anybody else on that day?

TM: I don't know whether my principal had done it that day. Normally I did it and only when something was wrong then we rectified it together when the ship was in port. Normally also my superior made his own round and also the boatswain always notified us when it was leaking somewhere because he did not like it dripping on his deck.

Q: Repairs recently?

TM: Definitely no major ones. Smaller things we always have to do.

Q: When did the ship leave?

TM: Always on time, at 07.00 hrs.

Q: Was the bow visor closed upon leaving the quay?

HS: It is impossible to leave port with open visor, because everywhere green lights have to be on. Only for the Atlantic lock there are no signal lights on the bridge, but just on the cardeck next to the ramp.

Q: Did you see them yourself?

HS: No, it is the mate and the boatswain who are on the cardeck, whilst the master is on the bridge. They have communication via walkie-talkie.

Q: Did you check the hydraulic system before departure?

TM: At 16.00 hrs. I came on watch, I made a round in the engine room, went to the deck and there made my round and checks.

Q: Does this include the hydraulic systems for visor and bow ramp?

TM: These are 2 different systems and I looked to see that everything was functioning.

Q: How about Atlantic lock and sidelocks of visor?

TM: The Atlantic lock was also checked. It is located in a very unsuitable place and in Tallinn, when the visor was open, one could walk across the ramp ashore and have a look at the lock.

HS: If it had not functioned the lamp would not have been on.

TM: Sometimes there were problems. It all functioned, but the light did not go on. When there remained a gap, i.e. the bolt was not fully closed, the sensor did not react.

HS: It has to be very close. If it is not to the end, it does not react.

TM: The bolt has to go to the end, if not, the sensor did not react.

Q: When was that?

TM/HS: (excited): Sometimes, e.g. the lamp burned out and then during the 2 years, sometimes.

But it refers to the aft ramps.

(Note: There is no similar installation in way of the aft ramp.)

TM: The bolt is moved by a hydraulic cylinder through the lugs (indicating this by his hands).

There has never been a problem with the Atlantic lock, because of the way it was built, it is a very safe construction.

Q: When had you last been down to the Atlantic lock personally?

TM: I cannot say exactly, the last shift we were supposed to go ashore in Tallinn, this was this shift.

HS: It was in Tallinn.

TM: I did not go down there every day, but definitely during this shift. It was our last day.

HS: Ca. 2 days before, for sure during the last week.

Q: In Tallinn the bow ramp is down? How can you see the lock?  
TM: You can see it from the quay. (Makes a drawing showing the situation in Tallinn and in Stockholm with the hatch on forecastle deck and down into the visor.)

Q: Light inside the bow visor?  
TM: No, just light by torch.

Q: Did you know that at sea there was water inside the visor?  
TM: No, it was not full. Maybe some condense water.

Q: How do you know? Have you ever been down there at full speed?  
TM: No, but it is not possible that it was full of water.  
HS: The visor has packings.  
TM: Because it is above the water surface, the water inside must freeze in winter.

Q: We have heard that you had difficulties in winter and that the ice had to be hammered away?  
HS: If there had been water, it would have been frozen, because there was no water it could not freeze.  
TM: There were sometimes problems with the stern ramps when during closing ice was sticking between the sealings.  
HS: When closing/opening it there were sometimes problems, because the visor was too heavy.

Q: We will now show you some pictures from the inside of the visor.  
(Note: Two pictures are shown: the upper part and the forepart of the 3rd stringer).  
HS: This is up.  
TM: No, it is somewhere in the middle, the lock is further down.

Q: Yes, but people who came down through the hatch on forecastle deck, not only one time, many times. This is the condition of the visor now in Hangö.

TM: Yes, there is a hatch and a ladder, where you could go down.

Q: Why did you go down so often?

TM: Just routine controls. It comes from our Russian education just to control and control and not only if there is a problem, but to solve it before there is a problem.

Q: Despite the green light showing that the bolt was closed, still somebody went down to check whether it was really closed?

HS: I am not a mechanic myself, but if there remains a gap, there is a very short distance to a magnet, when there remains a small gap the lamp does not go on.

TM: If the lamp is not on, something is wrong. There is no possibility for the lamp to be just on, this does not exist.

Q: So the light was not always green?

TM: No, there was never such problem, when the visor went up, it was red. It is so that with hydraulic cylinders everything can happen, e.g. can oil leak.

Q: Is it true that even when the bolt did go in, the light was not green?

HS: No, there was never a problem. There is no possibility that it does not work.

Q: But he said it already?

HS: No, it was just an explanation.

Q: Did you ever see the control panel yourself? It was on the cardeck.

HS/TM: Note: They are both showing it on photo.

Q: Did you ever see the lights red during the last shift?

TM: This was not our business. It was the job of the boatswain. If something was wrong, the boatswain informed the electrician and the 2nd engineer.

This was Vahter (other shift) and Peter Tuur.

The electrician of the relief crew is Mikael Doranjukuk, who was in Germany when it happened to take over "Mare Balticum".

Q: Do you know what activates whether the lights are red or green?

HS: It was something like "inductive" and there was some sort of limit switch, but we do not know this exactly. Ask the engineer.

Cassette No. 3

Q: When did you come on "Estonia"?

HS: 16th January 1993 when the vessel came to Tallinn into the dock. The first crew was the same crew which took over the vessel in Turku. I came onboard when the vessel came from Turku Shipyard to Tallinn.

Q: How was the ice winter last year?

TM: The bow visor was once so heavy due to frozen ice and could not be opened. I do not remember when it was.

HS: It was presumably the first winter in 1993. The 2nd winter was not that bad, there was no ice.

Q: Are you sure, because 1994 was the heavy winter when the "Sally Albatros" grounded, etc.?

HS: Oh yes, if that is so, I have mixed it up. Then it was in 1994.

Q: Ever any delays due to ice?

HS: Once it was with M.B., then we were not allowed to leave.

TM: I cannot say.

HS: I have not paid attention to that, because I was employed in the engine room. This is the job of the mates.

Q: The main engine is operated from the bridge?

HS: Yes, it is bridge controlled.

Q: You can hear by the sound of the engines whether it slows down?

HS: Yes, obviously.

Q: Did you hear during going through ice that the engine slowed down?

HS: When they go through heavy ice there is so much noise. Furthermore, the engine is steered by the computer.

Q: It is the navigation computer which controls the engine output depending on the distance left.

HS: Yes, probably.

Q. of the interpreter: Did I understand you correctly that you have said already everything you know?

HS: Yes, I have said everything I know, but it might be that the investigators find out something more, possibly the Commission. The questioning in the Turku hospital was without proper translation and I have subsequently read in the newspaper that words have been put in my

mouth which I have not said. Therefore, I am reluctant to talk too much now.

Q: Please mark your cabin on the drawing, show the vacuum system, control room and the way from O-Deck to control room as well as the emergency exit.

Note: Was done by the witnesses. Both their cabins were port side.

Q: How did you spend the 27th when in Tallinn?

HS: Working day sometimes allows free hours, but on this day I had not been ashore.

TM: I was in town after lunch to buy some newspapers and returned straight away to the ship. Came on board to the 5th Deck. I did not see the visor through the windows from the terminal.

HS: My working time is from morning to evening and when the passengers are onboard I am on standby all the time. This has saved me, because if I had been in my cabin I would possibly not have survived.

The motormen are also working from morning to evening, but they are not disturbed at night.

On "Estonia" we were for 2 years and everything was made in order by ourselves, whilst "Mare Balticum" now is in bad shape delivered by the Swedes.

HS: Whilst we checked and checked in order to prevent breakdown beforehand, the Swedes apparently always waited until something broke down. That's why nothing was wrong with the visor and the locks.

Q: You had a Swedish inspector?

HS: Yes, this was Lloyds and Veritas, and these were good specialists, also N&T.

Had they ever warned us before that there was a weak point, but that they did not do. It was all done in secret. They had exactly the same, but

one cylinder was holding, but as nothing happened it was not told. If it would have been told, they could have strengthened the system. After it happened the control lights for the Atlantic lock were also installed on the bridge (on M.B.).

Q: You told the women who have arranged this interview that you have something new to tell us, that you have some different opinion from the International Commission?

HS: This was a misunderstanding. I have told what I have seen. Further facts are up to the Commission.

Q: Any speed reduction before the automatic shut-down of main engines?

HS: At this moment I was not in the engine room, maybe Margus can answer that. I came into the engine room after the list had already occurred and two of the engines had already stopped.

Q: Did you know the Captain personally?

HS: Yes, we were like a big family.

Q: Please explain his personality.

HS: He had high education and the human relations were also o.k., one could always go to him with problems. He was a very good captain.

Q: What about the 2nd Captain?

HS: Know him very well. He is in my opinion the same guy as Andresson, very well respected.

TM: Have seen the ZDF film, but Piht is not on there.

Q: Have you been asked by the police or the Commission?  
HS: It was very bad. In the hospital first came the Finns, then the Estonians, then the Swedes, and finally the Commission to ask questions.  
TM: When I came to Tallinn, I was questioned by the police immediately upon arrival at the airport.  
HS: We had no time to recover, of course, we all were confused to some extent.

Q: How many survivors on your raft were crew?  
HS: 5 crew and 1 from orchestra. 6 crew plus 10 passengers.

Q: Do you remember that "Estonia" ever returned to Tallinn to carry out repairs to the visor or bow ramp? or to Stockholm?  
HS/  
TM: No, never during these 2 years.  
TM: Watch : 04.00-08.00 - 16.00-20.00.  
HS: All day plus standby.

Cassette No. 4

They are marking on the general arrangement plan the cameras on the cardeck which could be moved.

Q: Could you make a drawing how you saw on the monitor the water coming through the ramp?  
HS: Makes drawing which is attached to this transcript and explains:  
There is a tarpaulin roll.  
TM: This way also the camera becomes wet if the water comes in like this.  
HS: Maybe with the first in-rush.  
(indicating on the drawing)

This is the ramp, this the tarpaulin roll, which is closed in winter when the vessel is in port and by which the escape of warmth is prevented. There is one car. Water is coming in at the sides.

Q: So you have not seen that the ramp was totally open?

HS: No. The ramp was visible, we could see it.

Q: And at that time the vessel already had a list?

HS: Yes, when I came up there was already the list, but I could not see at which side more water came in. The ramp was visible, I could see the ramp.

Q: At what time was that?

HS: I cannot say exactly, it was after 01.00 hrs. After I had felt the 2 impacts, how long could it have been until I came up? Maybe 3-5 minutes.

While I was working I felt the two impacts, then the list followed and I rushed up to the control room where I saw what I have explained, this might have been 3-5 minutes later.

Q: The cars were not moving?

HS: It was very good visible. The cars are so close to each other, ca. 20 cm, that it is not possible for them to move. they did not move.

Q: Were they lashed by rope or wire?

HS: They have special ropes for that fixed to the floor.

HS: The small cars have blocks behind the wheels when there is a storm. The big cars are always lashed.

Q: Was there a storm that night?

HS: Yes, there was storm that night.

Q: Tanel, when had you last been down in the bow visor room through the hatch?

TM: Cannot say exactly, definitely during the last shift in Stockholm.

Q: When did you last see the green lights?

TM: I don't see that, because when I am there the doors are closed.

4/8/2021



Besöksadress: Södra Kajen 37, Värtahamnen. Postadress: Positionen 117, 115 74 STOCKHOLM  
Telefon: 08-665 78 00. Telex 13960. Telefax: 08-662 76 70

## Statement Arvi Myyrylainen

**Enclosure 12.5.175**

Statement by Arvi Myyryläinen, master mariner

I, Arvi Myyryläinen, state as follows:

I was born July 1, 1933 in Mikkeli, Finland. I went to sea in 1950, and I worked at sea for 20 some years, during the last 6 years of that period as master in world-wide traffic. 1970 I began work as pilot in Finland, and in 1974 I took up work with Pohjola Insurance Company Limited in Helsinki, working with hull marine insurance. I did both underwriting, claims handling and survey work, and I retired from Pohjola January 1, 1996 as claims manager.

Already during my career with Pohjola, and also thereafter I have occasionally assisted the German Marine Claims Partner GmbH, a surveying firm, in regard of various surveys and findings of facts in Finland. After my retirement from Pohjola I have and I still am working as consultant for Pohjola mainly in regard of hull insurance claims.

In early 1995 I was contacted by Mr. Werner Hummel from Marine Claims Partner GmbH in regard of the Estonia-disaster. Mr. Hummel asked me to find out about some facts relating to the vessel, as the vessel had been until 1993 flying the Finnish flag and it was likely, that for instance the Finnish Board of Navigation and various private corporations had knowledge about the vessel. Mr. Hummel was mainly interested in the insurance arrangements, but he asked me also to, if possible, find out about certain circumstances in Tallinn, Estonia, in regard of port facilities, schedules, pilot services etc.

I started to perform ~~as~~ requested, and I did within short over the phone report about my preliminary findings to Mr. Hummel. Then, after a few weeks Mr. Hummel advised me that he would be visiting Helsinki in order to make a daytrip to Tallinn such as to find out about certain facts in regard of the disaster. Mr. Hummel requested me to join him on the voyage. We took the M/V Georg Ots on January 17, 1995 to Tallinn, and immediately after our arrival we paid a visit to the deputy harbour master captain Yrjö Saarinen of the port of Tallinn. This gentleman turned out to be a former employee of the Estonian Shipping Company, wherefore he was rather reluctant to discuss anything at all, although he had been kind enough to show us around in the port.

After this meeting I suggested to Mr. Hummel, that we should pay a visit to Mr. Uno Laur of CMM Ltd in Tallinn. Mr. Laur, who is a master mariner, was and is familiar to me as he, and his company, had acted as Pohjola's local claims agent in Tallinn for a number of years.

Mr. Laur received us in his offices, and I introduced Mr. Hummel to him and Mr. Hummel informed Mr. Laur about his occupation and the purpose of his visit to Tallinn. The discussions were conducted in the English language.

The topics of the discussions were twofold; the Estonia-disaster was discussed in general terms, and in addition to that a possible prospective of business co-operation between Mr. Hummel's establishment and Mr. Laur's firm was discussed. As the latter discussions are of no interest in the present context, I do not discuss them further.

In regard of the Estonia-disaster, the discussion, as said, moved on a rather general level. I knew from before, that Mr. Laur had previously been employed by the Estonian Shipping Company, and I also of course knew, that he due to his profession had a rather good knowledge of the local tonnage. This is of course understandable considering, that Mr. Laur for some time already had worked as average agent and hull surveyor.

After a while the discussion turned to the condition and behaviour of the bow visor, as we all speculated in the cause of the disaster. In this connection, Mr. Laur told us, that the vessel for some time already had encountered problems with the locking system of the bow visor, and he especially mentioned the so called Atlantic lock.

It should be said, that both I myself and also Mr. Hummel knew what a so called Atlantic lock is, what the purpose of that lock is and also that it is being operated hydraulically.

Mr. Laur told us that the lock could not be operated hydraulically, instead it had been opened and closed by means of hammering the bolt with a sledge. This exercise was undertaken by crew members prior to opening and after closing the visor. Mr. Laur was quite certain about this matter, and I got the impression that he was quite well informed in this context.

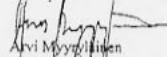
I also immediately afterwards made notes about the discussion, wherefore I have a good recollection of the same. My good recollection of the contents of these discussions is also based on the fact that I in my own mind considered the information about the faulty Atlantic lock and about the manner, in which this lock was operated, as quite extraordinary. However, in this context it should be added that the information was, perhaps not after all so extraordinary, because I had from experience with other vessels owned by the Estonian Shipping Company and which were insured by Pohjola, observed that the maintenance standard of those vessels was noticeably lower than what I was used to in regard of Finnish flag vessels.

We stayed with Mr. Laur in his office for about one hour whereafter we left and returned late in the evening the same day to Helsinki where we arrived at 21 hours. Although late in the evening, I

wrote down my notes when I arrived at my home, where I have a PC.

This statement is true and correct and I am prepared, if requested to do so, repeat it under oath.

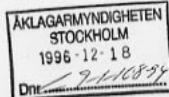
Helsinki, April 24, 1997

  
Arvi Myöhänen  
Master mariner

## **Statement tomas rasmussen**

## Enclosure 12.5.176

Tuben 96018  
C9-1-108-94



Protokoll fört vid telefonförhör med Tomas Rasmussen anställd vid Österströms rederi AB Valdemarsvik, tfn 0123 -19600, mob 070 - 556 74 24.  
Förhöret hållt den 17 december 1996 med krinsp L-E Andersson som förhörsledare.  
Förhöret hållt via högtalartelefon och närvarande på tjänsterummet var advokat Jörgen Almelöv.  
Förhöret påbörjat kl 11.08.

Rasmussen hördes med anledning av sitt engagemang i fartyget Estonia.

Rasmussen kom till Estonia redan då fartyget gick under annat namn och finsk flagg mellan Umeå och Vasa. Han var sedan kvar ända till fartygets förlisning. Rasmussen arbetade under Ulf Hobro som tillförordnad inspektör och fungerade som kontaktperson mellan besättningen och N&T. Rasmussen deltog i arbetet då fartyget flaggades från finsk till estnisk flagg. Det var översättning av språk och ny skyllning ombord. Rasmussen såg till att alt fungerade mellan den estniska besättningen och N&T och till en början mellan den finska besättningen och N&T. Rasmussens arbete omfattade hela fartyget, mest socialt. Han hade inget övergripande ansvar över maskinbefälet eller annan personal och hade ingenting med fartygets drift att göra. Rasmussen genomförde inte själv några inspektioner eller kontroller. Han fungerade sedan fartyget omflaggats som kontaktperson främst mellan fartyget och Kleberg som var inköpare på land. I början var Rasmussen ombord i fjortondagarsperioder, han och Anders Andersson avlöstes varandra. Så småningom blev Rasmussen mera landbaserad och äkte någon tur i veckan med fartyget. Rasmussen gjorde inga egna inspektioner av säkerheten ombord. Rasmussen hade ingenting med lotsningen att göra utan detta sköttes av Andersson. Rasmussen har utbildning på maskin och arbetade därför mest med budget och inköp tillsammans med Hobro och Kleberg.

Allt ombord fungerade mycket bra. Kontakten med de estniska befälerna fungerade bra och det förekom inte några konflikter med befälhavarna. Rasmussen bedömde säkerheten ombord som mycket bra. De hade bra övningar, stort engagemang och besättningen fungerade bra. Rasmussen iakttog aldrig någon alkoholförtäring bland besättningen. Befälhavarna Andresson och Pihi gjorde ett bra jobb och fungerade bra. De var ambitiösa och duktiga. Några incidenter observerade inte Rasmussen. Han deltog aldrig i fartygets framförande. Estonia var enligt Rasmussen i mycket bra skick. Fel som uppstod åtgärdades omgående. Det mesta sköttes ombord. Kunde det inte åtgärdas ombord direkt diskuterades det med Rasmussen och sedan med Hobro. Alla fel fördes i datasystemet AMOS och varje månad körde man ut en lista så att man kunde se vad som skulle åtgärdas och vad som redan åtgärdats. Behövde cheifern ha något åtgärdat ordnade Rasmussen och Hobro detta.

Hur bogvisiriet kontrollerades visst inte Rasmussen. Då visiriet öppnades och stängdes sköttes det av båtsman eller styrman. Indikeringslampor för visiriet fanns på bryggan. Rasmussen hörde aldrig talas om något fel på visiriet läskolvar eller att det var problem med öppning eller stängning av visiriet någon gång.

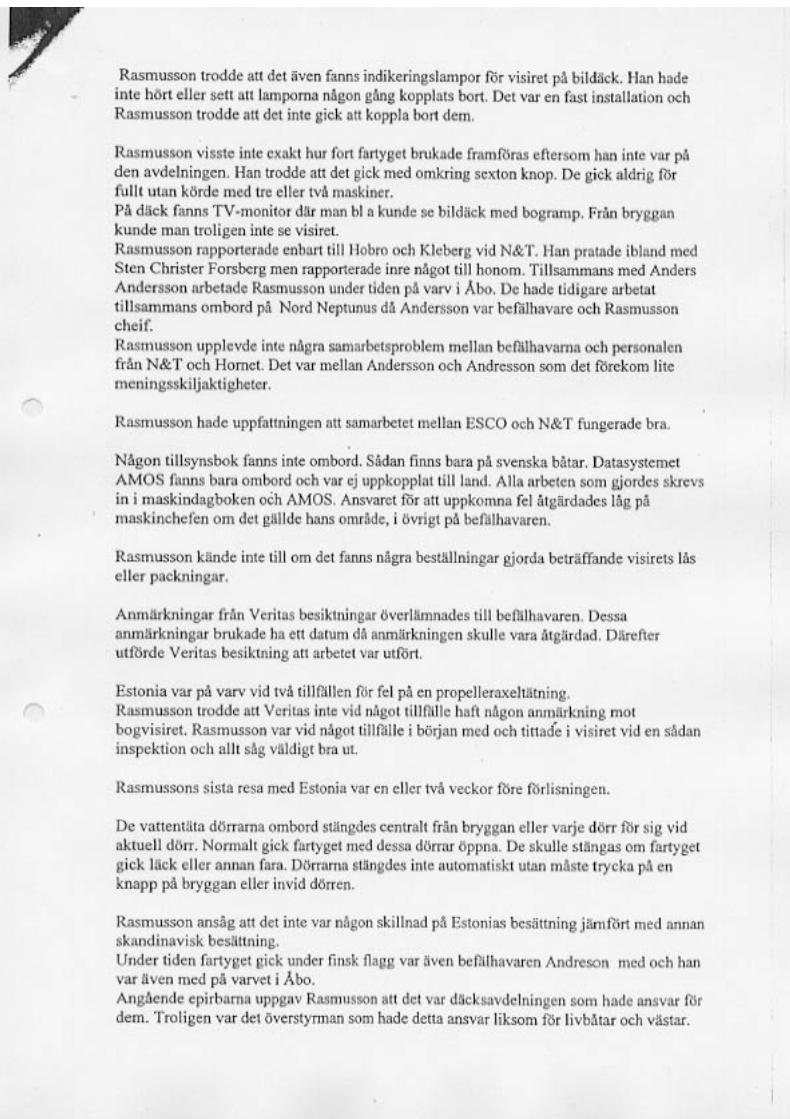
Rasmussen kände inte till om det på Estonia förekom någon annan ansvarsfördelning mellan befälen. Enligt Rasmussen var Andresson och Pihi kompetenta befälhavare då de övertog befälet. Förhållandet mellan befälhavarna och besättningen var bra.

Lastning och lossning på bildäck sköttes av en styrman. Lastning och lossning sköttes normalt. Trailer surrades med kätting i durken. Vanliga bilar surrades nog inte.

Lars-Erik Andersson  
Krinsp

Förhöret slut kl 11.40

Protokollet utgör en sammanfattning av förhöret som i sin helhet upptagits på band.



## Statement rain Oolmets in tallinn

D14 ↗

Central Investigation Bureau of Police

Protocol of Interrogation of Witness

October 3, 1994

Mr. Rein Oolmets, b. April 16, 1994, was interrogated by Mr. V. Karmi, Chief Investigator of the Bureau of Investigations of Transport.

Mr. Oolmets is an Estonian studying at Estonian Maritime Academy.

The interrogation took place in the Bureau of Investigation.

The evidence given by Mr. Oolmets:

I am a student at the Estonian Maritime Academy. From July 11, 1994 to September 11, 1994 I was working on M/V ESTONIA as a maintenance-team sailor. Among others I was given a task of painting the deck in the bow of the ship. My main working time was the time when the ship was berthing in ports, both in Tallinn and in Stockholm. My work was supervised and co-ordinated by Mr. Vello Ruuben, the boatswain. He was quite an accurate man and also disapproved of unnecessary idling during the working hours. I'm not quite certain of the exact date, but one afternoon after half past four, busy with painting the bow visor on the deck. As the bow is in raised position only in Tallinn, I was painting the part that was otherwise not visible. Before painting I had also polished and primed the visor. While painting, I once again could not help noticing the cracks in the bow visor fastenings, which were the result of the fatigue of metal. When re-painting the bow visor, I noticed them too. The cracks were visible only with the bow in raised position. The starboard side fastening mechanism/box of the visor had a crack of nearly 10 cm in length. The port side one had a 6-cm-long crack. There was also a crack in the welding between the bow visor and the fastening beam, which was about 2 cm long. I am prepared to show the location of the cracks on drawings.

I told this to another maintenance-team sailor Rudissaar, who advised me to go and tell the boatswain. The boatswain was at the time busy with loading the cars, and I decided not to interfere with his work. Later I forgot about this fact and thus the subject was never touched upon by me. After the accident I had pangs of conscience, as this might be connected to the accident that happened. This is why I have come here to talk about it.

I am not a specialist, thus I do not know theoretically how the cracks in the bow visor had occurred. Yet the existence of the cracks is a fact which I have seen with my own eyes.

Rain Oolmets

## Statement rain Oolmets in hango

## Enclosure 12.5.178

Memorandum from hearing Rain Oolmets about cracks in the visor of m/v ESTONIA.  
Hanko 24.3.1995

Present: Estonia Oolmets, Rain, witness (RO)

Neidre, Ean, master

Rannat, Ruta, interpreter Estonian-Finnish

Sweden: Stenström, Boje, member of commission (BS)

Finland: Lehtola, Kari, member of commission

Rahka, Klaus, expert, interpreter Swedish-Finnish

Rahikka, Harri, expert

Räisänen, Jyrki, expert

Seppinen, Heikki, expert

- BS: When were observations made of cracks in the visor of m/v ESTONIA?  
 RO: I observed them while painting on the bow deck of the m/v ESTONIA in early August (1994). Painting was done in the port of Tallinn.  
 BS: Were there one or more painters?  
 RO: Mostly there were three of us.  
 BS: In what position was the visor when You worked?  
 RO: The visor was open, otherwise we could not have seen the cracks.  
 BS: Where on the visor did You do painting?  
 RO: Almost all around. We used ropes to help climbing.  
 BS: Was loading of the ship done while You painted?  
 RO: Yes.  
 BS: Did You use ladder from the ramp to get to the underside of the visor?  
 RO: The ramp was used for traffic and we could not use it.  
 BS: What colours did You paint?  
 RO: Both green and white (ie both the dock surface and areas rising from the dock).  
 BS: Can You show from the visor where the cracks were?  
 RO: Those parts have been removed, why I cannot show the crack locations.

(the hinge remains had been removed for metallographic investigation and mechanical testing, why crack locations could not be demonstrated)

BS: Could You indicate on these sketches where the cracks were?

RO: The hinges have to be viewed from the front (looking toward the stern). The cracks could then be observed in the fillet weldments between the visor side hinge lug and the bearing bushing. The cracks were on the "inside" weldment and could therefore not be observed with visor in the closed position. To the left of the observer (starboard side) cracks were in both hinge lugs, to the right (port) one crack was observed in the lug close to the ship centreline (see drawing).



View from under the visor toward the stern of m/v ESTONIA. The observed cracks are indicated by narrow lines.  
 The visor side hinges have been drawn bold.

The cracks were less than 10 cm long (ref to hearing protocol/Estonian police).

BS: Thank You. You have been of great help.

Keeping the notes

*Klaus Rahka*  
Klaus Rahka

## Interview rain Oolmets in tallinn

Enclosure 12.5.179

24

RAIN OOLMETS  
Praktikant

0050

Sie machten in diesem Herbst, als die Katastrofe passierte, auf "Estonia" ein Praktikum. Welche waren Ihre Aufgaben?

Meine Arbeit war wie die Arbeit vom Reparaturwesen. Wir strichen und säuberten im Schiff. Morgens sammelten wir die Müllsäcke ein und legten neue Müllsäcke hin.

Wie lange dauerte das Praktikum ungefähr?

Von Mitte Juli bis Mitte September. 2 Monate.

Sie haben nach dem Untergang von "Estonia" bei der Polizei eine Aussage gemacht, daß die Untergangssache möglicherweise an den Bugklappen lag, weil die Bugklappe gewisse Schäden hatte.

0152

Ich selber ging nicht zur Polizei. Die Verteidigungspolizei hat mich aufgesucht. Ich hatte diesen eigentlich dem Onkel meines Schwagers erzählt. Wahrscheinlich hat er jemanden dieses weitererzählt.

Wie lautete Ihre Aussage bei der Verteidigungspolizei?

0216

Ich berichtete über meine Beobachtungen.

Welche Schäden haben Sie an der Bugklappe beobachtet?

0231 Als ich da vorne sauber machte, sah ich an den Hängen der Bugklappe kleine Risse. Ich dachte, daß jemand die schon gesehen hätte.

Erzählten Sie das der Verteidigungspolizei?

Ja.

Können Sie jetzt etwas näher über die Farbarbeiten und über die Schäden an der Bugklappe berichten?

0254 Eigentlich konnte man die Schäden nur dann sehen, als die Bugklappe auf war, in Tallin als die Autos vorne runterfuhren. Das sind solche Mengen - auf einer Zeichnung kann man das genauer anschauen. Eigentlich auf einer Seite waren solche Risse, vielleicht als Folge einer mechanischen Wirkung.

Sie sagten von einer Seite war der Riß 10 cm lang, und von der anderen Seite ungefähr 6 cm

26

lang. Das sthet in Ihrer schriftlichen  
Aussage.

0332 Kann gewesen sein.

Eine ganze Weile ist vergangen, aber ich  
glaube, daß Sie Ihre schriftliche Aussage  
jetzt nicht verneinen?

Nein.

Es gibt auch Zeichnungen, auf denen Sie  
zeigten, wo genau die Risse waren?  
Es gibt eigentlich keine genauen Zeichnungen.

Ich habe selber nach meinen Erinnerungen  
aufgezeichnet.

Die erste Aussage machten Sie bei der Vertei-  
digungspolizei. In der zweiten Aussage  
berichteten Sie, daß Sie den Bootsmann  
darüber informiert haben.

0406 Nein den Bootsmann habe ich darüber  
nicht informiert.

Es war gerade während der Zeit, als die Autos  
auf's Schiff geladen wurden. Und der Bootsmann - bei dem mußte man arbeiten. Er hat  
genau beobachtet. Er mochte es nicht, wenn  
jemand während der Arbeitszeit nicht arbeite-  
te. Dann kam ich gar nicht dazu, um ihm das  
sagen. Ich dachte eigentlich, daß es schon  
bekannt war. Deswegen vergaß ich, das zu  
sagen.

27

Wie viele Menschen sahen die Schäden.

Einem Reparaturmatrosen habe ich das gezeigt,  
aber die anderen haben das glaube ich nicht  
gesehen.

Konnte einer der Vorgesetzten auch von den  
Schäden wissen?

0446 Ich fürchte nein. Die waren an solcher  
Stelle, die man so nicht sehen konnte. Man  
mußte schon etwas über die Reling klettern,  
um die zu sehen.

Und dann haben Sie gesäubert und gestrichen?

Ja.

0506

Sie haben die Bugklappe gestrichen. Streichen  
Sie auch den Rumpf und die Tiefgangslinie?

Da unten strichen wir nicht. Die meiste Zeit  
verbrachten wir im Bug, säuberten das Deck.

Sahen Sie die Bugklappe, nachdem die aus dem  
Wasser geholt wurde?

Ja.

Waren die Dinge nicht mehr dran?

(Es wird nicht genannt, wovon die Rede ist.)

0537

Nein.

Sie sind natürlich kein Spezialist, ich noch weniger. Konnte man sehen, daß die beim Abbrechen der Bugklappe abgegangen sind?

Nein die waren abgeschweißt worden.

Abgeschweißt? Also früher waren die an der Bugklappe vorhanden.

Früher war da sicherlich irgendwas. Übriggeblieben war eine Spur vom Schweißen.

0608

Sie waren im Sommer da. Wurde auch im Sommer an der Bugklappe irgend etwas geschweißt oder repariert?

Nein ich weiß nicht.

Warum sollte man die abschweißen? Was meinen Sie als zukünftiger Seemann?

0629 Vielleicht wurde das ins Labor nach Helsinki geschickt. Dort wurden die Metallproben abgenommen und untersucht, ob die Spur von einem Bruch oder von einem Riß stammt. Ob es alt ist oder mechanisch ist.

Sie haben die Risse mit der Farbe bedeckt, also konnten die Risse auch nicht verschwinden?

29

So kann man denken. Es ist zu sehen, ob das gerade eben abgebrochen ist oder alt ist.

Sie haben die Zeichnungen gemacht. Konnte die Bugklappe auf der Stelle der Risse durchbrechen?

Nein. Von dieser Stelle konnte die nicht durchbrechen.

0719

Haben Sie beobachtet, ob das Schloß statt hydraulisch mit mechanischen Mitteln geschlossen wurde?

Nein. Meiner Meinung nach waren alle Schlösser hydraulisch. Genau kann ich das nicht sagen, ich habe nichts gemerkt.

0745

Den Namen von einem Matrosen haben Sie schon genannt. Wer arbeitete noch mit Ihnen zusammen?

Ich sagte auch im Anschluß - das war einer, der jetzt auf MARE BALTICUM arbeitet. Es hat sich herausgestellt, daß er nichts davon wußte. Ich kann auch nicht sagen, ob es (Name unverständlich) war oder nicht.

0814

30

Wie war der Zustand der Bugklappe, als Sie anfingen zu arbeiten?

Ich hatte keine direkte Aufgabe, an einer bestimmten Stelle irgend etwas zu machen. Aber während der Arbeit kletterte ich überall und säuberte und strich dort. An diese Stelle kam man schwer ran. Vermutlich war dort zuletzt gestrichen worden, als das Schiff zum ersten Mal in weiß gestrichen worden. Ich dachte, daß sicherlich jemand von der Verwaltung davon weiß, denn das Schiff wird sehr oft überprüft. Auch der Bootsmann überprüfte unsere Arbeit. Deswegen dachte ich, daß sicherlich jemand davon weiß.

0903

Also warst Du überzeugt, daß wegen der häufigen Überprüfung jemand vom Zustand der Bugklappe wissen mußte und auch über die Risse?

Ja ich war mir sicher, daß sie es wissen.

Du wurdest beauftragt, dort zu streichen und damit hastest Du Deine Aufgabe erfüllt.

0920 Im Grunde ja.

Erschien der Riß erst dann, als Du die Farbe entfernt hast?

Nein der war schon vorher zu sehen.

31

Es reicht also, wenn man dahin kletterte, und  
der Riß war dann zu sehen?

Ja.

Hast Du jetzt damit Probleme gehabt, weil die  
Bugklappe einen Riß hatte und weil Du davon  
wußtest?

Direkt hat keiner angedeutet, daß ich es  
nicht gesagt hatte. Oder es wäre besser  
gewesen, wenn ich das gesagt hätte.

Du warst ein Praktikant. Eigentlich hätten  
Deine Vorgesetzten den Zustand der Bugklappe  
kennen müssen.

1009 Weil die Bugklappe so ein wichtiges  
Detail des Schiffes ist, war ich mir sicher,  
daß die untersucht worden ist.

Du hast auch selber beobachtet, daß die  
Bugklappe ständig Überprüft wurde?

Ja, sogar die Dichtungen wurden überprüft.

Wie konnte es dazu kommen: "Als "Estonia" zum  
Beispiel in den Hafen fuhr, daß unten an der  
Bugklappe Wasser raus floß?

1035

32

Dies konnte von den Wellen verursacht werden.  
Aber das ist eine so geringe Menge und daher  
unwichtig.

Vielleicht nicht ganz unwichtig?

Waren an der Bugklappe im unteren Bereich  
auch Sensoren, elektronische Sensoren?

Ich weiß nicht.

Die automatisch zeigen, ob die Bugklappe auf  
oder geschlossen ist?

Auf der "Estonia" weiß ich nicht. Aber das  
müsste sicherlich gezeigt werden, ob die  
Schlösser zu sind. Ich weiß nicht genau.

In jedes Schiff kommt Wasser da vorne rein.

1122

Was meinen Sie als zukünftiger Seemann, wenn  
Wasser da drin ist, wie wirkt das Wasser auf  
die elektronischen Sensoren?

Ich glaube, daß damit gerechnet worden ist,  
daß Wasser da reingelangen kann.

Von der Schiffs firma war ein Sensor dort  
vorgesehen.

Das kann ich leider nicht sagen, weil ich  
dort unten nicht gewesen bin.

33

Du warst für kurze Zeit auf dem Schiff und kannst auch nicht alles wissen. Es gibt Gerüchte über Schmuggelei. Hast Du etwas beobachtet?

Nein.

Wie viele Reisen bist Du während der zwei Monate mitgefahren?

Ich hatte nur 6 freie Tage während dieser Zeit. Sonst machte ich alle Reisen mit.

1236

Bei so einem Rißtyp konnte das auf dieser Stelle sicherlich nicht abbuchen. Der stand kreuzweise zu der Richtung der Kraftwirkung. Meiner Meinung nach wurde das vom Deck losgerissen, nicht von der Stelle, wo ich den Riß sah.

Du sprachst über die Länge des Risses. Aber wie breit war der Riß?

Eigentlich mußte man genau direkt ihn anschauen, unter der Winkel war der nicht zu sehen - ziemlich klein war er.

Wie ein Strich?

Wie ein Mikroriß.

Aber der Riß war doch durch?

34

Nein sicherlich nicht. Oberflächlich.



11.4.142

24

RAIN OOLMETS

Praktikant

0050

Sie machten in diesem Herbst, als die Katastrophen passierte, auf "Estonia" ein Praktikum. Welche waren Ihre Aufgaben?

Meine Arbeit war wie die Arbeit vom Reparaturwesen. Wir strichen und säuberten im Schiff. Morgens sammelten wir die Müllsäcke ein und legten neue Müllsäcke hin.

Wie lange dauerte das Praktikum ungefähr?

Von Mitte Juli bis Mitte September. 2 Monate.

Sie haben nach dem Untergang von "Estonia" bei der Polizei eine Aussage gemacht, daß die Untergangssache möglicherweise an den Bugklappen lag, weil die Bugklappe gewisse Schäden hatte.

0152

Ich selber ging nicht zur Polizei. Die Verteidigungspolizei hat mich aufgesucht. Ich hatte dieses eigentlich dem Onkel meines Schwagers erzählt. Wahrscheinlich hat er jemanden dieses weitererzählt.

25

Wie lautete Ihre Aussage bei der Verteidigungspolizei?

0216

Ich berichtete über meine Beobachtungen.

Welche Schäden haben Sie an der Bugklappe beobachtet?

0231 Als ich da vorne sauber machte, sah ich an den Hängen der Bugklappe kleine Risse. Ich dachte, daß jemand die schon gesehen hätte.

Erzählten Sie das der Verteidigungspolizei?

Ja.

Können Sie jetzt etwas näher über die Farbarbeiten und über die Schäden an der Bugklappe berichten?

0254 Eigentlich konnte man die Schäden nur dann sehen, als die Bugklappe auf war, in Tallin als die Autos vorne runterfuhren. Das sind solche Mengen - auf einer Zeichnung kann man das genauer anschauen. Eigentlich auf einer Seite waren solche Risse, vielleicht als Folge einer mechanischen Wirkung.

Sie sagten von einer Seite war der Riß 10 cm lang, und von der anderen Seite ungefähr 6 cm

26

lang. Das sthet in Ihrer schriftlichen  
Aussage.

0332 Kann gewesen sein.

Eine ganze Weile ist vergangen, aber ich  
glaube, daß Sie Ihre schriftliche Aussage  
jetzt nicht verneinen?

Nein.

Es gibt auch Zeichnungen, auf denen Sie  
zeigten, wo genau die Risse waren?

Es gibt eigentlich keine genauen Zeichnungen.

Ich habe selber nach meinen Erinnerungen  
aufgezeichnet.

Die erste Aussage machten Sie bei der Vertei-  
digungspolizei. In der zweiten Aussage  
berichteten Sie, daß Sie den Bootsmann  
darüber informiert haben.

0406 Nein den Bootsmann habe ich darüber  
nicht informiert.

Es war gerade während der Zeit, als die Autos  
auf's Schiff geladen wurden. Und der Bootsmann - bei dem mußte man arbeiten. Er hat  
genau beobachtet. Er mochte es nicht, wenn  
jemand während der Arbeitszeit nicht arbeite-  
te. Dann kam ich gar nicht dazu, um ihm das  
sagen. Ich dachte eigentlich, daß es schon  
bekannt war. Deswegen vergaß ich, das zu  
sagen.

27

Wie viele Menschen sahen die Schäden

Einem Reparaturmatrosen habe ich das gezeigt,  
aber die anderen haben das glaube ich nicht  
gesehen.

Konnte einer der Vorgesetzten auch von den  
Schäden wissen?

0446 Ich fürchte nein. Die waren an solcher  
Stelle, die man so nicht sehen konnte. Man  
mußte schon etwas über die Reling klettern,  
um die zu sehen.

Und dann haben Sie gesäubert und gestrichen?

Ja.

0506

Sie haben die Bugklappe gestrichen. Streichen  
Sie auch den Rumpf und die Tiefgangslinie?

Da unten strichen wir nicht. Die meiste Zeit  
verbrachten wir im Bug, säuberten das Deck.

Sahen Sie die Bugklappe, nachdem die aus dem  
Wasser geholt wurde?

Ja.

Waren die Dinge nicht mehr dran?

(Es wird nicht genannt, wovon die Rede ist.)

0537

Nein.

Sie sind natürlich kein Spezialist, ich noch weniger. Konnte man sehen, daß die beim Abbrechen der Bugklappe abgegangen sind?

Nein die waren abgeschweißt worden.

Abgeschweißt? Also früher waren die an der Bugklappe vorhanden.

Früher war da sicherlich irgendwas. Übriggeblieben war eine Spur vom Schweißen.

0608

Sie waren im Sommer da. Wurde auch im Sommer an der Bugklappe irgend etwas geschweißt oder repariert?

Nein ich weiß nicht.

Warum sollte man die abschweißen? Was meinen Sie als zukünftiger Seemann?

0629 Vielleicht wurde das ins Labor nach Helsinki geschickt. Dort wurden die Metallproben abgenommen und untersucht, ob die Spur von einem Bruch oder von einem Riß stammt. Ob es alt ist oder mechanisch ist.

Sie haben die Risse mit der Farbe bedeckt, also konnten die Risse auch nicht verschwinden?

29

So kann man denken. Es ist zu sehen, ob das gerade eben abgebrochen ist oder alt ist.

Sie haben die Zeichnungen gemacht. Konnte die Bugklappe auf der Stelle der Risse durchbrechen?

Nein. Von dieser Stelle konnte die nicht durchbrechen.

0719

Haben Sie beobachtet, ob das Schloß statt hydraulisch mit mechanischen Mitteln geschlossen wurde?

Nein. Meiner Meinung nach waren alle Schließser hydraulisch. Genau kann ich das nicht sagen, ich habe nichts gemerkt.

0745

Den Namen von einem Matrosen haben Sie schon genannt. Wer arbeitete noch mit Ihnen zusammen?

Ich sagte auch im Anschluß - das war einer, der jetzt auf MARE BALTICUM arbeitet. Es hat sich herausgestellt, daß er nichts davon wußte. Ich kann auch nicht sagen, ob es (Name unverständlich) war oder nicht.

0814

30

Wie war der Zustand der Bugklappe, als Sie anfingen zu arbeiten?

Ich hatte keine direkte Aufgabe, an einer bestimmten Stelle irgend etwas zu machen. Aber während der Arbeit kletterte ich überall und säuberte und strich dort. An diese Stelle kam man schwer ran. Vermutlich war dort zuerst gestrichen worden, als das Schiff zum ersten Mal in weiß gestrichen worden. Ich dachte, daß sicherlich jemand von der Verwaltung davon weiß, denn das Schiff wird sehr oft überprüft. Auch der Bootsmann überprüfte unsere Arbeit. Deswegen dachte ich, daß sicherlich jemand davon weiß.

0903

Also warst Du überzeugt, daß wegen der häufigen Überprüfung jemand vom Zustand der Bugklappe wissen mußte und auch über die Risse?

Ja ich war mir sicher, daß sie es wissen.

Du wurdest beauftragt, dort zu streichen und damit hastest Du Deine Aufgabe erfüllt.

0920 Im Grunde ja.

Erschien der Riß erst dann, als Du die Farbe entfernt hast?

Nein der war schon vorher zu sehen.

Es reicht also, wenn man dahin kletterte, und  
der Riß war dann zu sehen?

Ja.

Hast Du jetzt damit Probleme gehabt, weil die  
Bugklappe einen Riß hatte und weil Du davon  
wußtest?

Direkt hat keiner angedeutet, daß ich es  
nicht gesagt hatte. Oder es wäre besser  
gewesen, wenn ich das gesagt hätte.

Du warst ein Praktikant. Eigentlich hätten  
Deine Vorgesetzten den Zustand der Bugklappe  
kennen müssen.

1009 Weil die Bugklappe so ein wichtiges  
Detail des Schiffes ist, war ich mir sicher,  
daß die untersucht worden ist.

Du hast auch selber beobachtet, daß die  
Bugklappe ständig überprüft wurde?

Ja, sogar die Dichtungen wurden überprüft.

Wie konnte es dazu kommen: "Als "Estonia" zum  
Beispiel in den Hafen fuhr, daß unten an der  
Bugklappe Wasser raus floß?

1035

32

Dies konnte von den Wellen verursacht werden.  
Aber das ist eine so geringe Menge und daher  
unwichtig.

Vielelleicht nicht ganz unwichtig?

Waren an der Bugklappe im unteren Bereich  
auch Sensoren, elektronische Sensoren?

Ich weiß nicht.

Die automatisch zeigen, ob die Bugklappe auf  
oder geschlossen ist?

Auf der "Estonia" weiß ich nicht. Aber das  
müsste sicherlich gezeigt werden, ob die  
Schlösser zu sind. Ich weiß nicht genau.

In jedes Schiff kommt Wasser da vorne rein.

1122

Was meinen Sie als zukünftiger Seemann, wenn  
Wasser da drin ist, wie wirkt das Wasser auf  
die elektronischen Sensoren?

Ich glaube, daß damit gerechnet worden ist,  
daß Wasser da reingelangen kann.

Von der Schiffs firma war ein Sensor dort  
vorgesehen.

Das kann ich leider nicht sagen, weil ich  
dort unten nicht gewesen bin.

33

Du warst für kurze Zeit auf dem Schiff und  
kannst auch nicht alles wissen. Es gibt  
Gerüchte über Schmuggelei. Hast Du etwas  
beobachtet?

Nein.

Wie viele Reisen bist Du während der zwei  
Monate mitgefahren?

Ich hatte nur 6 freie Tage während dieser  
Zeit. Sonst machte ich alle Reisen mit.

1236

Bei so einem Rißtyp konnte das auf dieser  
Stelle sicherlich nicht abbuchen. Der stand  
kreuzweise zu der Richtung der Kraftwirkung.  
Meiner Meinung nach wurde das vom Deck  
losgerissen, nicht von der Stelle, wo ich den  
Riß sah.

Du sprachst über die Länge des Risses. Aber  
wie breit war der Riß?

Eigentlich mußte man genau direkt ihn an-  
schauen, unter der Winkel war der nicht zu  
sehen - ziemlich klein war er.

Wie ein Strich?

Wie ein Mikroriß.

Aber der Riß war doch durch?

34

Nein sicherlich nicht. Oberflächlich.



## **Report bryan roberts**

B.E.W.ROBERTS

**Enclosure 12.5.180**

Military Reconnaissance Systems Consultant

REPORT ON THE LOSS OF THE RO/RO FERRY ESTONIA

1.9.1996

1 Introduction

Page 1

The object of this report is to detect and identify any structural rupture or damage which could have contributed to the loss of the Ro/Ro Ferry Estonia. Supporting information is available on Drawing 590/1106 dated 31/10/79 and on prints from a video tape dated 17/18.9.94 of the Estonia prior to her loss. On this tape frames 0:05:13j and 0:05:22, and 0:05:23 evidence of structural misalignment in the area of both the visor hinge plates (2) and (3) can be seen. For identification of components bracketed numbers e.g.(5) in the text refer to annotations on the attached drawings.

2 Evidence of damage

A detailed examination of the video tape shows the only damage that can be identified is limited to the starboard visor hinge. This is referred to in the paragraph 3, 4 and 5 of this Report in a detailed evaluation of the area.

3 Inner Visor Hinge Plate (2)

The inner visor hinge plate (2) is correct and straight on its fore and aft axis other than a section of approximately 150mm. between the vertical centre line of bolt (10) and the aft end of the visor arm (1). This section has a clockwise twist which gives a downward inclination to the visor bolt (10) and the inner steel bushing surrounding it (7). This inclination of the bolt assembly (10) and the steel bushing extends from its inner end to the outer face of the vessel hinge plate (5). The video tape does not allow precise calculation of this angle, but the average of a series of measurements show it to be approximately 4 degrees which gives a downward misalignment of the axis at bolt (10) of approximately 25mm at the starboard face of the vessel's outer hinge plate (5). The significance of this misalignment will be seen when the inclination of the outer bushing (8) is examined in paragraph 4. In addition there are two unexpected dark marks on each side of the inner hinge plate (2) opposite each other at the point it joins the bolt assembly (10). These two marks appear to be joined by a thin line extending across the width of the inner Visor Hinge plate. It is possible that this is the start of a fatigue crack originating from the two dark marks referred to in resolution from the video image cannot confirm this beyond 'possible'. These two marks at the point of contact on each side of the inner hinge plate (2) and the bolt assembly are approximately 30 degrees above the horizontal and 520 mm. aft of the fold in the Visor Arm Casing (the distance marked is in the sketch provided by yourselves).

Continued on Page Two

4 Outer Visor Hinge Plate (5)

Page Two

An aft section of approximately 400mm. of the outer visor hinge plate (5) together with the outer steel bushing it carries has a significant rotation in an anti-clockwise direction on its fore and aft axis. The bolt assembly is visible rotated to such an extent that both its inner and outer ends can be seen on the video image as a an ellipse. This is in marked contrast to the inner bushing assembly (7) which is symmetrical to the axis of the bolt (10) as seen in Makers Drawings 590/1106. This conflicts with evidence in paragraph 3 and 4 where the section of the bolt (10) pass through the inner steel bushing (7), pass through the vessel's hinge plates (4) via the fixed bushing (6) through the outer hinge plate (5). However, there is another disruption to the bolt assembly, the outer steel bushing (8) is shown on the hinge plate (5) in the video image as to be misplaced outwards approximately 5mm. The steel bushing (8) extends further than the portion on the inner side of the outer visor arm although it should be identical as seen on Drawing 590/1106. Taking account of all these situations it is apparent that considerable disturbances have taken place in this area.

5 Misalignment or loss of the Bolt (10)

From the video image a significant linear difference is apparent along the axis of bolt (10) at its interfaces with outer steel and bronze bushing and at the outer edge of the vessel hinge plate (5). In fact the video image shows a significant gap. The base of the outer visor arm casing (1) can be clearly seen at deck level and can also be seen in a gap of approximately 25mm. between the vessel's outer hinge plate (5) and the outer steel bushing (8). According to Makers Drawing this should not be possible, as the bushing (8) should obstruct this view. In addition to this nothing can be seen of the fixed bushing (6) beyond the face of the outer vessel hinge plate (5) from which it should protrude by 5mm. nor can the 5mm. distance ring which should be between the outer hinge plate and the outer steel bushing. There is a further significant fact, approximately 120/160 degrees of the bronze sleeve securing plate (9) is missing from the section of the Bolt Assembly (10). From the video image it is clearly visible that the securing plate (9) is totally missing and that the bolt (8) is not in place where it should be, and that only 2 of the 4 securing plate bolts (11) are in position and are sticking out of the outer steel bushing (8). These are either studs from which the nuts have been forced off or bolts nuts with the heads broken off.

Continued on Page 3

Page Three

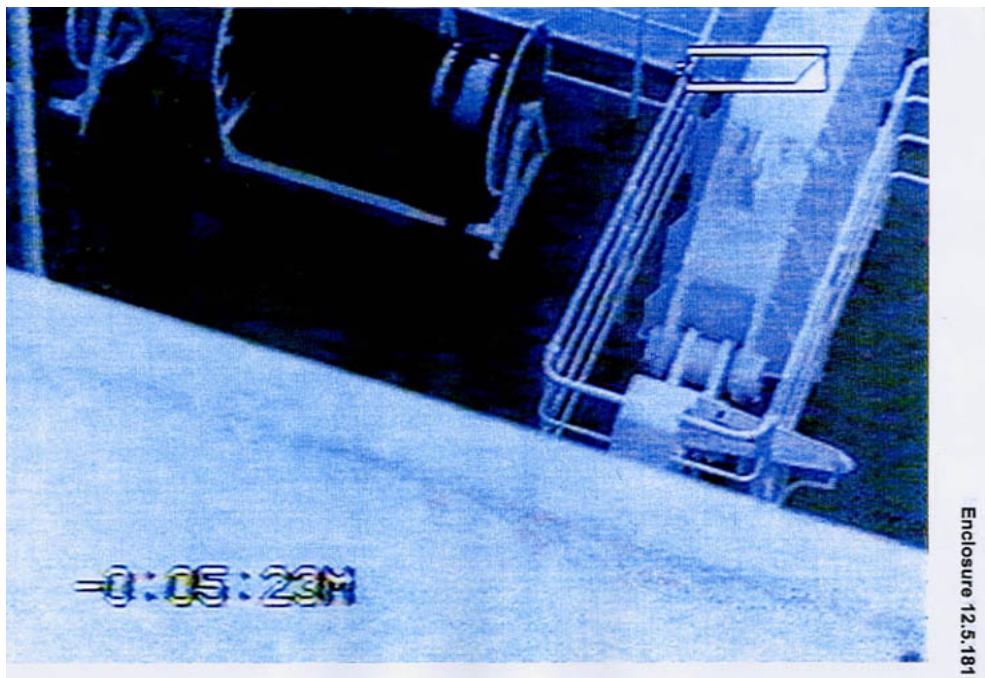
6. Conclusions

This Report is based on Video Tape Images showing disruption to the structure of the Estonia Ferry, especially in the areas of the Starboard Hinge Plates (2) and (3), and on the Bolt Axis (10). This is defined in the appropriate paragraphs. This damage is very significant, especially so when the components involved form part of a load bearing assembly liable to operate in heavy sea conditions.

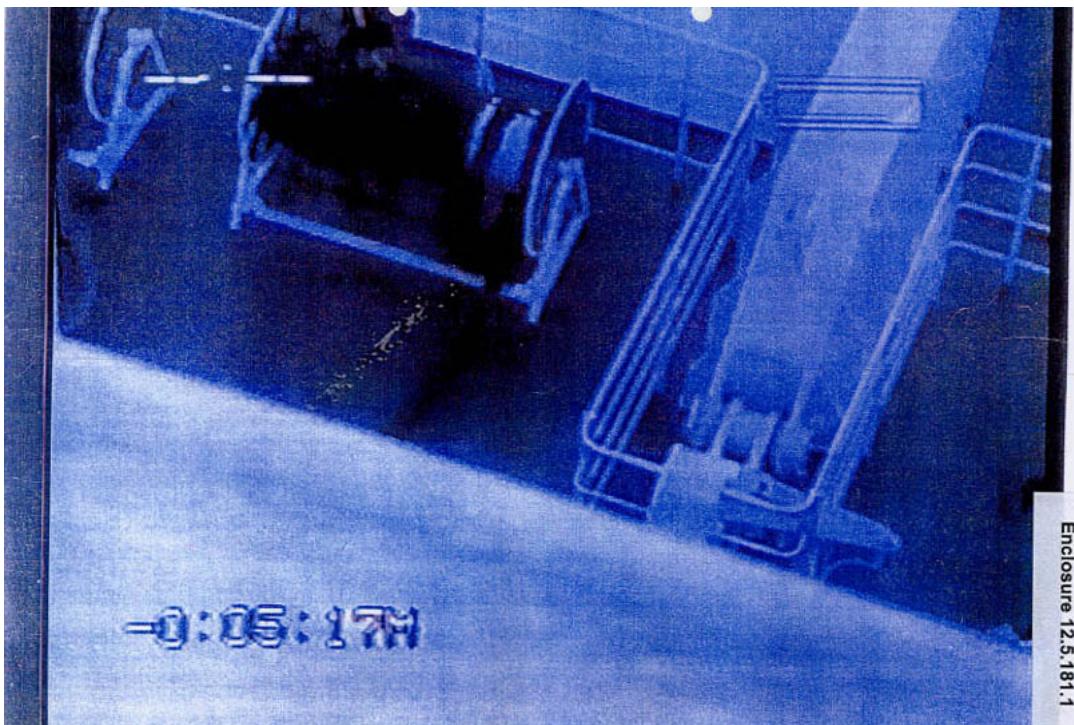
(S.E.W.Roberts.)

3 September 1996

## Enlargement of starboard visor hinge



## Enlargement of starboard visor hinge



## Time schedule of crew change

Enclosure 12.5.182

### TIME-SCHEDULE 1994

A = Capt. Andresson / Boatswain Vello Ruben  
 P = Capt. Piht / Boatswain Heino Leik

S = Stockholm  
 T = Tallinn

DAY	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
01	PS	PT	PT	AS	AS	AT	AT	AS	^/T	-	-	-
02	PT	PS	PS	AT	AT	AS	AS	AS	AT	PS	-	-
03	PS	P/AT	P/AT	AS	AS	AT	AT	AS	PT	-	-	-
04	PT	AS	AS	AT	AT	AS	AS	AS	^/T	PS	-	-
05	PS	AT	AT	AS	AS	AT	AT	PS	PT	-	-	-
06	P/AT	AS	AS	AT	AT	AS	AS	PT	PS	-	-	-
07	AS	AT	AT	AS	AS	AT	^/P/T	PS	PT	-	-	-
08	AT	AS	AS	AT	AT	AS	PS	PT	PS	-	-	-
09	AS	AT	AT	AS	AS	^/P/T	PT	PS	PT	-	-	-
10	AW	AS	AS	AT	AT	PS	PS	PT	PS	-	-	-
11	AW	AT	AT	AS	AS	PT	PT	PS	P/PT	-	-	-
12	AW	AT	AS	AT	^/P/T	PS	PS	PT	PS	-	-	-
13	AW	AT	AT	AS	PS	PT	PT	PS	PT	-	-	-
14	AW	AS	AS	^/P/T	PT	PS	PS	PT	PS	-	-	-
15	AS	AT	AT	PS	PS	PT	P/PT	PS	^/T	-	-	-
16	AT	AS	AS	PT	PT	PS	PS	PT	AS	-	-	-
17	AS	^/T	AT	PS	PS	PT	PT	PS	P/AT	-	-	-
18	AT	PS	PS	PT	PT	PS	PS	P/AT	AS	-	-	-
19	AS	PT	PT	PS	PS	PT	PT	AS	AT	-	-	-
20	^/P/T	PS	PS	PT	PT	PS	PS	AT	AS	-	-	-
21	PS	PT	PT	PS	PS	PT	P/AT	AS	AT	-	-	-
22	PT	PS	PS	PT	PT	PS	AS	AT	AS	-	-	-
23	PS	PT	PT	PS	PS	P/AT	AT	AS	AT	-	-	-
24	PT	PS	PS	PT	PT	AS	AS	AT	AS	-	-	-
25	PS	PT	PT	PS	PS	AT	AT	AS	AT	-	-	-
26	PT	PS	PS	PT	P/AT	AS	AS	AT	AS	-	-	-
27	PS	PT	PT	PS	AS	AT	AT	AS	AT	-	-	-
28	PT	PS	P/AT	AT	AT	AS	AS	AT	+	-	-	-
29	PS	-	PT	AS	AS	AT	AT	AS	-	-	-	-
30	PT	-	PS	AT	AT	AS	AS	AT	-	-	-	-
31	PS	-	P/AT	-	AS	-	AT	AS	-	-	-	-

- [Blue Box] = Surveys and/or visits of Anders Wirstam in Stockholm
- [Red Box] = Repairs to bow visor at Tallinn
- [Blue Box] = Rain Oolmets on board
- [Red Box] = Rain Oolmets discovers cracks in visor hinges
- [Red Box] = Surveys and/or visits of Anders Wirstam in Tallinn
- [Green Box] = Atlantic lock welded
- [Blue Box] = Rain Oolmets from board
- [Red Box] = Carpenter makes video from damaged visor hinges

# Statement of peeter tuur

Enclosure 12.5.183

Office Translation 14.11.95

m/s ESTONIA  
Minutes of interrogation no. 54 A  
held with the crew member  
Tuur, Peeter, born 1947

Domiciled at Narvamnt 31-2.

The interrogation was held on  
Monday, 3rd October 1994 and  
commenced at 14.00 hrs. at  
Pagarlin. 1

Interrogation officer: Sinisalu

The interrogation is interpreted  
from Estonian handwritten draft by  
the interpreter Maie Vinter.

Report K-84051-94

I am the 2nd engineer of the 'Estonia'. Each engineer has his own duties. One of my duties were the watertight doors and to keep their technical tightness in order. It is also my responsibility that the visor is in order, but more exactly I am responsible for the visor's hydraulics. The closing of the visor is done by the boatswain, but I do not know who is directly responsible for the closing - it might be the mate. The ramp is behind the visor. The ramp shall also be hermetically tight, but there are only a couple of locations where the ramp is not hermetically tight. The visor is closed hydraulically and the securing wedges are holding the visor in the closed position. There are five fixing points.

For the fixing there are two manual bolts which the boatswain has to fasten. I do not know what directly caused the sinking of the vessel "Estonia". I can only presume that the water broke the upwards lifting power shaft of the visor, whether the weldments broke or something similar. The visor is lowered with controlled speed. The hydraulic cylinders have to lower the visor down with steady speed. The pressure of the waves against the visor creates excess pressure against the visor.

steady speed. The pressure of the waves against the visor creates excess pressure against the visor.

(Hereafter comes a lot of technical terms, which I have done my best to translate, but I am not hundred per cent confident that they are corresponding to the words in Swedish). Hydraulic cylinders' branch-bearing, shaft-bearing, fundament-bearing fell down and something in the upper part failed.

I was not on duty at the time of the catastrophe. I woke up due to the first fall and metallic beating. I did not look at my watch. My cabin was on the 7th deck. I dressed immediately and when I was dressed, the vessel's list might have been 30 degrees. I went out in the corridor. The fire alarm on board was given, "Mr. Skylight", that is the code name. I went towards the fire station 1, but due to the list this was not possible. I found a life-vest on the 8th deck. I helped to loosen a liferaft which had got entangled.

A wave took me into the sea and I was in the sea until 04.45 hrs, when I was rescued by "Silja Isabella". I was in the sea all the time, because I found two life-vests in the sea which I wanted to give to other people, but I did not meet anybody in the sea.

To the interrogation is also a drawing of the visor, the ramp and the locking devices, which of course is attached to the protocol.

Translated by the interpreter Maie Vinter.

Stockholm 3rd October 1994

Lars-Erik Andersson

Detective inspector

PK 1

Drafted 30th November 1994

1 (2)

## Enclosure B.5.5.89.6.

m/s ESTONIA  
 PROTOKOLL fört över förhör nr 54 A med  
 Besättningsmannen  
 TÜür, Peeter, född 1947

Bosatt på Narvamnt 31-2.

Förhöret hållit måndagen den 3 oktober 1994  
 med början klockan 14.00 på Pagaritn. 1

Förhörsledare Sinisalu

Förhöret är tolkat från estniskt handskrivet  
 koncept av tolken Maie Vinter.

ANMÄLAN K-84051-94

Jag är fartyget Estonias 2:e mekaniker. Varje mekaniker har sina uppgifter. Till min uppgift hörde vattentäta dörrar och att hålla dessa tekniska tillslutning i ordning. Att visiret är i ordning är också mitt ansvar, men exakt svarar jag för visirets hydraulik. Tillslutningen av visiret utföres av båtsman, men vem som direkt ansvarar för tillslutningen vet jag inte eller - kan det vara styrman. Bakom visiret finns rampen. Ska också vara hermetisk, det finns bara ett på ställen där rampen inte tillsluter hermetiskt. Visiret tillslutes av hydrauliken och säkringskliarna fixerar visiret vid tillsluter läge. Det finns fem fixeringspunkter.

För fixeringen finns två handsprintar som båtsman måste fästa. Vad som direkt orsakade fartyget Estonias undergång kan jag inte säga. Kan bara anta att vattnet krossade visirets uppåtflytande kraftaxel. Om svetsningen gick eller någonting liknande. Visiret faller ner med fixerad hastighet. Hydraulikcylinder  
 måste släppa ner visiret med jämn hastighet. Väggers tryck mot visiret bildar övertryckskrafter mot visiret

(sedan kommer en massa tekniska termer, som jag här försökt att tolka så gott jag kan, men jag är inte hundra på att dom motsvaras av dom orden på svenska).

2 (2)

ANMÄLAN K-84051-94

Hydraulicylinders grenlager, axellager, fundamentlagret föll ner och någonting upptill gav vika.

Vid katastrofen var jag inte i tjänst. Vaknade av det första fallet och av metallslag. Jag tittade inte på tidpunkten. Min hytt var på 7:e däck. Klädde mig genast och när jag var klädd kunde fartyget ha 30 graders slagsida. Gick ut i korridoren. Man gav brandlarm ombord "Mr Skylight", det är kodat. Jag gick mot brandstation 1, men på den slagsidan var detta inte möjligt. Fick en räddningsväst på 8:e däck. Hjälpte till att rycka loss räddningsflötter som hade klat fast sig.

En våg kastade mig i vattnet och jag var i vattnet till klockan 04.45, då man drog upp mig ombord på "Silja Isabella". Jag var i vattnet hela tiden för jag hittade två räddningsvästar i vattnet som jag ville ge till andra, men jag träffade inga i vattnet.

Till förhöret är också bifogat en skiss på visiret, rampen och befästningsanordningen som naturligtvis medföljer protokollet.

Översatt av Tolken Maie Vinter.

Stockholm den 3 oktober 1994

2

Lars-Erik Andersson  
Kriminalinspektör  
PK 1

Utskrivet den 30 november 1994  
E. Eriksson

## Summary of items

## Enclosure 12.5.184

## EXTRACT FROM

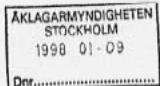
"LIST OF MAINTENANCE AND REPAIR WORKS ON MV ESTONIA"  
April 1993 - August 1994

- June 1994 - Electrical part:
  - No. 11 Painting of bow hydraulic and ventilation boards.
  - No. 12 Replacement of CPU<sup>1</sup> on fin system LCU Stb
- May 1994 - Electrical part:
  - No. 1 Cleaning, painting of bow hydraulic station board.
- April 1994 - Miscellaneous:
  - No. 1 Cleaning and painting the weldings in dry tank No. 16A  
Stb & Port
- April 1994 - Electrical part:
  - No. 23 Checking, adjusting of bow ramp position sensors.
- February 1994 - Electrical part:
  - No. 27 Restauration of finroom fan board.
- January 1994 - Miscellaneous:
  - No. 2 Works before and after installation stabilizers in finroom.
- January 1994 - Jobs made during docking:
  - No. 1 Helping in mounting of new panel on bridge, moving of  
navigational lights panel, 4 ETA-pilot cables drawing under the  
bridge deck, drawing of cable from bridge stabilizers panel to  
Doppler log central unit, installing of ETA-pilot switch.
- December 1993 - Electrical part:
  - No. 8 Repairing of bow ramp inductive sensors.
- October 1993 - Electrical part:
  - No. 26 Replacement of bow ramp position sensor.
  - No. 27 Replacement of bow ramp signal lamps holders.
- September 1993 - Electrical part:
  - No. 1 Repairing of two welding transformers.

<sup>1</sup> CPU = Central Processing Unit**Transcript of sten christer forsberg interview**

## Enclosure 12.5.185

EKOT 971211 KLOCKAN 06.00



...Rederiet Nordström & Thulin kommenterar nu för första gången haverikommissionens slutrapport om Estonia-katastrofen. Sten Christer Forsberg är teknisk chef på rederiet och han medger nu att Nordström & Thulin har ett ansvar för att bogvisirets alltför svaga lås inte upptäcktes och åtgärdades när Estonia köptes.

F = Sten Christer Forsberg

R = Reporter Erik Ridderstolpe

F: Rederiet har ju ett eget ansvar och klassen bistår rederiet, klassen har ju ett ansvar för att besikta och konfirmera att deras egna regler är uppfyllda men fartygets slutliga tillstånd är alltid redarens ansvar.

R: Är det ert ansvar att det här inte var så bra?

F: Du kan säga att vi har ett ansvar i slutändan för att det inte var bra, sen får man ju bedömma om det var rimligt, om vi har levt upp till det ansvaret på ett rimligt sätt eller inte.

Strax före köpet av Estonia hade den förra ägaren Silja Line tagit in kostnadsförslag på att förstärka låsen till bogvisiret. Det är uppgifter som Sten Christer Forsberg säger att han fått läsa först i haverirapporten.

F: Nja, vi ställde ju frågor i samband med övertagandet om olika saker och fick ett antal svar men, men just dom här punkterna har vi inte varit medvetna om.

R: Och det fanns alltså ingen typ av information om det här?

F: Nej, inte som var tillgänglig för oss.

Silja Line hade liksom dom tidigare ägarna Sally Rederiet, haft ett serviceavtal där företaget Mac Gregor regelbundet kontrollerade och skötte bogvisiret men när Nordström & Thulin köpte färjan sades det avtalet upp.

F: Nej, vi ansåg att vi hade resurser och tid framför allt i hamnarna att själva sköta det underhållet. Tidigare ågares motiv för att lägga ut det på entreprenad tror jag inte berodde så mycket på dålig kunskap utan mera på kapacitet och tid i hamnarna.

Nordström & Thulin skötte alltså kontrollen själva när Estonia låg vid kaj. Sten Christer Forsberg anser att Estonia var en välskött färja som uppfyllde dom krav som ställdes. Sjöfartsverken i Sverige och Finland hade tillåtit att Estonia liksom många andra färjor var byggd i strid mot reglerna. Kollisions-skottet som skulle hindra vatten från att tränga in på bildäck var felplacerat. Men detta gick inte att se i fartygets tillstånd, dom så kallade sertifikaten.

F: Ja, du kan ju säga att fartygets initialkonstruktion motsvarar inte det sertifikat som var utställt för fartyget, i det avseendet.

Haverirapporten kritiserar också att lastning i Tallins hamn gjordes dåligt och att besättningen inte tog reda på vad som hände tillräckligt snabbt när olyckan välvil var framme. Det beklagar Sten Christer Forsberg men tror inte att någon annan besättning skulle ha klarat en liknande situation bättre. Sten Christer Forsberg var den som bestämde vilken räddningsutrustning som skulle finnas på Estonia när färjan utrustades för Estlands-trafiken. I ett protokoll från Sjöfartsverket hösten -92 framgår att Forsberg frågat om modern utrustning var nödvändig. Svaret från Sjöfartsverket var att det räckte med den utrustning som fanns ombord. I dag angrar Forsberg sitt beslut den gången.

F: Med den insikt jag har idag så hade jag, så hade vi förmodligen gjort någonting annat men fartyget hade en räddningsutrustning som var adekvat och vil lämpliga det regelverk som omgav fartyget och räddningsutrustningens skick var god.

Nordström & Thulins anställda har förhörts av chefsåklagare Thomas Lindstrands utredning om något brott ligger bakom Estonias förlisning. Men Sten Christer Forsberg är inte orolig för den rättsliga prövningen.

- F: Vi anser inte att vi har varit grovt vårdslösa. Vi anser att vi har haft ett välskött fartyg och väldmanagerat fartyg, att det har varit sjövärldigt. Har någon annan andra uppfattningar och kan styrka det nu när rapporten finns på bordet så må det ju stå dom fritt att göra det.
- R: Du som har varit med i hanteringen av Estonia hela tiden, är det någonting i hanteringen som du så här i efterhand ångrar?
- F: Ja, inför, efter det som har hänt så finns det många saker som man skulle vilja ha gjort annorlunda när det gäller säkerhetsutrustning, kontroll av konstruktion och annat. Självklart har man spenderat många sömlösa nätter med det men jag kan inte se idag med den, den kunskap som finns i branschen och hos oss själva vid det tillfället, vad vi hade kunnat göra annorlunda, men det finns mycket man önskar naturligtvis att man hade gjort annorlunda.

Sten Christer Forsberg, teknisk chef på Rederiet Nordström & Thulin. Reporter Erik Ridderstolpe.

Jackie Moberg/LOKV  
980105

## Fax andi meister to hans rosengren

(187)

Börp + L

Enclosure 13.186

02.07.1996

Attn: Mrs Gunnel Göransson

To be forwarded to Mr Hans Rosengren

From: Andi Meister

Fax: +46-8 737 58 52

Dear Hans,

Enclosed please find some details of the crew. Since you have the crew list (28.09.94 Est-line-Tallinn) at your disposal, I guess there's no need to rewrite it in full.

DECK: 16 crew-members;  
 ENGINE: 16 crew-members;  
 HOTEL: 33 crew-members;  
 TAX-FREE SHOP: 10 crew-members;  
 STORE: 4 crew-members;  
 2 crew-members included in the list of the said department;  
 GALLEY: 16 crew-members;  
 WASHING-UP: 5 crew-members;  
 MESSROOM: 3 crew-members;  
 RESTAURANT "SEA SIDE": 7 crew-members;  
 RESTAURANT "POSEIDON": 15 crew-members;  
 "BALISTIC BAR": 9 crew-members;  
 PUB "ADMIRAL": 4 crew-members;  
 CAFE "NEPTUNUS": 4 crew-members;  
 NIGHT CLUB: 2 crew-members;  
 CONFERENCE: 2 crew-members;  
 SAUNA: 1 crew-member;

Total: 149 crew-members on duty; all of them had been assigned an alarm number.

## TRAINNEES AND THE CREW-MEMBERS OFF DUTY:

1. Tomingas, Ago - trainee shop-assistant
2. Kukk, Kalev - trainee cook
3. Reimann, Helen - trainee administrator
4. Saadi, Andrus - trainee cook
5. Kukk, Einar - trainee mate
6. Kanter, Sirje - trainee info-administrator

Total: 6 trainees

1. Paeorg, Helin - barmaid, off duty
2. Oja, Alita - cabin hostess, off duty
3. Koop, Krista - cabin hostess, off duty
4. Piht, Avo - Captain, off duty

Total: 4 crew-members off duty. They had no alarm numbers put on this particular crew list.

Total: 159 persons on the crew list.

The above crew list, signed by the Master of the Ship and presented to the Harbour Master,

contained 160 names. Actually Anne Roosipold (trainee book-keeper) and Lea Ots (mess worker, off duty) were not on board, but Sirje Kanter (trainee info-adm) went on board after the Master had signed the list.

## THE ENTERTAINMENT TROUPE AND ADVISORS - 28 persons

This separate list that was signed by the Master of the Ship and was presented to the Harbour Master together with the main one, contained 27 names (the 27th one - Tarvi Phialak written by hand), but Andrus Kullamaa went on board after the Master had signed the list.

None of this group of persons had been assigned an alarm number.

THE CONCLUSION: THE LIST OF PERSONS (THE CREW LIST) PRESENTED TO THE HARBOUR MASTER OF THE PORT OF TALLINN MUST HAVE CONTAINED 187 NAMES.



## ENGINE ROOM CREW

17. LEIGER	LEMBIT	Chief Engineer	EST	1950
18. TULVIK	ARVO	1st Engineer	EST	1952
19. TÜÜR	PEETER	2nd Engineer	EST	1947
20. TREU	MARGUS	3rd Engineer	EST	1964
21. TARGAMA	AGUR	4th Engineer	EST	1966
22. VERRÖ	ANDRES	Refriger. Engineer	EST	1959
23. SILLASTE	HENRIK	Systems Engineer	EST	1969
24. IVANOV	ANATOLI	Electric Engineer	EST	1951
25. MOOSAAR	TANEL	Chief Motorman	EST	1971
26. KADAK	HANNES	Chief Motorman	EST	1971
27. SIEGEL	ELMAR	Chief Motorman	EST	1951
28. RABA	TAAVI	Chief Motorman	EST	1973
29. MARCHON <del>MÄÄTÖN</del>	VASSILI	Motorman-Welder	EST	1951
30. SILJAJEV	IVAN	Motorman-Turner	RUS	1949
31. ROHUMAA	ARVI	Motorman-Electrician	EST	1940
32. SUMBERG	MATTI	Motorman-Electrician	EST	1943

## CATERING CREW

33. VIHMAR	ANDRES	Hotel Purser	EST	1965
34. SIMONOVITS	VASSILI	Safety Assistant	RUS	1964
35. RODEN	ERVIN	Safety Assistant	EST	1951
36. PREI	VALEV	Fire Safety Asst.	EST	1962
37. PITK	AIVE	Chief Administrator	EST	1966
38. KOPLI	ELVE	Information Adm.	EST	1974
39. ROHULAIK	TIINA	Information Adm.	EST	1973
40. TAMM	KATRIN	Chief Hostess	EST	1958
41. HAMBURG	MARI	Chief Cabin Hostess	EST	1952
42. NIKOLAJEVA	MILVI	Cabin Hostess	EST	1956
43. NIGLAS	SILVIA	Cabin Hostess	EST	1944
44. RANDMA	HELVE	Cabin Hostess	EST	1950
45. TEESAAR	TIINA	Cabin Hostess	EST	1955
46. BÖTKER	ELVIIRA	Cabin Hostess	EST	1945
47. JUURO	ESTER	Cabin Hostess	EST	1955
48. HEAMÄGI	JUTA	Cabin Hostess	EST	1947

49.	NURME	TIINA	Cabin Hostess	EST	1955
50.	REBANE	LIIVI	Cabin Hostess	EST	1953
51.	VILPERT	ANNE-HELLE	Cabin Hostess	EST	1946
52.	AUN	URVE	Cabin Hostess	EST	1949
53.	RAIDMA	ILMI	Cabin Hostess	EST	1956
54.	KUIK	LIIVI	Cabin Hostess	EST	1958
55.	SAIDLÄ	SIRJE	Cabin Hostess	EST	1969
56.	KUUSK	ANDE	Cabin Hostess	EST	1952
57.	SAARNIT	LUULE	Cabin Hostess	EST	1949
58.	KOLESNIKOVA	ADELJA	Charwoman	RUS	1954
59.	ANNUS	ALLA	Charwoman	EST	1956
60.	PASTERNAK	LJUDMILLA	Charwoman	EST	1963
61.	PLEHHANOVA	VALENTINA	Charwoman	RUS	1957
62.	RAUDSEPP	LJUDMILLA	Charwoman	EST	1947
63.	KIVIPÖLD	MALLE	Charwoman	EST	1949
64.	MAKAROVA	OLGA	Charwoman	RUS	1955
65.	SKOROHODOVA	LARISSA	Charwoman	EST	1949
66.	MÜÜR	TIINA	Shop Manager	EST	1962
67.	JÄRVI	MAYGA	Shop Assistant	EST	1944
68.	MÖTTUS	HELE	Shop Assistant	EST	1971
69.	PURRU	KATTI	Shop Assistant	EST	1969
70.	PARNABAS	RIINA	Shop Assistant	EST	1961
71.	BELZETSKAJA	HELI	Shop Assistant	EST	1968
72.	TILLEMAN	PILLE	Shop Assistant	EST	1971
73.	VASK	JÜRI	Shop Assistant	EST	1974
74.	PETTERSON	VEIKO	Shop Assistant	EST	1970
75.	VÕÖSA	TIMMO	Shop Assistant	EST	1970
76.	KOLÖŠEVSKI	STANISLAV	Store Manager	EST	1968
77.	VAHTRAS	KALEV	Warehouseman	EST	1951
78.	KOPPEL	AARNE	Warehouseman	EST	1957
79.	PIUS	ERKI	Warehouseman	EST	1966
80.	SAME	SIIRI	Accountancy Operator	EST	1969
81.	ARRO	TIINA	Currency Exchanger	EST	1951
82.	VALDMETS	MEIDA	????	EST	1945
83.	PILL	ANDRES	cook	EST	1952
84.	VESKE	MARE	cook	EST	1971
85.	AAVASTE	AIRI	cook	EST	1973

86.	TOMBAK	ÜLLE	cook	EST	1956
87.	KIPPA	EERO	cook	EST	1963
88.	ORUMAA	MALLE	cook	EST	1969
89.	RAUDMANN	KULDAR	cook	EST	1968
90.	MÜÜR	RIHO	cook	EST	1967
91.	LOMP	TÖNU	cook	EST	1972
92.	MOLLOKA	ILLE	cook	EST	1960
93.	FREIMANN	RAIVO	cook	EST	1973
94.	KUUSE	EVA	cook	EST	1953
95.	ANTUK	EVI	kitchen worker	EST	1942
96.	PALGUNOV	PEETER	kitchen worker	EST	1946
97.	KIMMEL	AARE	kitchen worker	EST	1965
98.	PARTSI	RIIKO	dishwasher	EST	1969
99.	SISKA	TIIT	dishwasher	EST	1970
100.	RAHAMÄGI	LIA	dishwasher	EST	1942
101.	MAKARENKO	ADAM	dishwasher	RUS	1942
102.	LIV	KALJU	dishwasher	EST	1947
103.	LINDOK	KATRIN	Mess worker	EST	1975
104.	NISU	ANNELI	Mess worker	EST	1969
105.	BLUMFELDT	HELVE	Mess worker	EST	1951
106.	RÄST	RIINA-MALL	Chief Restaurant Manager.	EST	1958
107.	VENTSEL	ANDRUS	waiter	EST	1974
108.	VUKS	VAHUR	waiter	EST	1968
109.	UDUSTE	URMAS	waiter	EST	1970
110.	TALVER	ERKKI	waiter	EST	1972
111.	VALD	EIVO	waiter	EST	1973
112.	OVIR	ANNELI	waitress	EST	1964
113.	ARULA	ÜLLE	Restaurant manager.	EST	1956
114.	LEEMETS	TERJE	waitress	EST	1965
115.	KALJURAND	KÄTLIN	waitress	EST	1973
116.	TUDELEPP	EPP	waitress	EST	1973
117.	KUUR	LIIA	waitress	EST	1950
118.	KIRI	EVE	waitress	EST	1958
119.	LAAK	RIINA	waitress	EST	1970
120.	ALLA	KATRIN	waitress	EST	1968
121.	KOPLIMÄGI	SIRJE	waitress	EST	1959
122.	LÖÜK	TERJE	waitress	EST	1967

123. ALLA	LIINE	waitress	EST	1971
124. JOHANSSON	SIRJE	waitress	EST	1950
125. KUUSK	KATRIN	waitress	EST	1973
126. TOOM	VALENTINA	nisse	EST	1943
127. RAHUOJA	LILIAN	nisse	EST	1948
128. ANDERSON	PAUL	Chief barman	EST	1962
129. LASS	PIIA	barmaid	EST	1957
130. SILLANDI	TIINA	barmaid	EST	1966
131. RÄTSEP	LAURI	barman	EST	1973
132. KÜBAR	ANGELIKA	waitress	EST	1971
133. AALISTE	LEA	waitress	EST	1972
134. HABERMANN	LIIA	waitress	EST	1968
135. KALVET	KÜLLI	waitress	EST	1963
136. NAVJORTKINA	NATALJA	dishwasher	EST	1956
137. SARAP	MARIKA	barmaid	EST	1965
138. PROMMIK	MERIE	barmaid	EST	1966
139. MÖLDER	TIINA	waitress	EST	1972
140. KIVILA	SAIDYA	waitress	EST	1946
141. SINIMERI	RAIVO	restaurant manager	EST	1956
142. VALDMETS	SIGNE	waitress	EST	1973
143. KILUMETS	MARIA	waitress	EST	1974
144. REBANE	MARI	waitress	EST	1974
145. PÖDER	MART	barman	EST	1949
146. PÖLD	HELI	waitress	EST	1952
147. KRUUSMAA	KRISTIINA	Conference Admin	EST	1973
148. PALL	MARIKA	Conference Hostess	EST	1975
149. KAUR	KATRIN	Barmaid	EST	1964
<hr/>				
150. PAEBORG	HELIN	Barmaid	EST	1965
151. TOMINGAS	AGO	Shop Assistant	EST	1956
		Trainee		
152. KUKK	KALEV	Cook Trainee	EST	1966
153. REIMANN	HELEN	Admin. Trainee	EST	1975
154. OJA	AITA	Cabin Hostess	EST	1953
155. KÖÖP	KRISTA	Cabin Hostess	EST	1974
156. SAADI	ANDRUS	Cook trainee	EST	1974
157. PIHT	AVO	Master	EST	1954
158. KUKK	EDNAR	Mate	EST	1962



The Staff Department of THe Estonian Shipping Company was in charge of preparing and staffing the crew of M/V ESTONA.

Recommendations for recruiting mates and engineers were given by the Senior Captain Department or the Technical Department. Previous employment on other vessels was taken into account.

Upon recruitment it was also checked that the employee-to-be had all the necessary certificates required by the international Estonian regulations.

All navigators (the Master and the Mates) had the apprriate diplomas and certificates. They had also been trained at the apprriate simulators, which have been tested by Estonian National Maritime Board. Captain Arvo Andresson had taken the exam for pilotage in the Swedish waters. The officers of the ship knew Estonian, English, and besider 2 or 3 more foreign languages.

Regular drill exercises were arranged on board the ship to train the crew to act in extreme situations. Exercise plans were drawn up in accordance with the international and Estonian regulations.

**THE DECK OFFICERS EDUCATION  
AND CERTIFICATES**

**MASTER: ARVO ANDRESSON 03.02.1954**

**Education:** 1969-1973 Estonian Centre of Maritime Education;  
1977-1982 State Marine Academy in St. Peterburg.

**Certificates:** Certificate of Competency (Diploma) Deep Sea  
Captain No. 604/86 issued by Harbour Master (St. Peterburg) 1986 and  
Certificate of Competency (Diploma) Deep Sea Captain No. KK0000001  
issued by Estonian National Maritime Board on the 05.01.1994;

Advanced training course at Estonian Centre of Maritime Education 1991;

Certificate of Competency Radiotelephone operator No. RB0000040  
issued by Estonian National Maritime Board on the 09.03.1994.

Radar Simulator 1991;  
ARPA 31/24.12.1992;

Training vessel "ARZAMASS" certificate No. 64/1992, passed the  
IMO accepted courses;

Attended a seminar on Detailed Passage Planning and Bridge Procedures For Navigation in  
confined waters on board the m/v ESTONIA during 16,5 hours in March 1993;

Passed the Pilotage Examination for sailing in Swedish archipelago (skerries).

**SEAMAN'S POSITION RECORD:**

January, 1974 - August, 1977	4-th and 3-d mate;
August, 1977 - April, 1980	2-d mate;
May, 1980 - March, 1983	2-d mate m/v "GEORG OTS";
April, 1983 - February, 1984	chief mate m/v "GEORG OTS";
March, 1984 - May, 1986	chief mate universal cargo vessel DWT 7400 tons;

June, 1986 - March, 1992 master universal cargo vessel DWT 7400 tons and  
Ro-Ro vessels DWT 5500 tons;  
April, 1992 - December, 1992 master m/v "GEORG OTS";  
January, 1993 - September, 1994 master m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian, Finnish, Swedish.

**CHIEF MATE: JUHAN HERMA 06.08.1964**

**Education:** 1982 - 1988 State Marine Academy in St. Peterburg.

**Certificates:** Certificate of Competency (Diploma) No. LS0000032 as Deep-Sea Chief  
Mate a ship of Gross tonnage 1600 or more issued by Estonian National  
Maritime Board 09.05.1994;

Certificate of Competency Radiotelephone operator No. 89/1993;

Advanced training Course at Estonian Centre of Maritime Education - 1993;

Radar Simulator - 1993;  
ARPA - 1993;

Training vessel "ARZAMASS" certificate No. 132/1989, passed the  
IMO accepted courses;

Attended a seminar on Detailed Passage Planning and Bridge Procedures of Navigation in  
confined waters on board the m/v ESTONIA during 16,5 hours on the 18-19 of March 1993;

Attended a training course "Bridge Resource Management Training" in SAS Flight Academy in  
Sweden on May 31 - June 03, 1994.

**SEAMAN'S POSITION RECORD:**

June, 1988 - April, 1990 3-d mate general - purpose cargo vesse DWT 6072 tons;  
May, 1990 - October, 1991 3-d mate m/v "GEORG OTS";  
November, 1991 - January, 1993 2-d mate m/v "ESTONIA";  
January, 1993 - August, 1994 2-d mate m/v "ESTONIA".

September, 1994 chief mate m/v "ESTONIA."

**LANGUAGES:** Estonian, English, Russian, Finnish.

**SECOND MATE: PEETER KANNUSSAAR 20.06.1964**

**Education:** 1988-1991 State Marine Academy in St. Peterburg.

**Certificates:** Certificate of Competency (Diploma) No. LS0000057 as Deep Sea Chief  
Mate of a ship of Gross tonnage 1600 or more issued by Estonian National  
Maritime Board 19.09.1994;

Certificate of Competency Radiotelephone operator 1991;

Radar Simulator 1991;  
ARPA 1991;

Training vessel "KAMENSKI" passed the IMO accepted courses 27.04.1990;

Attended a seminar on Detailed Passage Planning and Bridge Procedures for Navigation on  
confined water on board the m/v ESTONIA during 16,5 hours in March 1993.

**SEAMAN'S POSITION RECORD:**

October, 1992 - December, 1992 2-d mate m/v "GEORG OTS";  
January, 1993 - September , 1994 2-d mate m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian.

**SECOND MATE: TORMI AINSALU 04.12.1963**

**Education:** 1982-1988 Estonian Centre of Maritime Education.

**Certificates:** Certificate of Competency (Diploma) Officer of the Watch No. 2078/88  
issued by Harbour Master (St. Peterburg) on the 01.09.1988;

Certificate of Competency Radiotelephone operator issued 1991;

Radar Simulator 1991;  
ARPA 1992;

Training vessel "ARZAMASS" certificate No. 289/1991 passed the  
IMO accepted courses;

Attended a seminar on Detailed Passage Planning and Bridge Procedures for Navigation in  
confined water on board the m/v ESTONIA during 16,5 hours in March 1993.

**SEAMAN'S POSITION RECORD:**

November, 1988 - June, 1992 3-d mate Ro-Ro vessel 5500 DWT;  
July, 1992 - December, 1992 2-d mate m/v "GEORG OTS";  
January, 1993 - September, 1994 2-d mate m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian.

**THIRD MATE: ANDRES TAMMES 25.08.1966**

**Education:** 1984-1988 Estonian Centre of Maritime Education;  
1990-1992 Kotka Marine College (Finland).

**Certificates:** Certificate of Competency Officer of the Watch No. 1266/92  
issued 27.05.1992 in Helsinki;

Certificate of Competency Radiotelephone operator No. 1207  
issued 27.04.1992 in Helsinki;

Radar Simulator and ARPA issued in Kotka 19.03.1992;

Training vessels "ARZAMASS" and "KORALL" passed the IMO  
accepted courses certificate No. 1194/1992 and certificate of Fire-fighting  
and Foundering issued in Rauma (Finland) on the 11.01.1991;

Attended a seminar on Detailed Passage Planning and Bridge Procedures for Navigation in confined waters on board the m/v "ESTONIA" during 16,5 hours in March 1993.

**SEAMAN'S POSITION RECORD:**

January, 1993 - April, 1994 4-th mate m/v "ESTONIA";  
 May, 1994 - September, 1994 3-d mate m/v "ESTONIA".

**LANGUAGES:** Estonian, Finnish, English, Russian.

**FOURTH MATE: KAIMAR KIKAS 09.04.1973**

**Education:** 1988-1992 Estonian Centre of Maritime Education;

**Certificates:** Certificate of Competency Officer of the Watch No. LL0000034 issued by Estonian National Maritime Board 28.04.1994;

Radar Simulator 10.09.1993;

Training vessel "ARZAMASS" passed the IMO accepted courses 1992;

**SEAMAN'S POSITION RECORD:**

January, 1993 - April, 1994 Quartermaster m/v "ESTONIA"  
 May, 1994 - September, 1994 4-th mate m/v "ESTONIA"

**LANGUAGES:** Estonian, English, Finnish, Russian.

**CHIEF W/T OPERATOR: TIIT SOOALUSTE 08.09.1941**

**Education:** 1960-1962 Technical Maritime College in Tallinn;  
 1983-1986 Estonian Centre of Maritime Education.

**Certificates:** Certificate of Competency 1-st Class Radio operator issued by Harbour Master (St. Petersburg) 10.06.1974, No. 997/1974;

Advanced training course at State Marine Academy in St. Peterburg 1992;

Training vessel "ARZAMASS" passed the IMO accepted courses 1992.

**SEAMAN'S POSITION RECORD:**

June, 1962 - February, 1993 chief W/T operator multi-purpose cargo vessel DWT 1847,  
DWT 4250 and DWT 7400 tons;

March, 1993 - September, 1994 chief W/T operator m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian.

**THE REMAINING DECK CREW**

**BOATSWAIN: VELLO RUBEN 17.12.1939**

**Education:** Basic

In ESCO from November 1990

Training vessel "ARZAMASS" passed the IMO accepted courses 1992.

**ABLE SEAMAN: RAIKO VISTER 10.01.1960**

**Education:** Specialized secondary

In ESCO from January 1993.

**SEAMAN: AULIS LEE 11.06.1966**

**Education:** secondary.

In ESCO from December 1992.

**SEAMAN: VALDUR MATT 19.08.1965**

**Education:** secondary.

In ESCO from January 1990.

Training vessel "ARZAMASS" passed the IMO accepted courses 1990.

**SEAMAN: SILVER LINDE 26.07.1970**

**Education:** secondary.

In ESCO from January 1993.

**SEAMAN: VIKTOR PŠENITŠNÔI 17.05.1957**

**Education:** secondary.

In ESCO from May 1982.

Training vessel "ARZAMASS" passed the IMO accepted courses 1992.

**SEAMAN: ALEKSANDER SALU 07.02.1960**

**Education:** secondary.

In ESCO from July 1985.

Training vessel "ARZAMASS" passed the IMO accepted courses 1990.

**SEAMAN: ALDO METSPALU 19.08.1971**

**Education:** specialised secondary.

In ESCO from October 1993.

Training vessel "ARZAMASS" passed the IMO accepted courses 1991.

**LAEVAARST: VIKTOR BOGDANOV 02.05.1952**

**Education:** higher

In ESCO from April 1994.

Training vessel "ARZAMASS" passed the IMO accepted courses 1994.

**ENGINEERING OFFICERS EDUCATION  
AND CERTIFICATES**

**CHIEF ENGINEER: LEMBIT LEIGER 01.12.1950**

**Education:** 1967-1971 Estonian Centre of Maritime Education;  
1981-1989 State Marine Academy in St. Petersburg.

**Certificates:** Certificate of Competency Chief Engineer 3000 kW or more No. MK0000001  
issued by Estonian National Maritime Board 05.01.1994;

Advanced training course at Estonian Centre of Maritime Education 1994;

Training vessel "ARZAMASS" passed the IMO accepted courses 1992.

**SEAMAN'S POSITION RECORD:**

January, 1972 - December, 1978 fourth engineer;  
 January, 1979 - July, 1981 third engineer;  
 August, 1981 - April, 1986 2-d engineer;  
 May, 1986 - February, 1990 chief engineer;  
 March, 1990 - December, 1992 chief engineer m/v "TRANSESTONIA" 2x3309 kW;  
 January, 1993 chief engineer m/v "SAINT PATRICK II" 2x6951 kW;  
 February, 1993 - September, 1994 chief engineer m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Finnish, Russian.

**FIRST ENGINEER: ARVO TULVIK 19.10.1952**

**Education:** 1971-1976 State Marine Academy in St. Peterburg.

**Certificates:** Certificate of Competency I-st Class Engineer No. 1271/83  
issued by Harbour Master (St. Peterburg);

Advanced training course at State Marine Academy in St. Peterburg, 1990;

Training vessel "ARZAMASS" passed the IMO accepted course 1991,  
No. 191/1991.

**SEAMAN'S POSITION RECORD:**

September, 1976 - November, 1978 4-th engineer;  
 December, 1978 - December, 1983 third engineer multipurpose cargo vessel 4490 kW;  
 January, 1984 - April, 1990 second engineer Ro-Ro vessel 4490 kW;  
 May, 1990 - June, 1991 second engineer m/v "GUSTAV SULE" 7500 kW;  
 July, 1991 - December, 1992 second engineer m/v "ELMAR KIVISTIK" 12205 kW;  
 January, 1993 - May, 1994 second engineer m/v "ESTONIA";  
 June, 1994 - September, 1994 first engineer m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian.

**SECOND ENGINEER: PEETER TÜÜR 10.09.1947**

**Education:** 1963-1968 Estonian Centre of Maritime Education;  
1975-1981 State Marine Academy in St. Peterburg;

**Certificates:** Certificate of Competency 2-d Class Engineer No. 929/72 issued  
by Harbour Master (St. Peterburg) 14.06.1972;

Training vessel "ARZAMASS" passed the IMO accepted courses  
1991, No. 47/1991.

**SEAMAN'S POSITION RECORD:**

1968 - December, 1982                    3-d and 2-d engineer;  
January, 1982 - December, 1992        3-d engineer Ro-Ro vessel m/v "HAAPSALU" 4490 kW;  
January, 1993 - September, 1994        second engineer m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian.

**THIRD ENGINEER: MARGUS TREU 28.08.1964**

**Education:** 1985-1990 State Marine Academy in St. Peterburg.

**Certificates:** Certificate of Competency Third Class Engineer No. 814/90 issued  
by Harbour Master (St. Peterburg) 1990;

Training vessel "ARZAMASS" passed the IMO accepted courses 1992,  
No. 37/1992.

**SEAMAN'S POSITION RECORD:**

1990 - 1993                            4-th and 3-d engineer;  
July, 1993 - August, 1994        4-th engineer m/v "ESTONIA";  
16 September -                        3-d engineer m/v "ESTONIA".

**LANGUAGES:** Estonian, Russian, English.

**FOURTH ENGINEER: AGUR TARGAMAA 18.12.1966**

**Education:** 1982-1986 Estonian Centre of Maritime Education.

**Certificates:** Certificate of Competency 3-d Class Engineer No. 1324/86 issued by Harbour Master (St. Petersburg) 03.09.1986;

Training vessel "ARZAMASS" passed the IMO accepted courses 1990.

**SEAMAN'S POSITION RECORD:**

January, 1989 - December, 1993 motorman, 4-th engineer cargo vessel 2390 kW;

January, 1994 - August, 1994 motorman m/v "ESTONIA";

September, 1994 4-th engineer m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian.

**ELECTRICIAN ENGINEER: ANATOLI IVANOV 16.03.1951**

**Education:** 1969-1974 State Marine Academy in St. Petersburg;

Advanced training course at State Marine Academy in St. Petersburg, 1985;

**Certificates:** Certificate of Competency 1-st Class El. engineer No. 671/1984 issued by Harbour Master (St. Petersburg), 1984;

Training vessel "ARZAMASS" passed the IMO accepted courses 1991,  
No. 1253/1991.

**SEAMAN'S POSITION RECORD:**

April, 1977 - July, 1988 el. engineer cargo vessel 2390 and 4490 kW;

August, 1988 - December, 1992 el. engineer m/v "ELMAR KIVISTIK";

January, 1993 - September, 1994 el. engineer m/v "ESTONIA".

**LANGUAGES:** Russian, English, Estonian.

**REFRIGERATION ENGINEER: ANDRES VERRO 08.09.1959**

**Education:** 1974-1978 Estonian Centre of Maritime Education.

**Certificates:** Certificate of Competency Refrig. Engineer No. 34/1992 issued by Harbour Master (Tallinn) 1992;

Training vessel "ARZAMASS" passed the IMO accepted courses 1993,  
No. 8/1993.

**SEAMAN'S POSITION RECORD:**

1978 - December, 1992                   refrig. engineer in Fishing Company;  
January, 1993 - September, 1994       refrig. engineer m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian.

**SYSTEMS ENGINEER: HENDRIK SILLASTE 13.09.1969**

**Education:** 1986-1991 Estonian Centre of Maritime Education.

**Certificates:** Certificate of Competency 3-d Class Engineer issued by Harbour Master (St. Peterburg) No. 1560/1991;

Training vessel "ARZAMASS" passed the IMO accepted courses 1992,  
No. 176/1992.

**SEAMAN'S POSITION RECORD:**

August, 1991 - December, 1992       fourth engineer;  
January, 1993 - September, 1994       systems engineer m/v "ESTONIA".

**LANGUAGES:** Estonian, English, Russian.

**THE REMAINING ENGINEERING CREW**

**VANEMMOTORMAN: TANEL MOOSAAR 29.04.1971**

**Education:** specialised secondary.

In ESCO from September 1993.

**VANEMMOTORMAN: HANNES KADAK 18.05.1971**

**Education:** specialised secondary.

In ESCO from September 1993.

Training vessel "ARZAMASS" passed the IMO accepted courses 1993.

**CHIEF MOTORMAN: ELMAR SIEGEL 06.03.1951**

**Education:** specialised secondary.

In ESCO from January 1993.

Training vessel "ARZAMASS" passed the IMO accepted courses 1993.

**CHIEF MOTORMAN: TAAVI RABA 1973**

**Education:** secondary.

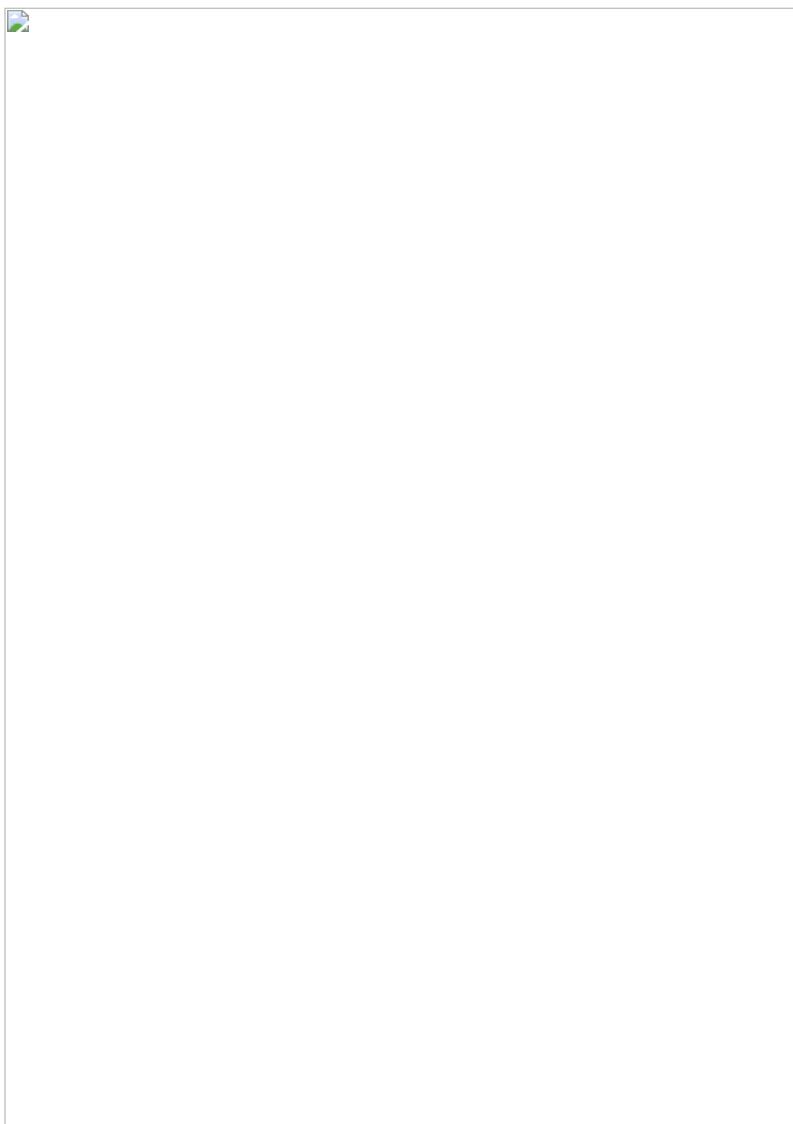
EML-is praktikant.

**MOTORMAN-WELDER: VASSILI MÄRTSON 22.12.1951**

**Education:** specialised secondary.

In ESCO from February 1993.

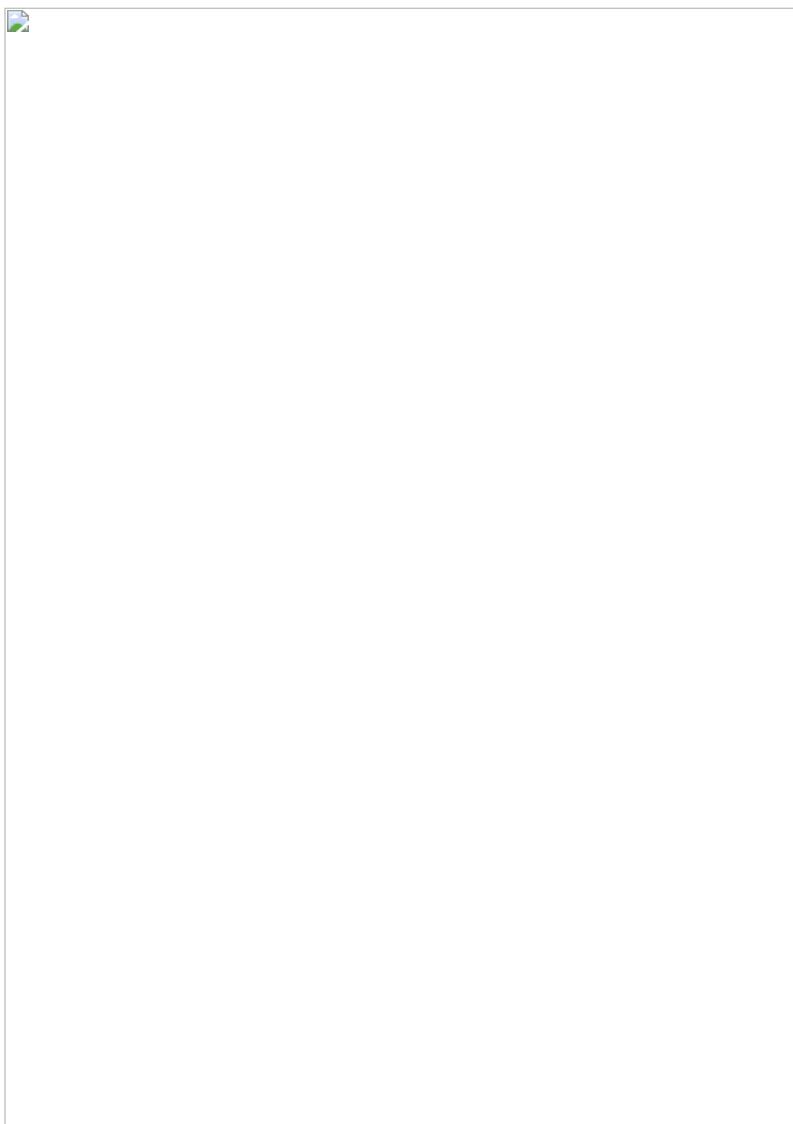
Training vessel "ARZAMASS" passed the IMO accepted courses 1993.





SAIDLÄ	SIRJE	specialized secondary	May 1994	-
KUUSK	ANDE	secondary	August 1994	1994
SAARNIIT	LUULE	higher	June 1994	-
KOLESNIKOVA	ADELJA	specialized	May 1993	1993
		secondary		
ANNUS	ALLA	higher	March 1994	1993
PASTERNAK	LJUDMILLA	secondary	February 1990	-
PLEHMANOVA	VALENTINA	specialized	December 1989	-
		secondary		
RAUDSEPP	LJUDMILLA	specialized	May 1993	1993
		secondary		
KIVIPÖLD	MALLE	higher	April 1994	1994
MAKAROVA	OLGA	secondary	November 1993	1993
SKOROHODOVA	LARISSA	secondary	August 1994	1994
MÜÜR	TIINA	higher	January 1993	1992
JÄRVI	MAYOA	higher	January 1993	1992
MÖTTUS	HELE	secondary	January 1993	-
PURRU	KATTI	secondary	January 1993	1992
PARNABAS	RIINA	specialized	May 1994	-
		secondary		
BELZETSKAJA	HELI	secondary	January 1993	1993
TILLEMAN	PILLE	secondary	March 1993	1992
VASK	JÜRI	secondary	May 1994	1994
PETTERSON	VEIKO	secondary	May 1994	-
VÕÖSA	TIMMO	higher	May 1994	1994
KOLÓŠEVSKI	STANISLAV	specialized	January 1993	1992
		secondary		
VAHTERAS	KALEV	secondary	August 1994	1994
KOPPEL	AARNE	secondary	January 1994	-
PIIUS	ERKI	specialized	September 1994	-
		secondary		
SAME	SIIRI	higher	August 1993	1993
ARRO	TIINA	higher	June 1993	1993
VALDMETS	MEIDA	specialized	January 1993	1992
		secondary		
PILL	ANDRES	specialized	March 1994	1993
		secondary		

VESKE	MARE	specialized secondary	August 1993	1993
AAVASTE	AIRI	specialized secondary	February 1994	-
TOMBÄK	ÜLLE	specialized secondary	October 1993	1993
KIPPA	EERO	secondary	April 1993	-
ORUMAA	MALLE	specialized secondary	November 1993	1993
RAUDMANN	KULDAR	specialized secondary	March 1994	-
MÜÜR	RIHO	specialized secondary	February 1993	1993
LOMP	TÖNU	specialized secondary	June 1994	-
MOLLOKA	ILLE	specialized secondary	January 1986	1994
FREIMANN	RAIVO	specialized secondary	August 1993	-
KUUSE	EVA	specialized secondary	July 1992	-
ANTUK	EVI	specialized secondary	December 1993	1993
PALGUNOV	PEETER	secondary	January 1994	1993
KIMMEL	AARE	secondary	June 1988	-
PARTSI	RUIKO	secondary	August 1994	1994
SISKA	TIIT	elementary	August 1993	1993
RAHAMÄGI	LIA	specialized secondary	July 1993	1993
MAKARENKO	ADAM	elementary	March 1993	-
LIIV	KALJU	specialized secondary	October 1989	-
LINDOK	KATRIN	secondary	July 1994	1994
NISU	ANNELI	specialized secondary	November 1992	-
BLUMFELDT	HELVE	specialized secondary	April 1993	-
RÄST	RIINA-MALL	higher	June 1993	1993





## **Statement electrician A rohumaa**

**Enclosure 13.191**Summary  
of a statement taken by Juri Liim from (L)

Arvi Rohumaa, Electrician, born 1940, living at Tallinn, Telephone 216 457

- Was together with Peter Tüür and Valdur Matt in the liferaft.
- There were 3 cameras on the cardeck and the monitor was on the bridge, the picture was constantly changing from camera to camera but could be stopped if required.

- *Why did the watch officer send Silver Linde to check the ramp, although it could be seen on the monitor?*

"I assume, that Silver Linde was sent down to have a close look, because at that time there was not that much water on the cardeck. It is possible that the water came from the side and thus it could not be seen on the monitor where it came from."

- *How long does it take before the ramp is pulled open?*

"Presumably 1 minute."

- *When were the sensors of the Atlantic Lock removed?*

"The sensors were in position up to the sinking and have not been removed. They were regularly controlled. This was our obligation. There were control lights. If they were out, we had to check them.

The sensors were frequently out of order. The sensors were very sensitive and do only function when they had a certain distance to the bolt. The repair was effected by changing the distance of the plate. This "repair" they carried out monthly. The sensors did not react on the bolt thus the distance between sensors and bolt had to be reduced."

- *When were the control lights on the cardeck panel green?*

"When the visor was closed, it was green, open = red.

- There were 2 systems of control lights showing the condition of the visor

(1) on the bridge

(2) at the captain's room (?)

If one lamp was out of order we had to replace it at once.

- Everything could be controlled from the bridge, everything was in order."

- *What is your explanation for the many footprints inside the visor?*

(R. became obviously nervous)

"What can I say to this?"

(R. obviously not been prepared to answer such questions).

"The inside of the visor was very dirty. Each person walking inside left foot prints. We have visited the inside of the visor very often, honestly once a month or as required. The electricians and the boatswain are visiting this place. We could only enter through a particular opening on deck. There was a special opening with stairs. From inside the vessel the visor was not accessible."

- *Why is it necessary to visit this space, say once a month?*

"Because we had to check the position of the magnets as required."

- Juri Liim submits a drawing made by him according to the advice of Rohumaa which shows the control panel on the bridge. According to Rohumaa there was a dimmer fitted to the panel which very often was turned to zero, thus the control lights were dark.

- *What means "as required"?*

In his opinion whenever something was wrong they had to go down.

- Normally the speed was reduced at sea after having reached a certain position. This was not done on the last voyage. The speed remained unchanged full ahead.

- *Wasn't it clear that at such weather too much speed could be dangerous?*

May be the master of the ship did not know that the bow of the ship was so sensitive.

- The pilots were all the time at the bar.

- The 2nd Mate was responsible for stowing the trucks properly on the cardeck. On a previous voyage he noted that the chiefmate was also present. There was a stowage plan according to which the cars had to be positioned to make sure that the vessel had no list and forward trim.

- The crew did not know what was in the trucks.

- Trucks were secured by chains, small cars just by shifting in the gear and pulling the handbrake.

- Heard that a truck loaded with timber toppled over. (How could he know that it was timber??)

- Upon being questioned a 2nd time why Silver Linde was sent to check the bowramp, he replied: "I do not know but I could assume that there was no green light."

- They have always carried out all work as required. "I am sure that all sensors were in order.". In case nevertheless somebody was sent for control the distance between sensors and bolt must have increased.

Thereafter he spoke about the dimmer at the bridge panel which had always been set to the minimum.

**Note:** In the opinion of Juri Liim has the electrician tried to be helpful but whitewashed his own area of responsibility and otherwise told certain things which he had heard from others and which he did not assume to be critical. (There have been a number of confidential meetings between ESCo. managers and supervising deck- and engine staff members to clarify certain matters and which were partly attended by the electrician.)

Office Translation

Arvi Robumaa - ( II.)

Interviewed by Juri Lilim the 2nd time in 6/96

A: Knows the cracks only through the media viz. that an apprentice had chiselled rust at the hinges of the visor when he saw cracks.

Q: It is unknown what is the truth. It was said that either in spring or early summer welding work had been carried out to the visor?

A: No, I cannot confirm this.

Q: In case more serious repairs should have been carried out, was this done by crew members or shore people?

A: Have not seen anybody from shore, I have only seen crew, who did the greasing and also exchanged (cannot find the word). In short, I have not seen anybody from shore working at the visor. If anything was done to the visor it was done by the crew. I do not know what was done when the vessel was in the yard.

Q: At one side of the bow ramp was the metal piece hammered and also the rags plugged into the gap?

A: I know nothing about the metal piece, but as to the rags visible under/water I know with certainty that these were mattresses. The mattresses were in the starboard sidehouse where the boatswain also stored the mooring lines. After the renovation of cabins there were 2-3 mattresses on top of the mooring lines. These are visible on the underwater videos.

Q: How many indicators had the visor?

A: I may be lying on this answer. There was one indicating visor open, another one visor closed. That's all.

Q: It is certain that the indicators were securely fastened?

A: Yes, they were fitted to the bottom of the ship by means of a plate. When the bolt of the Atlantic lock was closed the indicator showed closed and if the bolt was open, it was showing open.

Q: Did the hydraulic of the Atlantic lock work properly to the end?

A: It had to function, otherwise the visor could not have been opened/closed. In case the visor could not have been opened it would have been the responsibility of the 2nd Eng. In case the indicator would not have functioned it would have been the responsibility of the electricians. As far as hydraulic and electrical sensors were concerned there were no disturbances in their functioning.

Q: It was said that the hydraulic sometimes could not close the bolt and that crew members had to assist?

A: This is an anecdote. This means that a hatch would have to be opened at the top of the visor, then climb down a ladder several decks, and I really don't know what I shall think about it. This doesn't make sense.

Q: I will now show you the photos showing the indicator plate. It was said that the storm was so 'clever' as to turn off the screws. Please comment.

A: This is quite simple. The lugs at vessel's side were broken. The visor lug remained intact and pulled the bolt out of the lugs at vessel's side (pointing on the photo). The visor then got lost and the bolt fell out and that's the way it was. (explain further)

Q: It is alleged that there has been water in the visor. As the sensors were sensible to water they were switched off and short circuited to ensure green light.

A: Such possibility does not exist, the idea is absurd.

Q: Was there a particular stowage plan for smaller cars, trucks, etc.?

A: Not my job. But I know that they had so-called stowage plans. It was known by those in charge how many bigger cars respectively smaller cars had to be stowed where. It depended on how many smaller cars there were. For these there were also lifting decks.

Q: Where did you end up after the rescue?

A: "Silja Symphony" to Helsinki, University Hospital.

Q: What in your opinion is the reason why "Estonia" shall be covered by concrete so quickly?

A: I think they want to destroy the evidence, because 90% of the relatives are opposing it. I think the Yard, Bureau Veritas and Silja are behind it to cover the evidence, because thereafter there will be silence.

Q: I know that the Yard has categorically protested against covering the wreck, but cannot say about BV.

A: I have just expressed my personal opinion.

## Statement motorman E siegel

## Enclosure 13.192

Office TranslationElmar Siegel - Motorman -

cabin 7007 - port side

(Interview by Juri Liim in June 1996)

- from 3.2.93 until casualty on "Estonia" as motorman
- his job is mainly in the engine room
- Last hour of "Estonia":
- on watch 20h00-24h00;
- by lift up to his cabin and to bed - cabin 7007;
- Kadak had taken over the watch from him at 24h00;
- when he was in bed for some time the banging began and then came the list and everything happened very quickly.
- When I got up the vessel had a certain list, I dressed and went out to see what was wrong.
- List was ca. 15° - 20°.
- What banging noises? From sea impact? It was as if the vessel was setting into heavy sea and thereafter vibrating for some time.
- Crew alarm before the things fell down from the table? No, heard nothing.
- Outside the people were running up and down, the list was then in excess of 30°.
- Could no more leave the cabin through the door, which was to the lower side and used the window.
- His cabin was on the port side.
- When he was on deck a female voice was screaming "Alarm, Alarm". He did not recognise the voice, there were a lot of trainees onboard.
- How quickly did the list increase? Very quickly, within 15-20 minutes it was all over.
- The vessel was on her side and the stern was below water.
- He recalls to have seen Paul Andersson.
- Then speaks for some time about getting into life-raft and the like.

- Saw how a helicopter lifted up one man from a life-raft, lifted him up ca. 20 m when the man slipped out of the sling, he saw how the man raised his arms up and then fell back from ca. 20 m into the sea; he recognized the man, it was the Lagerarbeiter (does not mention name), the man was drifting in the water and was most probably dead from the impact. He did not see that the body was recovered. (Note: It was most probably Kalev Vahtras.)
- By helicopter to Mariehamn.
- Isn't it interesting that Margus Treu is refusing to talk at all? No comment.
- When he handed over watch all four main engines were in operation.
- The Estonian Commission has not questioned him.
- Speed under the circumstances was too high, compares with "Mare Balticum".
- The list must be 20°-30° for the main engines to stop.
- Any knowledge about water in bow thruster room? Don't know, have not been there personally, but if there would have been water the respective indicator lights would have shown it.
- How much water must there be in order to be noted? There are electric motors, but if the water is only high half way up to the knees, for example it would not be noted.
- Was the hatch normally open or closed? The door was normally closed and also the hatch.
- How were the cars and the trucks stowed? Not his job.
- Did "Estonia" leave Tallin with some list? Yes, a list to starboard. Leiger (Chief eng.) had phoned the engine room and asked whether it was possible to correct it. It was a mistake made during loading. The tank at the side which would have to be filled to correct the list was already full and the tank at the other side was already empty. Therefore we had no possibility to correct the list. It was 1°-2° and due to the waves up to 3°-4°.

- Any repairs to the visor or defects? No, there was nothing, but this is not my job.
- Cardeck was always dry and when there was water it was only very little.
- They had problems to open the visor only in winter when it was frozen, otherwise not.
- Is asked to comment photos? Water can only enter the visor if the packages are not intact or when washing deck through the holes in deck for the cylinders.
- Yes, there were mattresses, up in a room there were a lot of mattresses, when they repaired a fire-extinguishing system he saw the mattresses, it was the room where also the boatswain's store were. He did not know for which purpose were there so many mattresses. Behind the bow ramp was a room from where you could go further down, there were ropes and other boatswain's stores and a lot of mattresses (indicates the room on the photo). From this room you could enter the bow thruster room. This is where the many mattresses were. There were also many rugs. From here they could have taken the mattresses and rugs.  
 When we repaired the fire-extinguishing system I saw the many mattresses and rugs, but do not know for what purpose they were used. Before repairs water ran out of the system and the boatswain asked for repairs. The water down there could also have come from the fire-extinguishing system.
- The scuppers on cardeck are normally open at sea and are only closed in distress situations.
- Is it possible that through these scuppers water came onto the cardeck? But they have to be open at sea, it is forbidden to close them.
- Can it thus be concluded that these open scuppers in addition had let water in on the cardeck? Yes, at the moment of the list the water cannot run out through these openings. These scuppers, however, function only if there is no list?
- The speed was about 15 kn.

- What was the maximum speed possible in this storm? About 20 kn.
- Storm forecasted? Yes, the Chief eng. has ordered to make seafast all moveable things in the engine room.
- The wind speed was forecasted to be 20-25 m/sec. We also previously have had similar wind speeds and we have always been warned.
- Why did the vessel take the list so quickly? Water entered very quickly, high speed, plenty water on cardeck.
- Why could they not see on the bridge that water had entered the cardeck?  
 Ask the people who were on watch on the bridge.

## Statement motorman I Ziljajev

put on a sweater and overall when the ship suddenly got a push and I almost fell. I put on my sport shoes and looked through the window. Outside on the boatdeck I saw ca. 150 persons, most of them already wearing life-vests. It was raining and there was also a strong wind. I climbed through the window onto the deck. I did not take any passport, etc. because at that time I thought that I could return later, I believed that it was not that bad. In way of lifeboat No. 6 I took a life-vest and I saw the people standing on deck distributing the life-vests among the people coming up from the inside of the vessel (chain of persons, hand to hand). I joined the chain, when I saw Arvo Piht who also participated in the distributing life-vests. We were standing with our backs to the bulkhead and reaching the life-vests from hand to hand. Then I tried with somebody else to lower a lifeboat. It was a Swede. When he realised that I tried to lower the lifeboat he said: "Do something."

It turned out to be impossible to lower the lifeboat and we then tried to throw down the boat ladder, which was very difficult. Another crew member, I believe it was the barkeeper, helped us. We rolled off about 7 m of the ladder whilst the list increased more and more.

The list was so large that we were unable to roll off more of the ladder. The list increased more and more and the stern sank deeper. The starboard side was now already submerged.

When I was standing at the port outboard I saw people moving liferafts down the side towards the bottom of the vessel.

When the list was 90° or more I tried to help, but my shoes were too slippery because diesel fuel had escaped, I assume, from the emergency generator. I tried to remain on the port side and hold myself to the crate of a window. There I stayed until the water was ca. 2 m away from me. Near me was a boy ca. 12 years old, I gave him a life-vest and showed him the way to the water. Also a Swede was next to me. We 3 jumped into the water and were picked up by different liferafts. Silver Linde appeared, but decided to swim to another liferaft.

Ca. 1 ½ hours later we saw 1 ship and also helicopter, we had fired off the rockets. Rescued by "Isabella" together with another 17 persons. Came to Helsinki and then Hotel Häga.

Q: Did you see the name of Capt. Piht on the list of survivors?

A: No.

Q: Before the list anything else abnormal?

A: Wave impact, yes. After I woke up due to the list I also heard the engines running. How can I explain? It appeared as if the pitch propellers were running in 0 position. I must say that I react rather sensitively in these matters. When I do not hear the engines anymore I wake up immediately, even if the pitch is changed I wake up already. I heard the engines running, I cannot say how many but I heard the noise of the running engines. I got the impression that the vessel had stopped in spite of the engine noise. I want to make this quite clear, it appeared to me that the vessel was still making headway due to the momentum it still had, but without propulsion (to compare it with a car, the gear was not shifted in). I assume it was a manoeuvre. They tried to change the condition of the vessel.

Q: When was that?

A: It was at the time when I was still in my cabin, already dressed and looking out of the window. I also realised that the ship was turning and simultaneously I felt strong wind blows. The waves were so high that water spray came up to Deck 7. I believe the ship turned to port. The list increased continuously.

A: I did not have enough time to realise all the circumstances, because I had to concentrate on the activities I was responsible for, e.g. I had to lower lifeboat No. 9 which was at starboard side and was no longer accessible due to the severe list. The starboard side was already below the water surface. Therefore I tried to lower the 6th boat at port side.

Q: Did you hear any commands/orders from the officers?

A: When I had climbed out of the window I saw Capt. Piht nearby. I wanted to ask him what was going on, what had happened. But I knew that he was not in command on this voyage, he was a passenger.

Q: Earlier you stated that the speed of the vessel was too high during the storm. What else can you say regarding this?

A: I felt strong impacts of the waves against the vessel's hull and I understand that in such situations the speed is reduced by order of the master. However, time schedule is time schedule. It can be assumed that the speed was reduced, however, the wave impacts were so strong that in my opinion the speed was still too high. What else can I add? It happened frequently that the waves struck so heavily against the vessel. I also experienced this on "Mare Balticum", the same as it had been on the "Estonia". In such a condition I cannot sleep. During the last night on "Estonia" the wave impacts were really very strong. I will explain it as follows: The vessel was struck once and before the vessel could move completely back it was already struck by the next wave, and so on. Thus I got the feeling that the impacts occurred faster and faster.

Q: How would you explain the condition of the vessel? Unnormal, particularly dangerous?

A: No, I cannot say this. I had experienced similar situations a number of times. All this did not disturb me. I simply did not get the idea that something could happen. It was beyond my imagination that anything like what happened subsequently could be possible with a vessel like ours.

Q: Nevertheless, did you realise that the speed was too high for this storm?

A: Well, I am a motorman. I know from experience that normally experienced masters do reduce speed and keep the bow against wind and sea. In this case we had a large vessel with 4 engines and therefore this vessel could cope with it.

Q: How many engines were running then?

A: I don't know exactly.

Q: Normally, 1 engine remained in reserve, thus was not in operation?

A: That's true, one sometimes two remained in reserve. But the sea was stormy and therefore it is possible that all engines were running, but I do not know. The crew on watch should be asked, e.g. Margus was on watch and he can say.

Q: Now we turn to the cardeck. How was it loaded? How many cars were loaded and where were the big ones and the small ones stowed?

A: Normally this was not my job. Sometimes I came to the cardeck when something had to be done on the cardeck, I was able to see what was going on - I can say, however, that the big cars were secured to the deck by special equipment. The cars were standing rather close to each other. There were only very narrow passages between them for the truck drivers. The cars always were standing very close to each other, so to say the vessel was filled up with cars. It was very seldom that there were only few cars on the cardeck. Especially in summer time the cardeck was always full.

Q: Can you tell me why there was always water in the bow thruster room?

A: Is unknown to me that there was water in large quantities. If, however, there was water then the crew had to pump it out.

Q: Were these spaces always openly accessible to everybody or were they locked?

A: Normally these spaces were kept locked.

When I was working in this room I closed the door behind me and after I had finished the work, I also closed the door after I had left the room.

Q: Although it does not belong to your functions, could you tell me something about the technical deficiencies of the visor. A member of the Estonian Commission has reported that there were deficiencies.

A: No, I have no knowledge about such deficiencies. I could not imagine that something could happen with the visor. I have absolutely no knowledge about any technical deficiencies, because the vessel had been classed only recently and all movable connections were properly lubricated. We simply did not note anything.

Q: When had "Estonia" been to sea for the first time?

A: I don't know exactly. In February we made a trial trip. I think, at the beginning of March. We commenced the scheduled sailing approximately in March.

Q: Was "Estonia" thereby painted? But you were to tell something more? Do you know whether any weldings or main repairs were carried out at the visor?

A: No, I don't remember that a welder had been doing something. This is unknown to me. Maybe this was done by the other crew.

Q: Can you tell me something about what of the Atlantic lock did not function properly?

A: I know nothing about any technical deficiencies to visor and Atlantic lock. If there would have been any the 1st Engineer would have instructed the crew to carry out repairs. This I would know. At such works there would normally participate 1 winder, 1 welder and the engineer. I do not remember anything in this respect. As far as the hydraulic installation is concerned this was the job of the 2nd Engineer. I cannot say anything else! Nobody else.

Q: Whenever such repairs became necessary were they carried out by crew and not by shore people?

A: Smaller works were performed by the crew, because the crew members were more acquainted with the vessel. It is possible that some jobs were done by the Yard or by some repair shop. In such case the responsible engineer made up a summary of the work to be carried out and on that basis the shore people were instructed. This was, e.g. the responsibility of the 2nd Engineer, also the boatswain had to report about necessary repairs. I don't remember that such things happened when I was onboard.

Q: There is a further thing to which I would like to bring your attention, viz. that the trucks were badly or not secured to the cardeck, shifted in the storm and pushed against the bow ramp and/or the sides?

A: This I can hardly imagine. If the trucks would have been badly or not secured, because the movement space was too small to break through the sides, because they were standing very close to each other. It could be assumed that the securities of maybe 1 truck broke due to the stormy sea and the strong waves, but it is in my view unlikely.

Actually it was quite different. The waves tore off the visor and the bow ramp opened.

Q: There are written statements in the files of the Commission that water was observed flowing out of all the holes of the bow ramp (unclear he means most likely the leakages at the visor bottom). How could the water get there?

A: There were rubber packings and if they are old or worn there are cracks. If that should be so, then water may penetrate, but not in large quantities and this is completely unrisky. If the water penetrates it accumulates in a sort of well and can be pumped out. When visor and bow ramp are opened the water simply flows out, this is not a risk to the ship.

If visor and bow ramp are opened the water flows out and this does not lead to the vessel going down if it should flow in and also that inner spaces are flooded by water. The cardeck has scuppers which can be used to let the water flow out. The outlets outboards are located above the waterline

and, therefore, water from the cardeck must flow out. What happened in the case of the "Estonia" was that the bow ramp very suddenly became opened and the water penetrated in large quantities. This cannot be compared with the small quantities penetrating through the small holes. I don't remember that such leakages were on the "Estonia", which are anyway not dangerous. The rubber packings were o.k. I cannot say exactly. This has to be discussed with members of the deck crew, they know that. It was not my job.

Q: You are an experienced sailor and you yourself have started to talk about the scuppers. Were those scuppers or their closing devices always open or were they closed sometimes?

A: I think that they were always open. After the cars have left the ship the cardeck is washed with a lot of water which flows out through the scuppers. I therefore think that the scuppers have never been in closed condition.

Q: I will now show you the photo where the water level inside the visor can be clearly seen. There should be electrical sensors. What do you think? Had they been there or not?

A: I do not know whether the sensors were there or not, but they had to be there. They should have been in functional condition. I think that the water could not reach the sensors. I believe that the sensors were located higher up. Otherwise the vessel's construction simply would have been faulty.

Q: Shows photo with empty sensor plate. Do you see that the sensor simply is missing?

A: Well, maybe the sensor was torn off?

Q: The water level was too high and it was simply dismantled. Could it have been like that?

A: No, I don't believe that. To the contrary, the crew had to do something to make the sensor workable. We had a very responsible electrician who certainly would have done something, if it would have been like that.

Q: I have asked you the question, because the Commission is interested in that.

A: At this time I was not interested in this particular place of the vessel. It was not my job. But I know the electrician quite well. He always did the necessary. In case the sensor would have been out-of-order or missing, there wouldn't have been any indicating and the boatswain, who was responsible for opening/closing of visor and ramp, would have noted it immediately.

Q: It is alleged that the control panel had been switched off?

A: This I doubt. What would the purpose then be? I am of the opinion that nobody deliberately switched off the control panel.

Continued at Ziljajev's Home

Q: It is known that there were Swedish pilots on the "Estonia". Why didn't they note anything? What was their reaction?

A: Difficult to say. Normally they came onboard before entering the port. Do you maybe mean the Swedish mates?

Q: Yes, maybe they were mates.

A: I assume that these mates at that particular time were resting, because they work when the ship is near the harbour.

Q: Probably, they were resting. Yes.

A: I don't know whether they have to be on the bridge at sea as well, but the pilots are on the bridge as soon as the vessel is approaching port. Yes, I can say there was one pilot, no, not pilot, one mate who is now on "Mare Balticum" (from the other crew). I don't know why the Swedish mate did not warn before the danger or advise the master respectively.

Q: The chairman of the Commission, Andi Meister, has recently reported that the master of the Estonia could not have been aware of the too weak construction of Estonia's visor. Is this possible?

A: Yes, it has to be assumed that the master did not know anything about the weak construction of the visor, and also that the previous occurrences were unknown to the master, and that at such a speed and wave strength the vessels built by the same Yard allow water to penetrate into the visor and that at this speed and wave strength the fastenings of the visor broke off.

Q: The weakness of the construction does not come from me, but from Andi Meister. Was it a must or was it a requirement from the management that "Estonia" or any other vessel may not miss her schedule, i.e. be delayed?

A: With "Estonia" we were always on time. The master had a time schedule received from the owners and we were always on time. The masters always followed the schedule received from the company. According to contract he had to follow this schedule.

Q: You have now told us about the obligations of the master to follow the schedule. There are rumours that masters who are unable to keep the schedule will be sacked.

A: Yes, that is principally so. This is the requirement of the company that the master has to maintain the schedule. Some of the passengers have to reach other connections and if they miss them, because the vessel is delayed, the company has to pay compensation.

Q: Which company has worked out the schedule?

A: Estline AB. But I don't blame Estline for anything. Each company has its own schedule, where it is described up to the minute. If a company buys a ship, then it is not completely known how the vessel reacts during operation, how much power is needed a/o during a storm.

Q: Some more questions which come up. When "E." departed from Tallinn on her last voyage did you note the list?

A: No, I did not note it. Shortly after departure I noted that the wind was rather strong and that the waves became stronger. This was still before 20h00. At 19h00 we departed and this was shortly before 20h00. At this time I was drinking tea and spoke to a crew member. I thought then that the list could have been caused by the wind. The storm increased continuously.

Q: Normally in such circumstances the crew is warned and instructed to secure loose objects, etc. Was there such a warning?

A: No, I did not hear such a warning. Generally I am anyway making sure that moveable objects are secured in my working area.

Q: Would it be possible that in bad weather water penetrates the engine room and that the engines would stop?

A: Do you mean the bow thrusters? They are not used at sea. There they are switched off.

It is, however, possible that these bow thrusters are also used at sea to quickly change course if the mate is clever enough to make use of them.

Q: Some more general questions:

Do you know what works were carried out at the visor in addition to general painting?

A: I don't remember. Yes, there were paintings, rust was chiselled, stagings were erected. I don't remember any welding work or any work which I was instructed to do as winder.

Q: Any works previously carried out?

A: Maybe, I don't know exactly. Probably some works were carried out. Some type of work always had to be carried out, for example we mechanics had to measure the clearances, i.e. the space between the moveable parts, and register these into the Watch Log. (Note by the translator: "The witness means the distance between rubber packings and bow ramp with "clearance".) These also had to be examined by the boatswain and the

deck crew, and if the packings were not watertight, then new packings had to be ordered, but this is not known to me. If something was wrong with the rubber packings it might have been that they were torn/burst.

Q: Should they have noted it?

A: Yes, if they worked there they must have noted it.

Q: Maybe it is of some importance. As you can see from the photos, also the bow ramp was damaged. It is clearly visible that from one side a metal piece was hammered underneath to lift up the ramp and that from the other side rags had been plugged in.

A: I cannot give any comment. I cannot explain from which side and what.

Q: From the right side a metal plate.

A: What was with the ramp? Was it bent or how was it damaged?

Q: The connections (hinges) were bent and the ramp was misplaced and some experts are of the opinion that the metal piece was necessary to lift up the ramp.

A: I know nothing about all that. If the ramp was bent, crew members would have been instructed to do repairs. I don't remember that something was wrong with the ramp. Either the welder or somebody else from the engine room should have been instructed to carry out repairs. I don't remember.

Q: Something in way of the ramp was bent?

A: How far was it bent? To straighten something is no problem, but if it is really bent we can do nothing. The crew is unable to do that. And if you allege that weldings or major repairs were carried out or something pushed in .....

interrupted by Juri Liim.

Q: This is the opinion of the experts.

A: I cannot say anything else about it.

Q: Who of the crew visited the following: - visor?

- ramp?

- Atlantic lock?

A: Boatswain, 2nd Engineer, certainly the boatswain who was responsible to open/close the visor/bow ramp. If something was wrong, the boatswain had to report to the Chief engineer, who instructed respective crew members to check the circumstances and carry out necessary repairs.

Q: Could the A.B.'s also attend at these locations?

A: Yes, they could also note irregularities and report to the boatswain, but they were not obliged to do anything.

Q: The boatswain had to arrange the necessary steps?

A: The boatswain has to report on all deficiencies, failures, etc. in general to the Chief engineer, however, everything which concerns bow ramp and visor falls in the responsibility of the 2nd engineer. He inspects the hydraulic installations, e.g. the cylinders, mechanical parts which are moveable, (Note of the translator: The witness means Atlantic lock, hinges, etc.). The rubber packings are inspected by the boatswain. The 2nd Engineer cannot know how tight the visor or the bow ramp are closed or whether the water is kept out. I assume that the boatswain was responsible to report on the condition of the rubber packings.

Q: A while ago you told me about an incident which occurred in the past and which became known only after the catastrophe. Could you please repeat this?

A: Early in the morning when I was rescued and was already onboard of "Isabella" I met the 2nd Engineer Peeter Tüür. I was picked-up at about 07h00 and was back to life at about 09h00 when I met Peeter. I was happy to see him in relatively good condition, he could walk and talk. I asked him what happened, as I didn't know anything at that time. He replied that shortly after the list occurred he had met Arvo Tulvik in the alleyway, who told him that the visor was torn off. Tulvik was the 1st Engineer who was a very pleasant man and well acknowledged engineer, who unfortunately did not survive.

Q: Let's talk about the visor. Were visor and bow ramp opened also at Stockholm?

A: In Stockholm, I cannot say exactly. When the vessel was berthed with bow to the quay the visor and bow ramp were opened. But, not in Stockholm, the stern was to the quay and the bow to the sea. Thus the stern ramps were used.

Q: Let's talk about the Atlantic lock. It has been found that the opening in the visor lug was no round but oval which indicates substantial wear. Did you hear any noises, like clap - clap - clap, which could indicate that the visor was no more tight?

A: I cannot say anything about that. I never heard such strange noises. In case this opening should not be round but oval, I do assume that this occurred on the night of the catastrophe and I further assume that this led to breaking during the storm. I am not acquainted with the conclusion of the Commissions, but I do assume that this lug became deformed on the night of the catastrophe.

Q: How often were all 4 engines in operation?

A: In narrow waters and during storm as far as I know. On the night of 28.9.94 all 4 main engines were in operation.

Q: Why was the speed then not reduced? Was this just due to the schedule? What is your opinion as to this?

A: I don't know. The other ships which were so to say on parallel course to us did reduce their speeds. Why this was not done on "Estonia"? I don't know. This is the decision of the master. Maybe he had to keep the schedule in order to avoid a delayed arrival.

Q: It is reported that the trucks on the cardeck shifted or toppled over when the list increased 45°. Did you observe or hear anything in this respect?

A: Well, I didn't hear it, but if the cars topple over there must be such noises, but I think that the trucks could not topple over because they were secured. The personal cars could topple over, but this could not make so much noise. If the trucks topple over it creates more noise. The trucks could have toppled over if they were heavily loaded and this would create a lot of noise.

Q: There were some trucks loaded with timber that is to say logs and these logs had been falling off the trucks. When the trucks are loaded with logs some logs are placed vertical to hold the others, i.e. these vertical logs had to avoid the falling off of the others.

A: Maybe. But we don't know whether it was done. Further we don't know what was loaded on the trucks below the tarpaulins and whether the cargo below the tarpaulins was secured or not. We don't know what was in the reefer containers. There was no possibility for the trucks to topple over because they were standing very close to each other and there was insufficient space. Furthermore, in the middle of the cardeck there was the centre casing which was also there to avoid the toppling over of the trucks.

Q: I understand it such that at the utmost the trucks could lean against each other and accumulate in a sort of heap.

A: Yes, that is so. If, however, the list is in excess of 60° or 65° than one can imagine that the trucks topple over or e.g. the trailers become disconnected from the trucks. This would create a lot of noise, but in my opinion the waves smashing against the vessel's hull were much stronger and these could be heard. The list was already almost 90° when I heard banging noises. It appeared to me that something huge had been torn off and was falling down.

Q: It is reported that the deck of the vessel had become slippery? How can that be explained?

A: It was at the time when the list was approximately 60°/65° and the emergency generator running on diesel fuel was still in operation. After the list was in excess of 70° it stopped running and when the vessel was on her side the waves were smashing against Deck 9 where the emergency generator was located as well as its fuel tank. I do assume that diesel fuel escaped from this tank and spread at the port side of the vessel. I realised the smell of diesel fuel.

Q: Slippery?

A: Yes. I almost slipped off the deck when I tried to reach the aft part of the vessel. Then I saw one stabilizer which was moved out, which I could not reach because it was so slippery and I grabbed a window crating to which I held fast.

Q: Did you see A. Piht or L. Leiger?

A: Leiger not, but Piht I told you already about.

Q: I forgot to ask you. Where did you meet Capt. Piht? What did he wear and in what condition was he?

A: It was in way of lifeboat no. 6. He stood on deck and leaned against the vertical bulkhead of Deck 7 where the crew's quarters were. Thereby he distributed the life-vests to a chain of people. I participated shortly in the distribution of life-vests. Thereafter I came to a life-vest case and took them out and dropped them to the deck for those who needed them. I did not talk to Piht. I thought because Piht was participating in the distribution of life-vests there must be a captain on the bridge. Furthermore, Piht was a passenger. Piht was wearing a pullover. It was not totally dark. He was also wearing trousers. He was not wearing a life-vest, although there should have been sufficient time for him to put on a life-vest. Thereafter I left this place and do not know whether Piht has put on the life-vest subsequently.

Q: Did you note any injuries?

A: No, nothing.

Q: What about the passengers?

A: There were about 150 persons at the port side of Deck 7, partly in panic waiting for instructions.

Q: Did orders come?

A: Yes, when I was trying to lower boat no. 6 and was working on the ladder the "Skylight" message was announced, "Mr. Skylight No. 1 and No. 2". This amazed me. These coded orders mean for the crew that all crew members have to go to their stations. Why did they not say in clear text that the lifeboats have to be lowered? I was part of team no. 1 and my station was on Deck 8. I tried to reach it, but it was impossible. The list increased continuously, I was unable to reach Deck 8. I climbed over the railing onto the port outside hull.

I also heard another announcement, it was a female voice from the Information. Certainly not from the bridge, from a mate. "Abandon vessel." The voice became continuously weaker and suddenly there was a banging noise and thereafter silence.

Q: Who said "Skylight 1 + 2". Did you recognise the voice?

A: I cannot say exactly, but I think it was "Tormi", the 2nd mate.

Note: 2nd mate Tormi Ainsalu, who was then watch officer.

Q: After this announcement did you stop your endeavours with lifeboat and ladder?

A: Yes, I did and tried to reach the 8th Deck in vain and then had to climb over the rail to the outside.

Q: How long time did it take what you have explained?

A: Maybe 1 or 2 minutes, not more.

Q: Do you think that the Skylight order did not make sense, at this time?

A: I cannot judge whether the order did make sense or not. Maybe those on the bridge did not know the situation. Therefore at first this order was given in order that the crew can go to their stations and withstand the accident. It was not foreseeable that the vessel would capsize. They acted possibly according to the existing rules, possibly. In addition there was this panic.

Q: In my view the order should have been to go to the lifeboats.

A: This is also my view. The order should have been given at once to go into the lifeboats and this should have been ordered much earlier, when the first sign of danger was there and I was still sleeping in my cabin and not when the list was already that large. I should have been woken up with this order instead of being woken up by the sudden list when my feet were moving into the cabinet.

They should have given the order when the bridge got the information that the visor was torn off.

Q: It seems as if the panic did not break out only between the passengers, but also on the bridge?

A: No, I don't believe this. They stayed simply cool and quiet.

Q: Then it would have been a deadly silence.

A: Yes, this you can say.

Q: Did you note through which doors the passengers mainly got out?

A: Mainly in the aft part.

Q: Was there panic?

A: Mainly the lady passengers were close to. I personally could not believe that the vessel would sink. I did not know that the visor had broken off and the water in large quantities was penetrating the vessel.

Q: How often were you summoned to and questioned by the Commission led by Andi Meister?

A: If you mean the Government Commission or its members, like you, at the first time it was in Finland. I was interrogated in Russian. It was in Helsinki and I was questioned by members of the Finnish Commission, after "Isabella" had arrived we were transported to the hospital. Some, like me, were released shortly later and brought to Hotel Häga, where the first interrogation took place on the same day.

Q: In Tallinn?

A: We were questioned in Tallinn by the Commission immediately after our arrival by plane. We had no possibility to contact our relatives. This was a very long interrogation, 2-2 ½ hours we have spoken.

Q: What did you say that long?

A: I did not say much. I was interrogated and many questions were put to us.

Q: Were the questions similar to those asked in Helsinki?

A: The questions were not so good in Tallinn.

Q: Tell me some "bad questions" for example?

A: On the evening of 29th it all started that I was forced to sign a declaration that I was informed that a wrong statement would be a criminal offence. I did not understand what that meant. Am I a criminal? What have I done? It took that long, all were released already, only me and Peeter Tüür were interrogated much longer than the others. I was repeatedly asked about the degree of the list and particular times. The Commission members tried to make me walk into a trap. They asked several times the same in order to find out differences. I have told them everything, more than I probably should say. I was treated like a criminal.

Q: Who was leading the interrogation?

A: I don't know exactly, but I assume that in Helsinki they were from the Security Police. Yes, I am of the opinion that those who were leading the interrogation were from the Security Police. This was told to me by the translator.

Q: When did the interrogations take place?

A: In Helsinki was in the morning of the 29th and in the evening at Tallinn airport in some room in the basement. At 22h00/22h30 I was finally released. the plane arrived at 15h30.

Q: Any further interrogations?

A: Yes, I was asked by telephone to come again. Before that on the 6th October there was a meeting of the surviving crew members in the Sailors Club, Tallinn, which I also attended. I was contacted by a young guy, we spoke Russian. He suggested to come with him to discuss some matters. We went to his office which was in the Laistreet in a building (known to Juri). There was another interrogation leader who apologized for the behaviour of his people at the airport and that it took so long, he asked some questions, a protocol was made, which I signed.

Q: Any repeated questions?

A: Yes, some, but no so persuasive. Then they drove me back to the Sailors Club. The meeting was already over. Thereafter I was again asked to come for an interrogation. In January or beginning of February 1995 shortly before the report of the Commission was published. I was also telephoned. This was a rather short interrogation and I was told that basically everything had been clarified.

Q: How about the Commission?

A: I thought that would be the same and that the Security Police was acting on behalf of Andi Meister. I have never been questioned directly by Commission members.

## Calculations of ship consulting OY TURKU

**SHIP CONSULTING**Telefax Mess...<sup>5</sup>

## Postal address:

Ship Consulting Ltd Oy  
Kressunkatu 31  
FIN-20460 TURKU  
FINLAND

Telephone: +358-2-247 1281  
Telefax: +358-2-247 1282  
GSM: +358-400-524 773  
GSMfax: +358-403-524 773

To: Marine Claims Partners  
Attn.: Werner Hummel  
Telefax no:

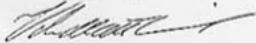
From: Veli-Matti Junnila  
Date: 21 October, 1996  
No of pages (incl 14  
cover sheet):  
Your ref.  
Our ref.

SUBJECT: MS Estonia

I checked the difference in list when all the water is transferred from side to side (from tank 14 to 13). The total difference is about 10 degrees. Practically the list change is smaller because part of the water remains on tank 14 until list is about 90 degrees.

Please find enclosed also my invoice as agreed.

Best regards,

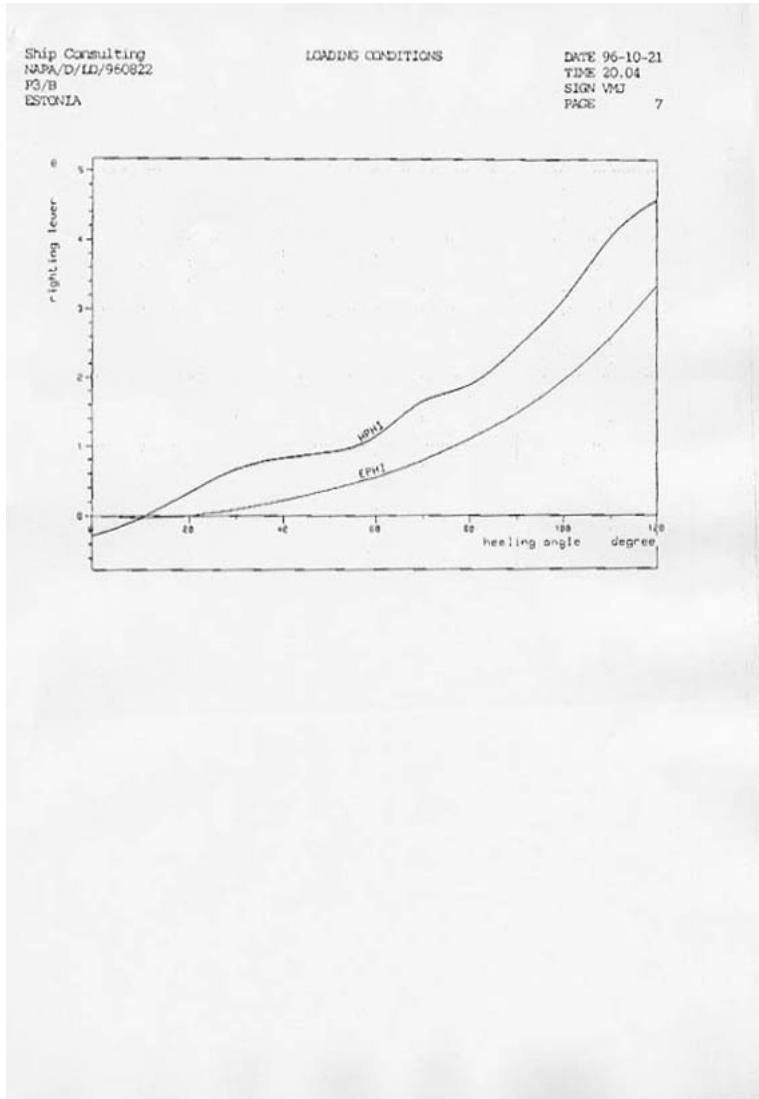


Ship Consulting NAPA/D/DW/960822 P3/B ESTONIA	Damage report	DATE 96-10-21 TIME 20.01 SIGN VAD PAGE 2			
INTACT CONDITION Load case Y.02					
Mean draught: 5.36 m	Trim by stern:-0.48 m	Intact GZ: 1.22 m			
FLOODED CONDITION Damage case X1					
<u>Damaged compartments</u>	<u>Permeability</u>	<u>Extent of damage:</u>			
X1	0.05	Frame: 80.6 - 80.6 Penetration: inboard 4.72 m Flooded volume: -24.6 m <sup>3</sup>			
<u>Floating position</u>					
T aft 5.24 m	T midship 5.16 m	T forward 5.07 m	Trim -0.17 m	Heel -11 deg	GM 2.04 m
Maximum righting arm (max. GZ): Heel angle at maximum righting arm: Range of the GZ curve:			0.61 m -38.5 degrees 47.2 degrees		
<u>Critical openings</u>					
	Frame	Distance to the waterline	Reduction per degree of heel		
MOST FORM. DOOR SB	116	3.14 m	-0.02 m		
MOST AFT. DOOR PS	28	2.52 m	0.03 m		
MOST FORM. DOOR PS	116	2.63 m	0.03 m		
MOST AFT. DOOR SB	28	3.03 m	-0.02 m		
RAMP CORNER SB	156	2.96 m	-0.02 m		
RAMP CORNER P	156	1.93 m	0.07 m		
DOOR FR4 DECK5 PS	4	8.87 m	0.22 m		
DOOR FR4 DECK5 SB	4	12.49 m	-0.11 m		
DOOR FR139 DECK5 SB	139	12.39 m	-0.09 m		
WINDOW FR4 DECK4 SB	6	10.58 m	-0.16 m		
WINDOW FR4 DECK4 PS	6	6.07 m	0.25 m		
WINDOW FR6 DECK5 SB	6	13.43 m	-0.15 m		
WINDOW FR6 DECK5 PS	6	8.92 m	0.26 m		
FIN STABIL. PS	80.5	-5.72 m	0.19 m		
DOOR FR139 DECK5 PS	139	9.27 m	0.20 m		
FIN STABIL. SB	80.5	-1.64 m	-0.18 m		

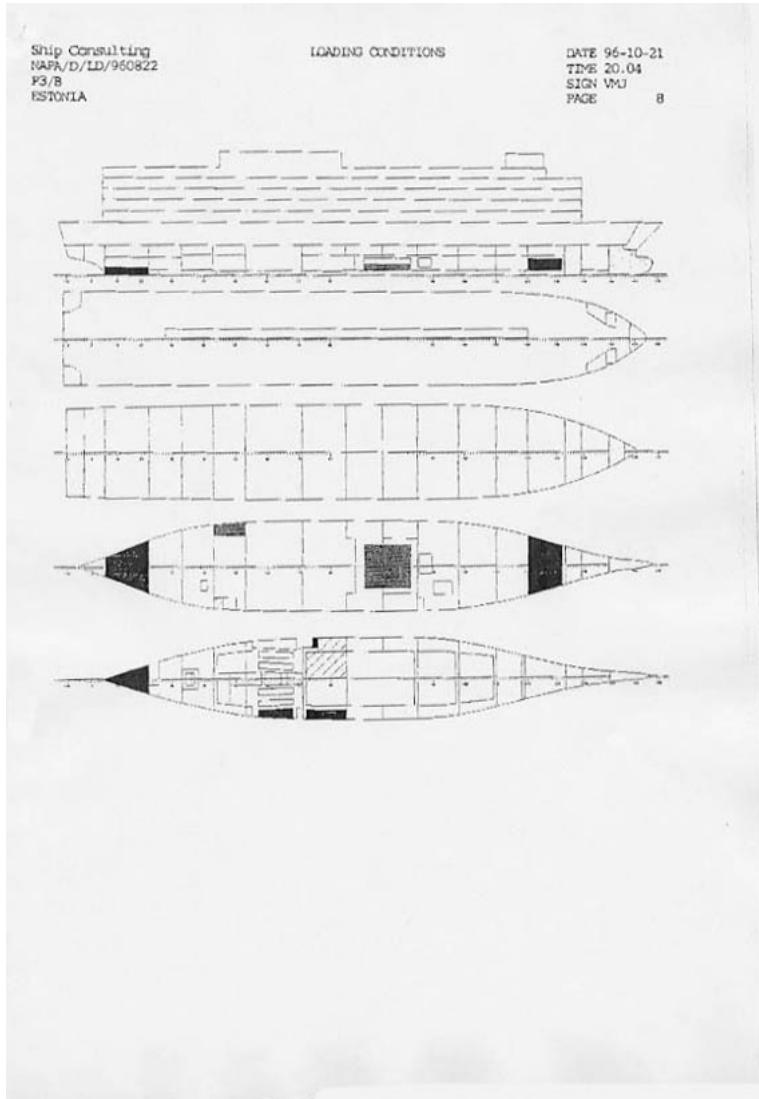
SEVERITY  
Yellow

Displacement (rho=1.01) 11961.4 63.80 -0.28 10.65 796.0

Ship Consulting NAPA/O/LD/960822 P/B ESTONIA	LOADING CONDITIONS	DATE 96-10-21 TIME 20.04 SIGN VMJ PAGE 6			
<b>FLOATING POSITION</b>					
Draught moulded	5.355 m	KM 11.87 m			
Trim	-0.475 m	KC 10.65 m			
TA	5.593 m	GND 1.22 m			
TF	5.118 m	GNDRR -0.07 m			
Trimming moment	-12664 tonm	GM 1.15 m			
HEEL degree	MS m	HPhi m	EPhi rad*m	PSMM tm	DGZ m
0.0	-0.279	-0.28	0.000	0.0	0.000
10.0	-0.230	-0.03	-0.028	125.2	0.010
20.0	-0.072	0.33	-0.002	212.5	0.018
30.0	0.076	0.66	0.085	307.4	0.026
40.0	0.072	0.82	0.217	375.8	0.031
50.0	0.007	0.91	0.369	406.1	0.034
60.0	0.109	1.13	0.542	406.5	0.034
70.0	0.531	1.64	0.784	389.1	0.033
80.0	0.712	1.88	1.093	354.1	0.030
90.0	1.237	2.43	1.465	306.0	0.026
100.0	1.943	3.12	1.947	249.0	0.021
110.0	2.901	4.03	2.572	187.1	0.016
120.0	3.526	4.57	3.328	123.3	0.010



Ship Consulting NAPA/D/LD/960822 P/B ESTONIA	LOADING CONDITIONS	DATE 96-10-21 TIME 20.04 SIGN WJ PAGE 5
LOADING CONDITION Y.02, DEP. FROM TALLIN, unsymmetric load and heeling ta		
LOADING COMPONENTS		
<hr/>		
Name Max. weight Mass Center of gravity Free s. cgx cgy cgs moment		
<hr/>		
HEAVY FUEL OIL, RHO= 0.900		
T10 DEEP TANK 10	171.1	97.2 74.20 2.75 2.03 146.7
T11 DEEP TANK 11	171.1	97.2 74.20 -2.75 2.03 146.7
T36 DAY TANK 36	23.1	22.5 36.23 9.28 2.76 9.1
T38 SETTLING TAN.	28.9	18.0 32.35 8.96 2.36 7.3
Total of HEAVY FUEL OIL	394.3	234.9 67.36 1.58 2.13 309.9
DIESEL OIL, RHO= 0.860		
T18 DB TANK 18	61.1	27.5 58.20 3.50 0.22 250.5
T20 DB TANK 20	17.8	8.6 59.81 8.31 0.30 15.0
T41 DAY TANK 41	12.8	8.6 31.04 -8.91 2.48 3.3
Total of DIESEL OIL	91.7	44.7 53.28 2.04 0.67 268.9
FRESH WATER, RHO= 1.000		
T4A FW TANK 4 A	72.2	69.0 114.24 4.23 2.83 54.5
T4B FW TANK 4 B	72.2	69.0 114.24 -4.23 2.83 54.5
T5 FW TANK 5	146.5	145.0 113.61 0.00 2.68 0.0
T56 FW TANK 56	148.3	45.0 9.93 1.35 1.18 40.9
T57 FW TANK 57	148.3	45.0 9.93 -1.35 1.18 40.9
T17 CIRCUL TANK .	19.7	18.0 58.24 -9.00 0.55 13.6
T22 COOLING WATE.	2.9	2.0 55.40 8.90 0.43 1.6
T29 COOLING WATE.	16.6	15.0 45.85 -8.68 0.61 11.4
Total of FRESH WATER	626.6	408.0 85.74 -0.67 2.22 217.3
BALLAST WATER, RHO= 1.025		
T1 FORE PEAK TA.	178.9	175.8 134.08 0.00 4.02 0.0
T13 HEELING TANK.	185.1	185.0 77.54 -8.87 2.63 0.0
Total of BALLAST WATER	364.0	360.8 105.09 -4.55 3.31 0.0
PAS		
(PAS) PASSENGERS 6.	0.0	110.0 71.50 0.00 16.40 0.0
TRA		
(TRA) TRAILERS 34 .	0.0	970.0 70.00 -2.00 9.50 0.0
CREW		
(CREW) CREW	0.0	20.0 60.00 0.00 22.00 0.0
PRO		
(PRO) PROVISION & .	0.0	80.0 46.00 0.00 10.00 0.0
Deadweight	2228.4	77.07 -1.52 6.68 796.0
Lightweight	9733.0	60.76 0.00 11.56



## Statement andres vihmar

## Enclosure 14.195

ÖVERSÄTTNING  
1996-07-25

Översättning från estniska till svenska  
Utgångstexten är en oavlämnad fotokopia

To Mr Bengt Schager from Pirit  
Mänsik

VITTNESFÖRHÖRSPROTOKOLL

Tallinn 1996-05-15 (?)  
Förste utedraren V Karmi vid Transportutredningsbyrån har enligt 52, 132 och 134 §§, strafflagen som vitne förbör.  
Förnamn och efternamn      Andres Vihamar  
Födelsedatum      1965  
Adress och telefon      Redise 8-2, Tallinn, tel 6796544  
Vittnet har upplysts om följderna enligt 173 och 175 §§ strafflagen om uppsägtlig felaktigt vittnesmål samt om att vägra avge vittnesmål.

(oläslig namnteckning)

- 1 Vilken befattningshade Du på passagerarfartyget? hotelipusser
  - 2 Vad var Ditt hyttnummer på fartyget? 713
  - 3 Vilka var Dina hyttkamrater? hade inga
  - 4 Var befann Du Dig efter midnatt? i min hytt
  - 5 Tittade Du på klockan efter midnatt? nej
  - 6 Vad var orsaken till att Du tittade på klockan?
  - 7 Vad var klockan?
  - 8 Var befann Du Dig när Du tittade på klockan?
  - 9 Hörde Du något besynnerligt efter midnatt? jag hörde inget besynnerligt
  - 10 Vad kunde klockan vara vid det tillfället?
  - 11 Var befann Du Dig vid det tillfället?
  - 12 När beslöt Du Dig för att lämna fartyget och vad var orsaken till detta beslut?
  - 13 Fartyget intog slagsida
  - 14 Vad blev det av Din arbetskamrat (Dina arbetskamrater) eller hyttikamrat(kamrater)?
  - 15 Vilka av Dina bekanta träffade Du medan Du lämnade fartyget?
  - 16 Vilken väg använde Du när du lämnade fartyget? genom hyttfonstret till däck
  - 17 Hur lång tid tog det att nå däck? 2-3 minuter
  - 18 Vad var fartygets slagsida när Du nådde däck? det var samma slagsida 30°
  - 19 Vilka av bestyrkningen träffade Du på däck? Aulis Lee, Heili Beletskaia, Aarne Koppel
  - 20 Kan Du beskriva bestyrkningens verksamhet på fartygets däck? vi lösgjorde fortar tillsammans med Lee, Koppel
  - 21 Hur Du i någon form uttryck tankar med någon person på fartygets däck? Heili frågade om fartyget skulle gå till botten, med Lee, Koppel diskuterade vi att sjösätta flottar
- 
- 22 Har Du hört några meddelanden i högtalaren? Alarm, alarm och Mr Skyflight
  - 23 Kände Du igen någon på rösten? Tiina Ruhulaid meddelade Alarm, hon var i 2-3 valtskiften
  - 24 Var befann Du Dig då? på däck 7
  - 25 Vad var fartygets slagsida vid det tillfället? slagsidan ökade, var över 30°
  - 26 Var befann Du Dig när fartygets belysning slökknade för första gången? jag var på däck när nödbelysningen kopplades in
  - 27 Vad var fartygets slagsida vid det tillfället? över 30°
  - 28 Var befann Du Dig, när fartygets belysning slökknade för andra gången? jag befann mig vid livflottarna mellan däck 7 och 8
  - 29 Vad var fartygets slagsida vid det tillfället? 40° - 50°, kan inte säga exakt

31 Vilket var fartygets tillstånd när Du hamnade i vattnet? fartyget låg på sidan, 90°  
 32 Vad kunde klockan vara vid det tillfället?  
 33 Vilka var tillammans med Dig på räddningsflotten? Arne Koppel, Aulis Lee, Aina Lee, Larissa Skorohodova, Tanel Moosar, Vassili Märtson  
 34 Hur många var tillammans med Dig på räddningsflotten? 10 - 11  
 35 Hur många av dem räddades? alla  
 36 Vart fördes Du från räddningsflotten? ombord på Mariella  
 37 Vilka bekanta träffade du efter räddningen? Ervin Roden, Tiina Mölder, Timo Võõsa, Hele Mõura, Urban Lambertson, Tanel Moosar, Aulis Lee, Skorohodova, en estisk gräbba och 2 svenska passagerare, Aarne Koppel  
 38 När och var efter räddningen tittade Du första gången på klockan? när jag kom, ombord på fartyget 07 30  
 39 Intraffade det några missöden när Du och Dina kamrater räddades? intraffade inte  
 40 Har Du några iakttagelser om det som hände på fartyget, som Du kan göra uttalanden om och som enligt Din uppfattning kan ge klarhet om händelsen?  
 41 Har Du några iakttagelser om räddningsarbetena? på Mariella var allting bra  
 42 Har Du drabbats av skador? Vad förorsakade dem? sträckning i axeln, jag blev hängande innan jag drog ombord  
 45 Övriga iakttagelser?

(oläslig namnteckning)

Jag arbetade på passagerarfartyget Estonia som hotellpurser. Jag var direkt underställd kapitänern, när det gäller arbetet fartygets intendent - Jan Bergendahl. Det var en grupp svenska på fartyget, som fanns ombord som rädgivare, samtidigt som de emellertid faktiskt ledde och kontrollerade den estiska besättningens arbete.

Denna resa fans det ombord ut medlemmar av den svenska lotskommissionen och rädgivaren

Juri Aavik.

Juri Aavik bytt 716

Aavo Pilni bytt 6230

lotskommissionens ordförande 802

ledamot av lotskommissionen 6231

ledamot av lotskommissionen 6232

Vid Skylight 1, 2 är det hotellpursarna skyldighet att bege sig till bryggan. På grund av fartygets slagsida skulle jag inte ha lyckats bege mig dit. Detta först och främst för att jag inte kunde ta mig från hytten till korridoren, då alla lösa föremål i hytten hade tornat sig framför dörren, men sistaokade hela tiden. När jag hade kruspit ut på deck övertystades jag om att manuskorna flydde från fartyget, medan jag uppbenharligen var i ett shock tillstånd. När jag tänker på det efteråt, förstår jag att jag handlade nödlös, å ena sidan räddade jag mig själv och

3

andra, samtidigt var jag oförmögen att fullgöra mina arbetsuppgifter, och det ger mig inte sinnenro, då jag förstår att jag behövts på bryggan. Det hade dock emot inte varit möjligt för mig att nå dit, jag har på alla sätt försökt att analysera detta. När de övriga räddade sig med att gå i livbåten och en våg svepte dem mot floden i vattnet, då fungerade mitt huvud inte ens i detta avseende, jag var hela tiden nyskallat med något, tills en våg svepte mig i vattnet. Från vattnet blev jag uppdragen på en flotte.

(oläslig namnteckning)

## Statement vasili Krjutjkov

### Enclosure 14.196

8

Altogether about 20 who ....(unclear). I do not know

WHAT CAUSED THE ACCIDENT?

Krutskov, Vasili, 21 12 27, retired

Address Jõhvi, Estonia

94 - 815

00.00 hrs Was in cabin 6230, slept in the cabin, nephew + son-in law with him (ANOTHER VESSEL) SAVED!

Woke up when the vessel for the first time vibrated heavily and began to take a little list, then a second bang, shaking, healed heavily.

When he went out on deck, a wave washed into the water + his friends.

sh/1394/01/kkrutskov.kw

## Statement vasili Krjutjkov

O  
Enclosure 14.197

1 (2)

### M / S E S T O N I A

Protokoll över förhör nr 19 hållt med Krjutjkov,  
VASILI född 1927-12-21.

Protokollets formulär är skrivet på estniska och  
en del av personuppgifterna är också skrivna  
både på estniska och ryska.

Arbetsplats är Joint Venture Evest i staden  
Kohtla-Sarke. Hemtelefonnummer 45371.  
Arbetstelefon 49815.

Resterande personuppgifter står på estniska.

Förhöret hölls den 23 oktober 1994 (det står på  
estniska) och påbörjades klockan 17.50 och  
avslutades klockan 18.20.

(Förhörsledarens namn uppfattar jag inte.  
Någonting i stil med Ugarte. Tolvens  
kommentar).

ryskt?/  
Förhöret är tolkat från estniskt, handskrivet  
koncept av tolken Ljuba Sandberg.

Anmälan nr: 0201 K 84 051-94

### BERÄTTELSE

"Den 28 september befann jag mig på båten Estonia i hytten 6320 enligt min  
biljett. Det är på 6:e våningen. Det var en lyxhytt i fören.

Under själva olyckan hörde jag inga nödsignaler. Under den tiden då jag hann ta  
mig upp på 7:e våningen hade båten redan mycket kraftig slagsida. Någon  
delade ut livbälten, men vem det var så lade jag inte märke till. Vi satte på oss  
livbälten och sedan spolades vi av vägen ut i sjön.

2 (2)

*forts, förhör med Vasili Krjutjkov. M/S Estonia. Anmälan: K 84 051-94.*

Redan när vi var på väg mot den 7:e våningen så blev det lite problem med belysningen, men innan vägen spolade mig ned i sjön så släcknade ljuset. Tillsammans med mig räddades Voronin, Alexander och Voronin, Vasili.

På båten åkte jag utan bil. Det var en tjänsteresa till Taniso (uppfattar inte namnet. Tolkens kommentar).

"Protokollet stämmer med min berättelse"

ÖVERSATT AV TOLKEN LJUBA SANDBERG.

*Utskrift den 29 nov -94,  
Marie-L. Wolfram*

## Report on the job training by Ake sjoblom

## Enclosure 15.198

Project 83043-4

Malmö 94-10-24

UtkastReport "On the Job Training" PSC in Estonia

Participating from NMA:  
 Gunnar Zahlée and Åke Sjöblom

Participating from Estonia National Maritime Board, ENMB  
 See Annex II.

26.09.94

Arrived in Tallinn 13.00 and was met by Mr Valgma ENMB, who took us to the headoffice. There we spent the afternoon, together with Deputy Director General (Maritime Safety Department, Head) V.Muru discussing and settling the content of the course and the time schedule as given in Annex I.

27.09.94

09.00-12.00 Introduction to PSC and theoretical lessons were given. The afternoon object for "On the Job Training" was chosen by the trainees. The inspection was roughly planned.

12.00-18.00 M/S Estonia, an Estonian passenger ship, was inspected as a port state control case and we all started in wheel house by introducing ourselves to the commanding officer on board (Chief Mate) and explaining the purpose with our visit. The Chief Mate had no objections and we started with certificate and document control. Then we split in two groups. One, accompanied by Chief Engineer, started in the engine room and worked upwards. The other, accompanied by the Chief Mate, started in wheel house and worked downwards. Around 16.30 we were all gathered in the officers mess for summoning our "findings". These "findings" were then discussed and agreed upon with Chief Mate and Chief Engineer. We then left the ship around 17.30 and closed the day.

28.09.94

09.00-12.00 Yesterday's "findings" was discussed with the early morning disaster for M/S Estonia as background. The total loss of M/S Estonia was, off course, a chock to all of us and we found it difficult to avoid the

g:\wpdok\divers\pjjob\

subject and concentrate on our mission. To avoid speculations we therefore spent some hours explaining the Ro-Ro concept. We discussed the danger of great influx of water on cardeck with total loss of stability, due to free water surfaces, as result and hull openings that could cause the flooding. The attention was drawn to "Herald of free Enterprise" and the new regulations adopted to avoid similar disasters. The rapid sinking of M/S Estonia was then discussed in connection with our "findings" related to LL-matters.

During lunch we then planned the afternoon activities.

13.00-17.00 A "port state control" was carried out on board an Estonian cargo ship, M/S Viirelaid. The object chosen by the trainees, and was a Ro-Ro ship loaded with containers containing dangerous goods. Following the standard PSC procedure we made certificate and document control, made spot checks on SOLAS-, LL-, and Marpol-issues and noted the cargo in relation to the IMDG code and existing letter of compliance. Our "findings" was summoned, discussed and agreed upon with the master. The day was closed.

29.09.94

08.00-12.00 Yesterday's "findings" (deficiencies) and "actions taken" according to the MOU code was discussed. Then detention of ships was discussed in relation to different "deficiencies" and an example concerning Em-generators was put forward to the trainees for decisions. The age of the ship due to "Grand Father's clause" related to different SOLAS conventions was then to be considered. The training was at this time almost impossible to keep on an efficient level due to media pressure because of the "Estonia disaster" and about noon we gave up our time schedule and programme. Some of the trainees had, at that time, already left due to obligations related to their positions as Harbour Masters. We then spent the afternoon and night with TV companies, radio stations and newspaper correspondents.

30.09.94

We started early morning with some TV interviews and was then taken to the Ministry for a short briefing of our impression of M/S Estonia's condition and status at the time for our visit on board. After some hours ride on the Estonian countryside Mr Valgma took us to Tallinn Airport and we left for Sweden 13.45. Unfortunately no course evaluation was carried out and due to the circumstances we find this understandable and acceptable.

## Annex I

## Project 83043-4

1

## Estonia; Planned schedule

27.09.94

- 09.00-12.00    Introduction PSC including theoretical lessons concerning  
                   - Documentation to be carried on board  
                   - Certificates related to different conventions  
                     SOLAS, LL,Marpol, STCW, ILO conv. and rel. IMO  
                   resolutions) to be carried on board.  
                   - Missing or expired certificates  
                   - Nature of deficiencies (ref to MOU code)  
                   - Substandardships  
                   - "Grand Father's Clause"  
                   - Ships with gross tonnage below limits for  
                   international conventions  
                   - Detention of ships, bodies to be informed  
                   - Ships from countries that have not ratified  
                   conventions  
                   - Surveyors "professional judgement"  
                   - Code of Etics for surveyors - how to create a  
                   constructive and co-operativ atmosphere on board.

12.00-13.00    - Lunch

13.00-17.00    - On board practise. Suitable object to be chosen by  
                   ENMB

28.09.94

- 09.00-12.00    - Summoning up of yesterday afternoon's practical  
                   work.  
                   - General impression  
                   - Reports, master receipt, categoryzing of "Findings"  
                   - Codes for "findings" (ref MOU code)  
                   - Descision of actions to be taken - codes (ref MOU  
                   code)

12.00-13.00    - Lunch

13.00-17.00    - On board practice. Suitable object to be chosen by  
                   ENMB

29.09.94

09.00-12.00    - Summoning up of yesterdays work (see above)

12.00-13.00    - Lunch

13.00-17.00    - On board practice. Suitable object to be chosen by  
                   ENMB

g:\temp\krimi\www\estoniaferrydisaster.net\estoniaferrydisaster.net.bilag\_151.fixed.html

## Annex I

## Project 83043-4

1

## Estonia; Planned schedule

27.09.94

- 09.00-12.00    Introduction PSC including theoretical lessons concerning  
                   - Documentation to be carried on board  
                   - Certificates related to different conventions  
                     SOLAS, LL,Marpol, STCW, ILO conv. and rel. IMO  
                   resolutions) to be carried on board.  
                   - Missing or expired certificates  
                   - Nature of deficiencies (ref to MOU code)  
                   - Substandardships  
                   - "Grand Father's Clause"  
                   - Ships with gross tonnage below limits for  
                   international conventions  
                   - Detention of ships, bodies to be informed  
                   - Ships from countries that have not ratified  
                   conventions  
                   - Surveyors "professional judgement"  
                   - Code of Etics for surveyors - how to create a  
                   constructive and co-operativ atmosphere on board.

12.00-13.00    - Lunch

13.00-17.00    - On board practise. Suitable object to be chosen by  
                   ENMB

28.09.94

- 09.00-12.00    - Summoning up of yesterday afternoon's practical  
                   work.  
                   - General impression  
                   - Reports, master receipt, categoryzing of "Findings"  
                   - Codes for "findings" (ref MOU code)  
                   - Descision of actions to be taken - codes (ref MOU  
                   code)

12.00-13.00    - Lunch

13.00-17.00    - On board practice. Suitable object to be chosen by  
                   ENMB

29.09.94

09.00-12.00    - Summoning up of yesterdays work (see above)

12.00-13.00    - Lunch

13.00-17.00    - On board practice. Suitable object to be chosen by  
                   ENMB

g:\temp\krimi\diverse\projekt

Annex II

Project 83043-4

Participants from Estonia National Maritime Board

Uku Tiik	Harbour Master, Pärnu
Enn Tiits	Surveyor, Pärnu
Arvi Buddel	Deputy Harbour Master, Tallinn
Hugo Ink	Harbour Master, Saaremaa
Andres Piirikivi	Harbour Master, Haapsalu
Peep Hint	Deputy Harbour Master, Maapsalu
Harri Allik	Deputy Harbour Master, Maapsalu
Jaak Arro	Principal Specialist on Dangerous Goods, ENMB
Arne Valgma	Head Ship Inspection Div, ENMB

g:\wpdok\divers\qsjobs.r

30.09.94

09.00-10.00 - Summoning up of yesterdays work (se above)  
- course evaluation

10.00-12.00 - Trip on the Estonian countryside

12.00-13.00 - Lunch

13.45 - Departure from Tallinn airport

g:\wp\dk\diverse\wp\joh.n

## Report of inspection in accordance with memorandum



S-60178 Norrköping, Sweden.  
Tel +46 11 19 10 00.  
Telefax +46 11 23 59 34.  
Telex 43880 Shipadm S.

## Enclosure 15.200

REPORT OF INSPECTION IN ACCORDANCE WITH  
THE MEMORANDUM OF UNDERSTANDING ON PORT STATE CONTROL

1 name of issuing authority	Maritime Safety Inspectorate, Sweden		
2 name of ship	ESTONIA	184	
3 flag of ship	ESTONIAN	71	
4 type of ship	PASSENGER VESSEL		
5 call sign	ESTE	6 IMO number	
7 gross tonnage	21.774	8 year of build	1980
9 date of inspection	27 September 1994	10 place of inspection	TALLINN
a.title	b. issuing authority	c.date of issue	d.date of expiry
1 PASS. SAF. CERT	B.V		
2 LOIPO	B.V		
3 LSPP (letter of compl.)	B.V		
4 L.L.	B.V		
5 TONNAGE	B.V		
6 NAT. CERT	EVA (ESTONIAN MARITIME BOARD)		
7 PASS. CERT	EVA		
8 STATE SURVEYING	EVA		
9			
10			

d. the information below concerning the last intermediate survey shall be provided if the next survey is due or overdue

date	surveying authority	place
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

12 deficiencies       no       yes (see attached FORM B)       SOLAS       MARPOL  
 13 ship detained       no       yes  
 14 supporting documentation       no       yes (see annex)

district office \_\_\_\_\_ name \_\_\_\_\_  
telephone \_\_\_\_\_ duly authorized surveyor \_\_\_\_\_

telefax \_\_\_\_\_ signature \_\_\_\_\_  
telex \_\_\_\_\_

Maritime Authorities of Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, Portugal, Spain, Sweden and the United Kingdom of Britain and Northern Ireland have concluded a Memorandum of Understanding concerning the procedures on Port State Control. This Port State Control is based upon the International conventions on safety, the protection of the environment and living and working conditions on board ships as adopted by the International Maritime Organization and the International Labour Organization. If this inspection report does not contain any remarks under the heading 'nature of deficiency' the above Maritime Authorities will seek to avoid inspecting the ship again during the same calendar year unless there are clear grounds for another inspection. For passenger ships, roll-on/roll-off ships, bulk carriers which may present a special hazard (e.g. oil tankers, gas carriers, chemical tankers) and ships carrying harmful substances in packaged form or chips which have had several re-entries the Authorities will seek satisfaction whenever they will deem this appropriate.

This inspection report has been issued solely for the purpose of informing the master and other port States that an inspection by the port State, mentioned in the heading, has place. This inspection report can not be construed as a seaworthiness certificate in excess of the certificates the ship is required to carry.



S-561078 Norrköping, Sweden.  
Tel +46 11 19 10 00.  
Telefax +46 11 23 99 34.  
Telex 64380 Shipadm S.

**REPORT OF INSPECTION IN ACCORDANCE WITH  
THE MEMORANDUM OF UNDERSTANDING ON PORT STATE CONTROL**

FORM B

1 name of issuing authority **Maritime Safety Inspectorate, Sweden**  
2 name of ship **ESTONIA** 5 call sign **ESTE**  
9 date of inspection **27.09.1994** 10 place of inspection **TALLINN,**

102 JUNE 2004

Continuing page  no  yes

name Head of National Ship. Inspect  
duly authorized surveyor A. DUNNION

signature Alfonse Valguere

**To complete in the event of a detention**

**2** Codes for actions taken include i.e.: ship detained/released, flag State informed, classification society informed, next port informed (for codes see reverse side of copy).