R E P O R T

of the Committee of Experts formed for the investigation of circumstances related to the transport of equipment for military use on the passenger ferry "Estonia" in September 1994

Background

By its Order No. 129 of 07.03.2005, the Government of the Republic formed a Committee of Experts for the investigation of circumstances related to the transport of equipment for military use on the passenger ferry "Estonia" in September 1994 (hereinafter the Committee). Six questions in connection with possible transport of military equipment on three dates in September 1994 were presented to the Committee. The Committee presented the Report on its work on 01.09.2005.

On 06.10.2005 the Government of the Republic extended the term of authorities of the Committee and asked to investigate additionally whether there were any substantial circumstances related to the causes of the wrecking of the passenger ferry "Estonia" that had not been investigated thoroughly enough. Concerning issues related to the transport of military equipment, as the Committee has not found any evidence that would refute the conclusions made by the Committee in its first report, this Report is focused on the latter issues.

Investigation process

Considering the broad nature of the issue, the Committee decided to define its work by means of the following sub-questions:

1) Which investigations exclude the possibility that the bow visor attachments broke as a consequence of an explosion? Are these investigations appropriate and adequate?
2) Was the bottom part of the hull (i.e. the part of the hull at and below the waterline) examined and filmed during diver's investigation in the full possible extent to identify all major damages?
3) Are there any such essential contradictions between the statements of people who survived the wreck that cannot be eliminated?
4) Are there any essential testimonies, expert opinions or generally known circumstances that have been given no attention in the final report of the Joint Commission?
5) Are there any facts enabling a reasoned opinion that some essential evidence or investigation activities have been hidden from the members of the Joint

Commission and/or the general public or that otherwise cause suspicions about the objectivity of the investigation?

6) Is there currently any additional information available in Estonia, Sweden or Finland concerning the wreckage or its investigation which is protected by state secret on any level?

The presented choice of questions for investigation was not theoretical, but was based on earlier observations of the Committee members. Initially the Committee also planned to investigate, what had been done in order to determine the technical condition of the bow visor before the last journey, but later on this issue was excluded due to shortage of time.

During the investigation, the Committee additionally reviewed the Final Report of the Joint Accident Investigation Commission formed by a resolution of Prime Ministers of Estonia, Sweden and Finland (hereinafter the Joint Commission) and the materials that served as its basis, as well as the materials of the criminal case. In addition to the 23 people specified in the previous report, the Committee interviewed additionally 50 people, including officials related to the investigation, survivors and journalists.

Results

The following are the results of the investigation presented in terms of the above sub-questions.

1) Which investigations exclude the possibility that the bow visor attachments broke as a consequence of an explosion? Are these investigations appropriate and adequate?

1. An explosion leaves various traces. First, large amount of energy released by explosion causes specific damages to the components in contact with the explosive that can be identified by visual examination. Second, traces of explosive can be found on components at the place of the explosion, because the burning reaction is never complete. In case of explosions in the sea, the finding of residue of the explosive substance is more complicated by the fact that sea water may wash the residue away or even dissolve the residue if the explosive used is an explosive soluble in water. Third, the occurrence of an explosion can be determined by examining the surface of components in the centre of the explosion, because the momentary extremely high temperature involved in the explosion may cause changes in the surface structure of materials.

2. In conformity with section 8.12 of the Final Report of the Joint Commission, the Finnish Police took certain paint samples from the interior of the visor. Thin layer

cromatography (TLC), liquid cromatography (LC) and drop analysis of these samples did not indicate any traces of an explosive. The final report and its annexes do not show that the hypothesis of an explosion had been studied in any other manner, e.g. by examining the surface structures of components cut from the visor and hull. Kari Lehtola, Finnish head of the Joint Commission, confirmed to the Chairman of the Committee that no other analyses were made for determining a possible explosion. According to K. Lehtola, there was no need for that because the visor damages did not indicate the occurrence of an explosion.

3. The Committee is on the position that the Joint Commission did not use all the possibilities for determining the occurrence of an explosion in the area of the visor attachments. At the same time, the Committee cannot give an opinion on the Joint Commission's decision not to make any further investigations, because the experts of the Committee have not studied the damages of the visor.

2) Was the bottom part of the hull (i.e. the part of the hull at and below the waterline) examined and filmed during diver's investigation in the full possible extent to identify all major damages?

4. During the investigation of the wreckage, there was one diving operation with divers, from 2 to 5 December 1994. It was ordered by the Swedish Maritime Board and its aim was to determine whether it was possible to bring up the bodies. In addition to that, the divers had to make a few surveys that the Joint Commission had ordered through the Swedish Accidents Investigation Board. The diving was carried out by the Norwegian company Rockwater and Dutch company Smit Tak and the operation was led by Johan Franson, Deputy Director of the Swedish Maritime Board. The only representative of the Joint Commission in the operation was Börje Stenström, Chief Investigator of the Swedish Accidents Investigation Board. Estonia was represented by Aare Valgma, Head of the Ship Audit Service of the Estonian Maritime Administration, but he was not a member of the Joint Commission and he was not an official expert or observer either.

5. The observation of the exterior side of the hull, which was performed by means of a remote operated vehicle (ROV), is recorded on videotapes RW/SEMI1/EST/R/001 and RW/SPRINT794/ESTONIA/001. The film stops many times on these tapes and continues at a new place, which can be concluded from the time and depth indicators on the tape. These stops are marked with the word "pause" in the video tape log. By visual observation, it cannot be said whether recording was simply stopped or whether the recording had been edited. In any case, the video tapes delivered to the Joint Commission do not include such a tape that would show that the bottom part of the hull had been examined and filmed in the full possible extent. Johan Franson, who led

the operation, could not comment on the hull surveys, because he did not monitor the performance of the tasks of the Joint Commission.

6. Before the above diving operation, the wreck of the ship was filmed with ROV's on two occasions by the Finnish Boarder Guard and the Coast Watch. The first filming, made on 2.10.1994, is recorded on video tapes Simo, Jutta 1 and 2. The second filming, made on 9.-10.10.1994, is recorded on video tapes Täydennuskuvaus 1 and 2. None of the above tapes indicate that the bottom part of the hull had been filmed in the full possible extent. In addition to that, all the above tapes have interferences, due to which it is not possible to make out everything that was filmed. According to Tuomo Karppinen, a member of the Joint Commission, systematic examination of the hull was not the aim of the initial ROV surveys. The members of the Commission presumed that this would be done in the framework of diving investigations, which the Swedish Government had already decided to order by that time.

7. Based on the above, the Committee concludes that the bottom part of the hull has never been examined or filmed in the full possible extent.

3) Are there any such essential contradictions between the statements of people who survived the wreck that cannot be eliminated?

8. The Committee did not establish that any survivor of the wreck had given statements that are important from the point of view of sequence of events of the accident, but that cannot be accorded with the statements of other survivors of the wreck.

4) Are there any essential testimonies, expert opinions or generally known circumstances that have been given no attention in the report of the Joint Commission?

The Committee identified the following essential circumstances that have not been adequately explained in the final report.

Opening of the ramp

9. According to the Report of the Joint Commission, the cause that brought about the wreckage was that the bow visor attachments broke, the visor fell into water and the ramp opened completely. This happened at about 01:15. A large amount of water entered the car-deck from the open bow and caused a quickly increasing list.

10. Such sequence of events contradicts the statements of two witnesses indicating that the ramp was in the closed position when the list of the ship was already about 30

degrees. These witnesses have said that when they were in the engine control room, they saw from the camera viewing the ramp that the ramp was in place, but water forced in at its sides. Before the witnesses left the engine room, which was at about 01:25, they had not seen the ramp in an open position. But when they left the room, the list of the ship was already about 30 degrees. Thus, based on the witnesses' statements, the list had increased to 30 degrees so that the ramp had not fully opened.

11. The sequence of events described in clause 9 may also contradict the statements by two other witnesses indicating that the ramp could have been in the closed position even when the ship had fully fallen on its side (the list 90 degrees and more). These witnesses have described their surviving as follows. While on a side of the heeling ship, they were looking for a place where it would be safer to jump into water. Finally they moved to the front part of the ship, where they saw that the head of the ship was damaged and some kind of a grid had formed there. They climbed lower and jumped into the sea. The grid at the head of the ship could have been the bottom side of the ramp, which is visible when the ramp is in the closed position. Namely, a ramp is built on longitudinal and transverse beams.

12. Considering that the ramp is in the closed position also in the bottom of the sea, its upper end being open by less than one meter, it cannot be excluded that the ramp never opened completely. Therefore, the opening through which water flew into the ship was many times smaller than the one that the Joint Commission proceeded from. When believing the above witnesses, there are two alternatives - either the water came to the car deck also from other places besides the sides of the ramp or the calculations of the Joint Commission regarding the flow of water into the ship or the stability of the ship were wrong.

Heavy blows

13. More than a half of all the survivors and 2/3 of those who were awake felt some time after one o'clock at least one heavy thrust, blow, shake or crash. Most of the witnesses felt two successive blows, some of them felt three blows. The last thrust was the heaviest. The blows were perceived in various parts of the ship, also at upper decks and in the stern part. The strength and character of the blows has been described by the survivors differently, but they have clearly differentiated them from earlier wave blows. It is important that it was not only the sound they heard, but also or even just thrusts that were physically perceived.

14. In the opinion of the Joint Commission the heaviest crashes had been caused by the separation of the visor and its collision with the bulbous bow. In conformity with section 13.2.5 of the Final Report many witnesses heard a repeated metallic noise from the bow area during a period of about ten minutes, starting shortly after one

o'clock. Some of the metallic blows were associated with hull vibrations. The sounds from the bow area ended in a few loud, metallic crashes, caused by the final separation of the visor and its colliding with the bulbous bow of the vessel. This occurred at about 01:15.

15. Such conclusion by the Joint Commission is one-sided and comparatively free interpretation of the witnesses' statements. It certainly is not right to talk about only hearing metallic noises. As it has been said, most of the witnesses rather felt than heard the blows. It cannot be said either that at first metallic noises were heard and then a few heavy crashes. Many witnesses have heard scratching noises and blows at the same time; at least five people of them have associated it with running aground or colliding with something. There are also witnesses who remember that strange noises were heard also after the heavy thrusts. Many witnesses have indeed mentioned the bow as the location of the blows, but many witnesses have also mentioned a side of the ship and the bottom. Many witnesses have determined the car deck as the location of the noises and blows, associating it with something rolling and colliding with the wall of the car deck.

16. The conclusion of the Joint Commission provided in clause 14 is either not in accordance with the statements of two witnesses or with the conclusion of the Final Report that the visor, when falling, had forced the ramp open. One of the witnesses has told of having heard two heavy blows that were heavier than wave blows some time after one o'clock. The witness was at that moment in the engine control room on deck 1 sitting on a chair. A few minutes after the thrusts the witness felt that the ship began to develop the list. The witness stood up, went to the control board and looked at the monitor, where the witness saw that water forced in at the sides of the ramp. Another witness was in the sewage room, which is on deck 0, at about one o'clock. The witness felt suddenly a heavy blow, which was followed by a second one in less than a minute and then right after that by a third similar one. The blows were heavier than those caused by a wave. After the third blow the witness noticed that the ship was in the list. After that the witness went to the engine control room, where the witness arrived in about two minutes. In the control room the witness looked at the monitor and saw in the camera viewing the bow that water was coming in at the sides of the ramp. Thus, in case of believing these witnesses, one of the two conclusions of the Final Report is false – either the conclusion that the visor, when falling, had forced the ramp open or that the blows perceived by witnesses had been caused by the separation of the visor and its collision with the bulbous bow.

Position of the Committee

17. It is the position of the Committee that the contradictions described in clauses 9 to 16 are obvious and important from the point of view of sequence of events of the

accident. At the same time, the Committee has no grounds to believe that the Joint Commission disregarded the statements of the witnesses malignantly. Yet, in the opinion of the Committee, the Joint Commission should have grounded the disregarding of so important statements either in the report or in its annex. Also, more attention should have been paid already at the time of the investigation to the fact that 2/3 of the people who were awake felt thrusts or heard crashes that were different from earlier storm waves.

Water inflow to lower decks

18. Many people who have survived from deck 1 have said that they saw water on deck 1 either in their cabin or in the corridor between cabins. When comparing the statements of witnesses it can be considered that it occurred approximately between 01:10 and 01:15, i.e. right at the beginning of the accident. This is also supported by the reasoning that if the passengers on deck 1 had started fleeing later, they could not have made it from deck 1 to deck 7, where it was possible to get out, due to the increasing list.

19. The Final Report of the Joint Commission does not handle much the issue of water entering deck 1, stating only that water could flow to deck 1 through passages in the central section (see section 13.2.6). This is possible in principle, but not very probable in case of a small list. Namely, the Estonia was a ship with a central section, which means that the stairs, elevators, ventilation pipes, chimneys and other passages to the rooms below the car deck were located on the central axis of the ship. Therefore, inflow of water to the cabins section on deck 1 was possible only after the water level had reached the fireproof doors on the central axis of the car deck. But this could not have occurred before the list of the ship had become over 40 degrees.1 Considering that the water on the car deck was splashing due to the waves, it is probable that water was leaking through the door cracks also earlier, but then only episodically and in small amount. It is questionable, whether at the time before the separation of the visor and opening of the ramp, i.e. when there was no list to cause sufficient water on the car deck, so much water could force through the car deck doors that it could be seen flowing in the corridor of deck 1 and forcing into cabins.

20. The Final Report handles in a similar brief manner how the water reached other parts on decks 1 and 0. In section 13.6 of the Final Report, it is only stated that the watertight compartments below the car deck were flooded from above, as there were connections between different decks via staircases and other openings. As the ship is divided into watertight compartments on the lower decks and the free flowing of

1 See calculations in the study ordered by the Swedish Government *Study of the Estonia Sequence of Sinking*, completed on 28.03.2003.

water is thus excluded, the above general statement is extremely uninformative. Different compartments could be filled with water through different channels.

Position of the Committee

21. The Committee does not consider it to be proper that the Joint Commission handled the issue of water filling the lower decks so briefly, because this is one of the most important issues from the point of view of sinking of the ship. If decks 1 and 0 had not been overflooded, i.e. if the water had filled only the car deck and the decks above it, the ship would not have sunk, but turned upside down and remained afloat bottom up.2

22. The Committee has grounds to believe that the brief handling of the issue of water filling the ship is not only the issue of writing the Final Report, but rather no adequate attention was paid to it during the investigation. The water inflow could have been analysed more precisely if the condition of the cargo, the watertight doors and fireproof doors on the car deck as well as whether the ventilation openings3 were closed or open had been investigated during diving investigations. But as it appears from the contract with the diving company, no such tasks were given to the divers.4 Also, the Final Report does not indicate that the strength of windows and doors on deck 4 and 5 had been analysed by calculations or testing. Namely, based on the Final Report, their breaking was the critical moment, after which the filling of the ship with water, its capsizing and sinking could not be avoided (see section 12.6.1).

Comments by members of the Joint Commission

23. The Chairman of the Committee asked the following members of the Joint Commission for an explanation about the above contradictions: Uno Laur, Ann-Louise Eksborg, Kari Lehtola and Tuomo Karppinen. None of them was ready for a longer discussion, claiming that they needed time for recalling the subject, which is also fully understandable.

24. The Committee would also like to note here that some of the above contradictions and problems were pointed out already during the work of the Joint Commission by Andi Meister, first Chairman of the Commission. Andi Meister also considered it

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2 See section 12.6.1 of the Final Report of the Joint Commission or section 3.6.3 of the study ordered by the Swedish Government *Study of the Estonia Sequence of Sinking*, completed on 28.03.2003.
3 For explanation: some engine rooms on the lower decks had ventilation passages that led to openings on the exterior of both sides of the ship at about the level of deck 4. But there was no such ventilation system on the front part of deck 1, where the passenger cabins were located.
4 Based on clause 5.5.3 of the contract, divers had to check only in which position the switches of watertight doors were on the navigating bridge control panel. Examination of the actual situation of the doors was not ordered.

necessary that all the witnesses be additionally interviewed based on a uniform questionnaire, but this proposal was not approved by the majority of the Joint Commission.

5) Are there any facts enabling a reasoned opinion that some essential evidence or investigation activities have been hidden from the members of the Joint Commission and/or the general public or that otherwise cause suspicions about the objectivity of the investigation?

The Committee cannot exclude that there are substantial evidence, which have not been seen by all the members of the Joint Commission and about the existence of which the general public has not been informed.

25. As stated above, there has been officially only one diving operation with divers, i.e. from 2 to 5 December 1994. But the Committee possesses a video tape containing an interview with a person who claims that he took part as a diver in a diving investigation at the shipwreck already a few days after the accident. His task was to examine and film the bow part of the ship, where he discovered a hole characteristic of an explosion on the starboard side. The hole was of oblong shape, estimated to be about four meters high and extending both below and above the waterline. The person did not agree to meet the Chairman of the Committee, claiming that talking about this thing has brought only trouble to the person. Swedish officials have given ambiguous and contradictory comments about the person's statements to the Chairman of the Committee. Still, the Committee was also given information that the person is not reliable and the person's story is not true.

26. This person has also mentioned the names of two people, who also took part in this diving operation. One of them, claimed to be the leader of the divers, was then and is now a marine officer of the Swedish Defence Forces. The Committee contacted a number of Swedish officials with a wish to meet the officer, but this has not been made possible by now. The latest message delivered to the Chairman of the Committee was that the officer had refused to meet.

27. It is stated in section 8.3 of the Final Report that the bow visor of the Estonia was found on 18.10.1994. The Committee has grounds to believe that the visor was actually found and filmed already nine days earlier. Namely, the Committee possesses a copy of a handwritten fax in Swedish sent by Tuomo Karppinen to Börje Stenström on 10.10.1994. The date of sending the fax is visible both on the automated print of the fax machine on the upper edge and on the top right of the letter, where the author has written it manually. The author states in the fax letter that they took to the sea already on Sunday (i.e. 09.10), because they thought that hay found the visor with the sonar. The author also states that they filmed the visor and ramp with ROV. When

meeting the Chairman of the Committee, T. Karppinen acknowledged that the letter was written by him, but he categorically refused to give any comments.

28. It is stated in section 8.7 of the Final Report that the car deck was not surveyed due to the hazards related to divers working in the area. But the log entries of the video tape SPRINT/94/ESTONIA/001 indicate clearly that ROV had been on the car deck. When watching the film, poor quality and pauses do not allow clear understanding of whether the ROV was on the car deck or elsewhere. Yet the objects mentioned in the log (cement bags and a pallet) can be identified. It can also be understood from the conversation between the diver and the person leading the operation on the deck that the ROV tried to get to the car deck. The most strange thing with this episode is that the ROV did not even try to get to the car deck through the opening between the upper part of the ramp and the hull, but it moved lower and to the left along the side of the wreck as instructed by the diver. This is understood both from the diver's talking and indications of depth and location on the film. As stated above, due to poor visibility and pauses it cannot be understood from where precisely the ROV gets to the place considered as the car deck. In any case, this episode leaves a suspicion that the car deck was still filmed and it was accessed from another place than the opening between the ramp and the hull.

29. It is visible on video tape RW/SEMI1/EST/D/018 delivered by the diving company that divers were looking for a person's suitcase in the cabins on deck 6, which they eventually found and took along. This is also fixed in the video tape log. The fact that a specific suitcase was being looked for can be concluded from the diver's preceding activity and from the diver's dialogue with the person who led the diving on the deck and also because the diver read the name on the nametag of the suitcase repeatedly letter by letter. At a meeting with the Chairman of the Committee, Johan Franson, who led the operation, denied any search of a suitcase. He confirmed that no such task was given to the divers.

30. The largest and strongest of the visor locks was the bottom lock, also called the "Atlantic lock". It functioned as a big locking device so that the locking bolt was moved by a hydraulic actuator through the hull and the mating lugs attached to the visor. According to section 8.6.1 of the Final Report, three lugs attached to the hull had failed; the lug on the visor and the locking bolt were not broken. The locking bolt was unwelded and brought up during the diving operation for close investigation. Regrettably Börje Stenström, the only member of the Joint Commission who participated in the diving operation, decided to throw the bolt back to the sea and thus destroy the evidence of such importance. The fact, that it was so, was confirmed to the Chairman of the Committee by Ann-Louise Eksborg, the latest leader of the Joint Commission on the part of Sweden. Even if the locking bolt was not broken, it is regrettable that an experienced investigator just threw away an important evidence.

31. As stated above, the diving operation performed by Rockwater was the only one, where divers were used. The diving was ordered by the Swedish Maritime Board and its aim was to determine whether it was possible to bring up the bodies. At the same time, the Joint Commission had an opportunity to give additional surveying tasks to the divers. This opportunity was also used, but in a very limited extent. As it appears from clause 5.5 of the contract, the Joint Commission asked the divers to survey only the bulbous bow, the ramp, the rudder, EPIRB alarm lights and the position of control levers and switches of watertight doors on the navigating bridge. As stated above, in order to determine the causes of sinking of the ship and the sequence of events, also other areas of the ship should have been surveyed. The Committee cannot understand why it was not done. Neither can the Committee understand the decision of the officials who led the operation that the divers did not need to compile a report about surveys in the bow area and navigating bridge, unlike in case of other areas of the ship (see Rockwater Survey Report, section 2.8). When meeting the Chairman of the Committee, Johan Franson could no give any comment on this decision, claiming that he had never considered it to be a problem. This only diving operation is further obscured by the circumstance that copies of films with surveys of the hull, the navigating bridge and the bow were not at first delivered to the Estonian members of the Joint Commission. They were sent to Estonia only after they were separately asked for.

32. In order to clarify the contradictions and questionable issues described in this Report the Committee wanted to meet the divers of the company Rockwater. Considering that based on clause 12 of the contract and section 2.3.1. of the Survey Report all the divers had confidentiality obligation, the Committee contacted Johan Franson, who signed the contract as a representative of Sweden, to receive a written document allowing the Chairman of the Committee to interview the divers so that they would not be bound by the confidentiality obligation. Johan Franson refused to give such permission.

33. On 01.10.1994 the Republic of Estonia Embassy in Sweden sent a note to the Swedish Ministry of Foreign Affairs concerning the fact that the Estonian consul was not allowed any access to the surviving Estonian citizens brought to the hospitals in Sweden and no information was given about them, and such attitude was in direct contradiction with the Vienna Convention on Consular Relations. Toomas Tamme, who was Estonian consul at that time, confirmed to the Chairman of the Committee that he indeed got no information from the Swedish authorities about the accident and the survivors. Also, during the first days after the accident he was not allowed to meet Estonian survivors; the hospitals did not even tell him the number and names of Estonians who stayed in the hospital.

6) Is there currently any additional information available in Estonia, Sweden or Finland concerning the wreckage or its investigation which is protected by state secret on any level?

34. In Estonia, a surveillance file of the Security Police is protected by state secret classified as secret, but this file does not contain any unknown information. The Committee is on the opinion that the Government of the Republic could make this file public. The Committee was unable to determine whether there are any confidential materials about the wreckage in Finland and Sweden. The Committee, however, possesses a copy of an answer to a journalist's question, where it is stated that the United States National Security Agency has three documents relating to the wreckage of the Estonia that are confidential.

Tallinn, 10 March 2006
[Signed]
Margus Kurm
Chairman of the Committee
Leading Public Prosecutor