

Report on the accident at Roskilde Festival on 30 June 2000.

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Roskilde Police

Report on the Accident at the Roskilde Festival

Introduction:

This report concerns the sequence of events prior to and during the accident in connection with the Roskilde Festival on 30 June 2000, including establishing the time sequence of the accident.

The report does not deal with the course of the rescue operation.

The report is based on interviews with a great number of witnesses: festival guests, festival guards, other groups of persons involved in the festival and the festival management, a total of 977 persons, some of whom have been interviewed several times.

It should be pointed out that this has not been a criminal inquiry, but an investigation aimed at clarifying the sequence of events in connection with the accident; and, if possible, finding answers to why the concert ended with the loss of the lives of nine young men.

The report is a continuation of Roskilde Police's preliminary report of 14 July 2000. The preliminary report was made at the request of the Danish Ministry of Justice in order to brief the Minister of Justice quickly on the sequence of events and the causes of the fatalities.

The police's emergency measures, planning and structure in connection with the Roskilde Festival are described in the preliminary report and are not repeated here.

Emergency call to the police.

The first call concerning the accident was registered by the emergency central on 30 June at 23:32 hours. The call came from what at the time was an unidentified telephone via 112 with the information that five ambulances were needed for persons with heart failure that had occurred at the concert with the band Pearl Jam on the Orange Stage.

It has since appeared that the call came from a doctor on the festival's medical stand-by team. The doctor has reported that she was in the first-aid tent behind the Orange Stage, and that approximately 10 minutes earlier she had been told by other doctors that people who were unwell would be coming in for treatment. This doctor has stated that the band was still playing when she received this message.

When the first of the announced persons brought to the first-aid tent suffered heart failure, the doctor took a mobile telephone and called the emergency central to order an ambulance; however, two other lifeless persons were brought to the tent almost simultaneously, so she ordered five ambulances.

Members of the medical stand-by team at the Orange Stage also attempted to call ambulances via to the festival's Emergency Office.

A police patrol close to the Orange Stage was directed to the area behind the stage and reached the area less than one minute after the call to the alarm central, i.e. at approx. 23:33 hours.

Roskilde Fire Service, in charge of the ambulance service in Roskilde, was called at 23:33 hours and the first ambulance was at the scene of the accident at 23:37 hours. Ambulance routes were opened, and a place for the casualties and a waiting area for injured people were established.

Technical examinations.

Site layout

The area where the accident occurred is in front of the Orange Stage; limited towards the stage by a front fence, in back of the stage by a sound tower and on the sides corresponding to the width of the stage, please see the drawing.

Breakwater-style fittings:

There were 78 barriers or breakwater-style fittings in the area – iron tubes in reversed U-shape, fixed solidly in the ground, between 94 and 125 cm tall, 167 cm wide and at a distance of 82 cm from each other.

The purpose of the breakwater-style fittings was to counteract pressure from the audience – from behind and from the sides - from spreading to the area in front of the stage. In order to prevent the audience from using the barriers as a platform to cross the front fence, no barriers were erected directly before the front fence.

The distance between the barriers was so great that it should not have been possible for the audience to stand on two barriers at the same time. The barriers divided the area in front of the stage into sections. The section numbering and division closest to the stage was made by the police in conjunction with the investigation.

None of the barriers had been damaged, i.e. bent or broken. They showed signs of several years of usage in the form of scratches and marks. The barriers were established in connection with renovation of the area in front of the Orange Stage

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in 1992. The reason for the renovation was a wet festival in 1991, with a lot of mud in front of the stage, and the desire to limit audience-created waves.

After inspecting the site in front of the Orange Stage, including the barriers, the Danish Technological Institute has stated that under normal circumstances, the security measures must be considered to be good and to offer reasonable good protection against trampling.

It is said in the conclusion that the security measures taken at the Roskilde Festival 2000 cannot be criticised, but since the accident happened despite the barriers, it must be established that the set-up was not safe enough, and that a different, safer arrangement must be made in the audience area.

Soil conditions.

In connection with renovation, the soil came to consist of one layer of pebbles and two layers of broken stones of varying size, approx. 40 cm thick in total, topped by approx. 8 cm of stone dust.

Various witnesses have described the soil conditions. Some describe the surface as slippery and muddy, while others say firm and hard, but wet. At the inspection after the accident – immediately after as well as the next day in daylight – the soil is described as very wet, but not really muddy due to the hard surface of gravel material.

At the request of the police, the Geotechnics Institute examined the soil, in particular with a view to assessing whether it was slippery/muddy at the time of the accident.

The Geotechnics Institute has confirmed that the soil is built up as described. Furthermore, the Institute stated that the layer of stone dust, when water-saturated after rain, does not allow water to penetrate to the underlying drainage layers. As the area is nearly vertical, surface water can flow only slowly to the sewers in the area.

Weather conditions.

According to information from Danish Meteorological Office, the weather at the time of the accident was moderate breeze (approx. 8m/sec) from the west, overcast, misty with drizzle and around 11 degrees C. Atmospheric humidity was 96. At 08:00 hours on 1 July 2000 2 mm rain had fallen within the preceding 12 hours.

Breathing conditions for the audience.

A number of witnesses have stated that it was difficult for anyone to breathe below shoulder height and in particular near the ground, and that the air was very warm and humid.

These statements come from festival guests who had been down on the ground and as well as from the front area guards who had their heads down among the audience while helping guests over the front fence. Festival guests have also said that they virtually had to stand on their tiptoes to breathe. Others, including festival guests who were down on the ground, said that they didn't have any trouble breathing, but that the air was indeed very warm and humid.

Various experts have also made statements about the phenomenon. Some believe that the concentration of carbon dioxide (CO₂) was strongly increased due to exhaled air and stagnant air from the audience, which results in progressive torpor; high concentrations of CO₂ can be almost toxic, and can cause breathing problems. There have been theories that a heavy concentration of ammonia in the air poisoned people in the audience.

At the request of the police, the Danish Technological Institute has stated that it is unlikely that the oxygen concentration among the audience had changed that it is unlikely that the content of CO₂ in the air was so high that it led to the risk of breathing problems or indisposition, and that it moreover is unlikely that the ammonia content in the air was a contributory factor to the accident.

A chief physician attached to the Defence Medical School, who is a certified diver physician with the Danish Maritime Authority and the Navy, after having been informed of the various witness statements about breathing problems, stated that it is possible that toxic concentrations of CO₂ were formed among those who fell, but that it is not possible to calculate the concentration as there are too many uncertain factors.

Even small increases in the CO₂ content of inhalation air makes it necessary to breathe much quicker. The chief physician also states that it is very unlikely that there was a lack of oxygen.

Sound conditions.

In connection with the initial inquiry into the accident, a number of witnesses stated that the sound during the concert was poor, low, unclear and lacking bass, in particular at a distance from the stage and at the sides. Also during the further investigation, witnesses who were standing at a certain distance from the stage, especially from the sound tower and further away, made such statements. Possible sound problems have been checked because a number of witnesses said that more people than usual tried to get close to the stage to get more out of the concert.

Two professional firms handle the operation of the sound system at the Orange Stage. Bands usually bring their own sound mixer, which is connected to the rest of the system. The sound is controlled from a sound tower 35 metres from the stage.

The sound system consists primarily of a stage system and a so-called delay system, which gives a slight delay in the sound coming from the loudspeakers further back, i.e. next to and behind the sound tower. The professional sound crew did not notice any defects in the system or the volume, and measurements made at the site during the concert have not shown anything unusual about the volume.

However, there are reports that the sound system may not have been tuned optimally during the first few numbers of the concert, but that adjustments were being made. The same group of people has also said that the rainy and windy weather may have had an impact on the sound quality, making the sound appear thin and jumpy – the sound was almost “blown away”.

Evaluation:

It must be assumed that the layout of safety barriers in the area offered reasonably good protection to keep the audience from being crushed; however, given that the accident occurred, it must be ascertained that the arrangement was not safe enough.

It must be assumed that at the time of the accident, the surface was not particularly muddy, greasy or slippery, but, on the contrary, very wet and hard, however, providing rather good foothold. However, the waste, etc., found in the area subsequently may have caused a slippery and greasy surface in some places.

There is no doubt that the cold, rainy and windy weather meant that many people in the audience wore too many layers of clothing, causing many of them to perspire heavily and eventually suffer the effects of dehydration. This may have played a part in relation to the general well being of the audience.

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Experts do not agree about whether there were such large concentrations of CO₂ near the ground that this could have been noticeable in terms of toxic air or breathing problems.

Statements from witnesses on the subject are, however, very pronounced and so unambiguous that it is difficult to believe that there is nothing to it. For some, the explanation may be that they were lying pressed together and had difficulty in just physically getting enough chest room to ensure breathing. Another explanation can be the very high air humidity and warmth of the crowd.

Yet another explanation may be that after falling, witnesses were frightened, upset and perhaps bordering on panic. In such a situation, it is well known that hyperventilation may occur, i.e. breathing becomes very rapid and the person experiences shortness of breath, which creates the sensation of not being able to breathe. There is no doubt that the sensation of being unable to breathe worsened an already tense situation and thus made some people struggle more violently to get up, thus exhausting them more quickly.

Based on the very unambiguous statements from members of the audience, partially confirmed by professional sound crew, it is probable that the sound volume seemed low and the sound quality poor in some areas on the site.

Regardless of whether there were technical problems with the sound, there is scarcely any doubt that weather conditions affected the perception of both volume and quality of sound. This situation caused more members of the audience than usual to try to get to the front of the stage where the sound was better.

Information about the casualties /injured.

In the accident eight young men were killed outright and on 5 July 2000 another young man died as a result of the accident. Those killed were from 17 to 26 years old. Most of them were tall and heavy.

The casualties included one German national, one Dutch national, one Australian national, three Swedish nationals and three Danish nationals. The cause of death for all of them was suffocation after compression/pressing in of the chest. One victim had a fractured rib as well.

All the victims had abrasions or bruising in various places on the body and in the face, but otherwise no injuries. Blood samples were drawn from the first eight casualties. All had from small to moderate concentrations of alcohol from 0.03 to 1.68 per mille. None of them had been under the influence of narcotic substances.

In addition to the casualties, 34 persons were taken to Roskilde County Hospital after the accident. Of the injured, one was described as severely injured and 10 as slightly injured, while the degree of injury for the remaining 23 is not known. That means that a total of 43 persons were taken to Roskilde County Hospital. It is uncertain how many persons were treated at the festival site after the accident, without being taken to the hospital.

The band Pearl Jam.

Pearl Jam previously performed on the Roskilde festival's Orange Stage in 1992. At that concert, Eddie Vedder, the lead singer, jumped out among the audience and let himself be carried by the arms of the audience, and there were also some incidents during the concert with confrontations with the guards.

During the concert on 30 June 2000 there were none such incidents. Pearl Jam's lead singer Eddie Vedder said very little to the audience during the concert, and nothing that was said nor the behaviour of the band otherwise encouraged the audience to behave wildly or violently. After the concert was stopped, the lead singer and tour manager of the band tried persistently to get the audience to move back.

The Press.

The police contacted two Danish television stations that had transmitted videotape coverage from the festival around the time of the accident. The television stations agreed to hand over the material that was shown on television, but not their unedited tapes.

However, the television companies have stated that the unedited tapes do not contain footage that could clarify the sequence of events. Based on precedent in the area, it has not been deemed possible to have the television companies ordered to hand over the unedited tapes.

One daily newspaper has stated after the accident that it was in possession of a sound recording from the concert. Although requested to do so, the newspaper has not wanted to forward a copy of the sound recording.

Time sequence.

From the police's preliminary report of 14 July 2000 regarding the accident, it appeared that it was difficult to establish precisely how long the casualties had been penned to the ground, how long it took before the front area and stage guards realised that they had a dangerous situation on their hands, and how long it took before the music was then stopped.

The reason for this is that at the preliminary interview it was established that the witnesses' concept of time was very uncertain, both because they had not looked at a watch and because their sense of time was influenced by the severity and chaos of the situation. During the continued inquiry, the police focused in particular on clarifying the time sequence in more detail, as it appeared from the preliminary report that it took quite a while for the front area guards to realise that this was an unusual and dangerous situation and before the music was then stopped.

In order to clarify the time sequence of the accident, it has therefore been essential to the police to establish the precise beginning and end of the Pearl Jam concert, and which numbers were played and when. The latter, in particular, because no witnesses knew the exact time, whereas some were able to relate events and time sequences to the numbers being played on stage.

Festival management did not keep a logbook of the course of the concert. Nor are there any witnesses who can say precisely when the concert started and ended.

After the accident, the police came into possession of a complete and continuous sound recording of the entire concert with Pearl Jam. The recording comes from the mixer desk and was left with the police by the band.

In an interview at the end of September, one witness stated that he had recorded a small part of the concert on video with time indication. He turned over the videotape to the police a few days later, and it could be established that he had recorded the end of one of Pearl Jam's numbers. On 13 October 2000, the police got the opportunity to examine the video recorder and could establish that the built-in clock at that time was 3 minutes and 6 seconds ahead of the official time in Denmark.

Another witness stated that he was talking on his cell phone when he was told that something was wrong in front of the stage. It has been established that this conversation ended at 23:19:32 hours.

A third witness has stated that he talked on his mobile telephone when the music stopped. He wanted to check on the situation and cut off the conversation. The time was then 23:25:06 hours.

The call to the police via 112 came in at 23:32:06 hours. Based on this information, the police have calculated that Pearl Jam's concert on 30 June 2000 started at 22:34:39 and ended at 23:24:30 hours. Although the calculation is subject to minor uncertainties, the assessment is that those time indications are reasonably accurate.

Based on this time schedule, Pearl Jam started the following numbers at the following hours:

22.35.15: 1st number, Corduroy
22.39.54: 2nd number, Breakerfall
22.42.32: 3rd number, Hail hail
22.45.55: 4th number, Animal
22.48.39: 5th number, Given to fly
22.52.44: 6th number, Even flow
22.58.16: 7th number, MFC
23.00.44: 8. number, Habit
23.04.39: 9. number, Better man
23.08.41: 10. number, Light years
23.13.28: 11. number, Insignificance
23.18.05: 12. number, Daughter.
23.24.30: Music is stopped
23.32.06: Emergency call to the alarm central

Festival guests.

Number.

There was a large crowd in front of the Orange Stage when Pearl Jam gave its concert. Pearl Jam was one of the Roskilde Festival's top names and a band with many fans in Denmark. Besides, the band had not performed in Denmark since 1992, when it also performed at the Roskilde Festival.

In addition, the previous band performing at the Orange Stage, Swedish Kent, also had a large crowd and many of the members of the audience stayed for the Pearl Jam concert. Many members of the audience had also shown up early to be ready for the subsequent concert with The Cure.

It is not possible to state how many audience members were actually present, but a conservative estimate from various quarters is approx. 50,000.

Clothing

Due to the cold, clammy and windy weather a lot of people wore warm clothes and rain gear. Such a large crowd and so much movement caused a lot of people to perspire heavily. The pressure of the crowd made it difficult for people to take off extra clothing and there was no place for them to put it if they did manage to take it off. This caused an audience that was almost steaming – a few people said that it looked like smoke and they thought there was a fire.

Behaviour.

Prior to but in particular at the start of the Pearl Jam concert, the audience started moving. It is described as pressure from all sides in the area with the breakwater-style fittings near the stage. The pressure came mainly from the sides and from behind. The audience began swaying back and forth and to the sides.

During some periods this pressure was so strong that members of the audience were unable to lift their arms above their heads and unable to move on their own, as they were lifted up more or less so their feet did not touch the ground. Members of the audience also found themselves standing on the feet of others or unable to find room for their own feet. It has also been described that members of the audience were pressed so violently against the breakwater-style fittings that it was painful.

The pressure increased during the concert. The pressure was both even as well as in jolts or waves. There are many descriptions of groups of people who formed chains by taking each other under the arms, formed wedge-like formations and formed what some call a “train”, where you hold each other by the shoulder and thus force your way through the crowd. As one witness says: When they form chains they always get through. Some have described these phenomena, which are known from other concerts, as more violent than they had experienced before. Episodes were mentioned about a particularly violent pressure from the right side (east) of the audience area after the end of a concert at the Green Stage with the band Travis. (That concert ended at approx. at 22:30 hours and 15-20 minutes or more may have elapsed before that audience left the Green Stage and arrived at the Orange Stage.)

During the concert many members of the audience who were close to the stage felt frightened and insecure and wanted to get out. To get out they either pushed their way all the way to the front fence at the stage, to the side or backwards. Some made their way rather violently as they felt that “they had to get out now”. This, too, caused some agitation and movement among the audience. Others have used the term crowd surfing to get away, see below.

Some witnesses say that the audience was more aggressive than usual and that there was a hostile atmosphere. There are, however, descriptions to the opposite as well.

Crowd-surfing.

There was crowd surfing already from the beginning of the concert, i.e. members of the audience are lifted up over the heads of other members and carried above the crowd on their arms. Some people did it for fun, but many let themselves be crowd-surfed out of the audience area and up to the front fence by the stage, because they felt that the pressure was too great and that it was difficult or impossible to move away from the area on their own.

Many girls, in particular, took advantage of this opportunity. Some members of the audience who were close to the front fence said that so many crowd-surfers came by that at the end they did not have the strength to carry them, just as they were being constantly hit in the head by big boots or other footwear.

What happened.

The disturbance in the crowd and the pressure described caused some members of the audience to fall. It did not happen only once and in one place. However, in most places people got up again, either by themselves or with the help of those around them. To fall during a concert in this manner is not unusual according to some witnesses.

A large group of people fell in sections 13 and 16, slightly to the right from the stage centre seen from the audience side (east of the stage centre) and only few metres from the front fence. It is described as almost a domino effect. Members of the audience were pushed or pressed and were not able to move their feet and fell. In this connection and in their efforts to get up again or while being helped up, they became completely entangled – literally locked together. This created what was almost a hole in the crowd. Crowd-surfers also landed on the crowd as there was nobody to carry them further. Bystanders were toppled or pressed across those lying down, as they were unable to move their feet, and being pressed by the crowd at the same time.

After being knocked down, some people managed to get to their feet again, either by themselves or with help. Some were helped across the front fence and away from the audience area. But as other people continued to fall into the hole, it was not possible to get all of them up and out. Some describe the area where they fell as a 2x3-metre hole in the crowd, while others describe it as bigger, up to 5x5 metres. It is difficult to say precisely just how many members of the audience were down in this site altogether, but it is probably upwards of about 50. At any rate, some say that at one point there were 30-40 people in the hole.

Some members of the audience who were standing quite close to the described area – within a few metres – did not observe anything unusual. Audience further back from the site did not see anything either.

When did some of the audience fall?

As it was pointed out in the police's preliminary report, the audience's sense of time is influenced by the situation. People were either in the situation of being at a concert where they were not thinking about the time or in the situation of being under stress, frightened or even in panic. This is the reason that very few of the witnesses the police talked were able to put a time on the events. However, as mentioned above, some witnesses were able to relate events to the music by relistening to the concert, as they were able to recall or have a feeling about what happened during specific numbers.

It must be emphasised that these time indications are not precise, as the statements say that something happened during a number or that one number can be recalled but not the next, and thus the witness believes that he or she fell at this particular time. Bearing in mind these elements of uncertainty, it is a realistic assessment that the audience in the area by sections 13 and 16 started to fall around 23:06 hours during the number Better Man; however, there are some statements that the audience fell later, in particular between 23:10 hours and 23:15 hours, but also all the way up to the music stopping at 23:24:30. There are also statements that the audience fell earlier, a few minutes before 23:00 hours.

These statements need not be inconsistent, as some of the audience who fell first got up relatively quickly again, while others then fell or were knocked over among those already down. Therefore, it took some time before the situation became gridlocked and it appeared that it was impossible to get up again. Among those lying down, there was not any general panic at the beginning, but some people were, naturally, in panic and thus shouted and screamed and used all their strength. Others remained calm and simply lay still and waited. Some were all the way down on the ground and unable to move, but were rescued without any injuries.

Many spoke of breathing difficulties, due to bad air (warm, moist and "used"), and because they were jammed together by the pressure from those on top of them. As mentioned, members of the audience fell in other areas as well – and many at the same time – but they managed to get up again, perhaps after a little time. As mentioned, it is not an unknown phenomenon at concerts that individuals or groups in the audience fall without this being considered dangerous or serious.

Evaluation:

It can hardly be said that there is one single reason that so many members of the audience fell. Contributory factors have been the disturbance among the audience, the enormous pressure and that so many people wanted to get up right up in front of the stage. The reason for this was that people wanted to get close to the band, but also that sound conditions – sound intensity and quality – further back were not very good.

Weather conditions, too, can probably be blamed, if the audience were not as relaxed and helpful as they usually are at concerts. The widespread crowd-surfing must also be considered to have had a great impact, as crowd-surfers landed on top of those people already lying down and prevented them from getting up and also made standing audience fall.

Structure of the Roskilde Festival's organisation.

The Roskilde Festival employs three managers, each with his own area of responsibility, which can briefly be described as responsibility for the creative, administrative and practical aspects of the festival, respectively.

All stages, including the Orange Stage, have their own organisation with a coordinating manager, and a number of people responsible for various areas, such as front stage (sound tower and loudspeaker towers), the stage (setting up the stage proper and front area), backstage, (area behind the stage), production (i.e. holding the concerts) and several others. During the festival proper there are six so-called operation managers, each of whom serves as the executive manager of the festival on an eight-hour shift.

All three managers of the festival were at the festival site in the Orange area during the concert, in the audience area and behind the stage, respectively. They did not listen in on Orange Stage's emergency radio channel. They came to Orange Stage after hearing reports that there were problems in the audience. By the time the first manager reached the front area, the music had stopped. Neither was asked whether the music should be stopped.

Festival staff.

Front area and stage guards.

Orange Stage has four guard teams of approx. 28 volunteers, each. During concerts on the Orange Stage, there is a guard team with one leader in the front stage area. Their job is to keep an eye on the audience, supply water to the audience and help members of the audience over the front fence, if required.

In the passageway (where people who get in across the front fence to the front area are removed from the closed area) there is a similar number of guards, also with a leader. If things are very busy in the front area, some of the passageway guards are moved out there.

On the stage are two stage guards and a team leader for the stage guards. The team leader moves around on the stage while the two stage guards are stationed on either side of the stage towards the audience. Their task is to look out over the audience, give messages to the head of the front of the stage area about problems in the audience and prevent members of the audience from climbing up on the stage.

The two stage guards and the three leaders have mutual contact via radios with headsets via a common radio channel. The Orange Production Office, from where concerts on the Orange Stage are managed, listens in on the same radio channel. On stage is another stage manager, who is responsible for running concerts and is the person who has contact with the individual bands. The stage manager does not have a radio.

Finally, there is a presenter on the stage, who presents bands to the audience and who passes on messages to the audience. At the time of the accident there were no written guidelines for how a concert was to be stopped and who could do it. The festival management has stated that the guard managers and stage guards, if they became aware of or were made aware of a situation that required the music to be stopped, were to report this to the guard manager on the stage. He was to take contact to the stage manager, who was responsible for Roskilde stopping the music. This could be done either by direct contact to the band or to a representative of the band.

The festival management has emphasized that the stage manager has full responsibility on the stage. The guard manager for the front of the stage stated that any message for the music to be stopped is to be passed on and that people behind her – the Orange Production Office – were to handle such messages. The manager of the guard team in the passageway stated that he believed that a decision to stop a concert was to be made by the Orange Production Office. The manager of the Orange Production Office stated that at one point she heard radio communication about whether the music should be stopped, apparently because it was uncertain who could make such a decision. It appears from the interview that she did not see it as her job to decide that the music was to be stopped.

The stage manager has stated that he had the authority to stop the music if necessary. A request to this effect, in his opinion, was to come from a team leader. If he needed a confirmation of his decision to stop the music, he believed that this had to take place via the management at the Orange Production Office and further to top festival management.

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The presenter has stated that if he were to stop the music, it had to be done via the stage manager or someone from the festival management. He did not have any independent authority.

Sequence of events according to the leaders of the guard staff.

The leader of the front of the stage area has stated that during the concert a number of people including crowd-surfers were pulled in over the front fence, but at the beginning of the concert and no more in number than at similar concerts.

There was some disturbance among the crowd. During the concert she asked for backup from the passageway guards. There was so much pressure against the front fence that it was difficult to pull people over the front fence. At one point the front area guard was told by a Swedish girl who had come over the front fence as a crowd-surfer that three were people lying on the ground in front of the stage.

The front area leader asked the stage guards if they could see anything, but they could not. The front area guard then went to stand on the front fence from where she could see that there was a small hole in among the audience in section 14. The hole grew while she was watching. One of the stage guards confirmed that he could also now see the hole.

The front area guard then said on the radio without addressing it to anyone in particular that the music had to be stopped. Shortly afterwards she called the stage guard leader. He came down to the front area and then the music was stopped after a few minutes.

In addition she gave other messages over the radio, i.e. that it was "completely wild", that they would have difficulty pulling audience over the front fence, and that they had been told by audience that "there were dead people out there". She did not address the messages to anyone in particular, but believed that the Orange Production Office would hear the messages and respond.

She estimates that it was 10-20 minutes from the time the Swedish girl mentioned that people had fallen until the music was stopped. Several of the front guards asked or demanded that she stop the music. She responded that she had already made the request.

The leader of the passageway guards stated that already from the start of the concert many people came in over the front fence, some were weakened and needed support.

20-25 minutes after the concert started, the leader of the front area guards asked for assistance, which he complied with. At one point he was told by the front area guards that people had fallen and that the music had to be stopped. He spoke to the leader of the front area guards and both of them spoke to the stage guard

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manager, who came down to the front area. He reported over the radio to one of the stage guards that the music had to be stopped, and after some passage of time – which felt like a long time – the music stopped.

The stage guards have stated that at one point they were asked by the leader of the front area guards to check if people were down. They could not see anything immediately and the front area guard leader herself tried to check by stepping up on the front fence. She then said that there were people on the ground and one of the stage guards confirmed that now he could also see people lying on the ground near section 13.

The front area guard leader was then asked to try to get the fallen people up, but reported back that the front area guards could get to the fallen people. One of the stage guards heard that the front area guard leader, without addressing the message to anyone in particular, said over the radio that the music had to be stopped.

A little while later the leader of the stage guards was asked to come down to the front area. He formed a general view of the situation while in the front area, and reported to one of the stage guards that the situation was very serious and asked for the music to be stopped, and the stage guard ran backstage to find Pearl Jam's security manager. He met instead the band's tour manager, who spoke to the festival's stage manager. Then Pearl Jam's tour manager went to the lead singer and the music was stopped.

The stage guards estimate that it took between five and eight minutes from the time the front area guard leader first reported on fallen audience until the music was stopped.

The stage guard leader stated that he did not notice anything unusual during the concert, however, he had heard the front area guard leader say that there was great pressure on the front fence.

At one point the front area guard leader called the stage guard leader down to the front area where it was pointed out to him that there were problems in section 13. He could see that approx. 1½ metres from the front fence several people were lying on top of each other.

He reported to one of the stage guards that the music had to be stopped and expected that the Orange Production Office was listening in over the radio and would take action. He has no sense of how long a time elapsed until the music was stopped.

The stage manager did not observe anything unusual during the concert. At one point he was outside the Orange Production Office talking on a cell phone. While

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he was on the phone, an unknown woman came running and said that the music had to be stopped, as people were being crushed in front of the Orange Stage.

He interrupted his telephone conversation and ran towards the stage. On the stage he found Pearl Jam's tour manager and told him that there were problems and they would probably have to stop the music. The music made conversation difficult, and they went out behind the stage curtain where he repeated the problem to the tour manager. Another leader came in and was asked for advice, and then the tour manager had the music stopped.

The guard on duty in the Orange Area stated that he did not observe anything unusual from the stage during the concert, but that many people were crowd surfing. At one point he was at the Orange Production Office, where he heard the front area guard leader say over the radio that people were being pushed and couldn't get up.

Shortly afterwards he heard the front area guard leader ask for the stage guard leader and asked him to come. He himself then ran on to the stage and could see that there were problems around sections 13, 14, 16, and 17.

He also saw the stage manager and Pearl Jam's tour manager standing together backstage, where they were talking about whether the music had to be stopped. He was asked about this by the stage manager and confirmed it, and then the tour manager had the music stopped.

From the time he heard the front area guard leader's first message, he believes it took five minutes until the music was stopped. Pearl Jam's tour manager has stated that he was on the stage during the concert.

At one point the stage manager who told him that he believed there was a problem contacted him. There was a little discussion about the nature of the problem, which was that audience in the front rows were trapped. He then went to the lead singer of the band and the music was stopped.

Front area guards.

As mentioned, there were two guard teams during the Pearl Jam concert. The guard teams had just come on duty and had replaced the two other guard teams who had been on duty that day during the previous concerts on the Orange Stage.

Manager of the retiring guards stayed behind the Orange Stage during the Pearl Jam concert and were called in for assistance when the front area became very busy during the concert. A total of approx. 75 guards were in action when the concert was stopped.

The sequence of events according to the front area guards.

Some of the front area guards stated that they had not noticed anything unusual immediately before the music stopped, but that they were busy pulling audience in over the front fence, just as there were a lot of crowd-surfers. Others have stated that it was very difficult to pull audience in over the front fence as they were pressed very hard against the fence.

Some front area guards stated that there was a malevolent, negative atmosphere among the audience and that the audience was not as helpful as they used to be. Others have stated that there was a good atmosphere.

Some of the front area guards explained that people started falling approx. 20 minutes after the concert started. A few believe that it took 20 to 25 minutes after that until the concert stopped. Other front area guards became aware that there were problems 10-25 minutes before the music was stopped, while others believe that it took 5-10 minutes before the music stopped. One front area guard can refer the time when a hole appeared in the audience to 4-5 minutes after the number EvenFlow (played from 22:52:44 to 22:58:16).

One front area guard stated that he contacted the front area guards' leader three times to get the music stopped. The first time was 3-4 minutes after he had noticed a hole among the audience where those who had fallen could not get up. The second time was again after 3-4 minutes, when he was told that backup had been called. He pointed out that this was not what was needed, but that the music had to be stopped.

The third time was again after 3-4 minutes, where he said that people were out there dying. The front area guard manager answered that she had passed on the message that the music had to be stopped. After that it took approx. four minutes until the music was stopped. By that time 12-15 minutes had gone by from the time he observed people lying down (between 23:10 and 23:13 hours).

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During the sequence of events, other front area guards also gave messages to their leader that the music had to be stopped. The leader answered that the message had been passed on. Some were told that the message had been given several times.

Approximately five minutes before the music was stopped, some of the front area guards signalled to the stage guards in sign language that there were serious problems and that the music had to be stopped.

Many of the front area guards stated that after the hole was spotted, they tried to pull people up, and that quite a few did get up that way. However, their efforts were impeded by the fact that those who had fallen were tangled up in each other and it was difficult to reach out to the fallen ones, and at the same time crowd-surfers kept falling down into the hole. Therefore, they were only able to rescue members of the audience who were on top.

After the music was stopped.

After the music was stopped, Pearl Jam's lead singer Eddie Vedder told the audience at approx. 23:25 hours that some of the audience were injured and he asked the audience to move back.

During the next few minutes, the lead singer again asked the audience to move back and the band's tour manager also came to the microphone and tried to get the audience to move back.

According to witness statements from front area guards and audience, some time elapsed – most believe approx. five minutes, others say up to 10 minutes – before the audience moved back enough to allow people to come to the aid of those in distress and have them removed from section 13.

The Festival's medical stand-by.

The Roskilde Festival has a voluntary stand-by crew of doctors and nurses, divided into teams. There were eight doctors and two nurses on duty at the Orange Stage during the Pearl Jam concert. There was a team of doctors on duty at the Techno Stage and Green Stage, just as there was a mobile doctors' team that could be summoned to any area.

The co-ordinating leader of the doctors' team has stated that he was present at the First Aid tent near the Orange Stage during the concert with Pearl Jam. The number of persons who came in over the front fence was normal for this type of concert.

Between 23:00 and 23:30 hours, there were only two persons under treatment, which was less than normal. While the music was still playing, he was told that there were "five persons out there", and he ordered five ambulances over the Festival's internal radio network. He could not hear if there was any response. He also called in the doctors' teams from the other stages. They arrived shortly afterwards.

Then 10 persons were brought to the tent with heart failure and ambulances were ordered via mobile telephone to the 112 emergency number. Resuscitation attempts were made. Among those brought in, five were immediately pronounced dead, while another three were pronounced dead on arrival at the hospital.

Evaluation.

The leaders of the front area guards and the passageway guards, the two stage guards and the person on duty on stage and the person on duty at the Orange Production Office were all in mutual contact via radio set on the same radio channel. There is little doubt that the chain of command is from one of the above mentioned to the stage manager who has the authority to stop the music.

However, it must be assumed that among those mentioned there has been a certain amount of uncertainty about who in fact had authority to do what and through whom the messages were to pass. Furthermore, the explanations about radio communication indicate that messages were given "into the air", i.e. messages were not addressed to a particular person and no responses were demanded or given for messages.

As a result, even though messages were given over the radio about imminent danger and that the music should probably be stopped, no one responded immediately, probably because they did not feel that the messages were directed to them.

These circumstances must be assumed to have caused a certain amount of delay in stopping the music. It is not possible to state precisely how many minutes that may have been, as the various time indications given about what was reported over the radio are uncertain. As mentioned several times, it is not unusual during concerts of this type for people in the audience to fall, lie on the ground and then get up again either on their own or with help from others.

Throughout the entire concert – and more and more towards the end – the front areas was hectically busy pulling audience in over the front fence, receiving crowd-surfers and trying to get them out of the front area. Most of the front area guards' attention was on the audience right at the front fence and not further back. And even if they saw people lying down, this was not an unusual or dangerous sight compared to the normal picture at similar concerts.

It must be assumed that these circumstances mean that while the front area guards indeed registered that there were problems in the crowd, it took some time before they realised that the picture was different from the normal picture and that the problems were as serious as they were.

This must be assumed to have also been the case in relation to the passing on of observations about how dangerous the situation was. Also here it took time before people realised that calling reinforcements into the front area would not solve the problem.

Finally, consideration must also be given to the fact that stopping a concert was seen as something abnormal. It has been 16 years since the last time a concert had to be stopped on the Orange Stage and then it was because objects were thrown on stage.

Therefore, the guards saw the option of stopping the concert as the very last possibility to be resorted to if it appeared that problems could not be solved by removing the fallen and cramped people in the crowd away from the audience area. In addition, there is quite a lot of evidence to indicate that the leaders present wanted other leaders to be in on the decision to stop the music.

Conclusion.

In conclusion, it is the opinion of the Roskilde Police that members of the audience fell in section 13 around 23:06 hours. Not until around 23:10-23:15 hours did the situation reach gridlock, and during the same period of time, did the front guards realise that the situation was dangerous.

Information was given to the Stage Manager at 23:19 and a final message that the music was to be stopped was given from the leader of the stage guards shortly afterwards. The music stopped at 23:24 hours the last of the fallen audience were carried away from section 13 and behind the Orange Stage at approx. 23.30.

All in all, it must be ascertained that the accident and its serious consequences are the result of a chain of unfortunate circumstances. Factors are the weather, air and sound conditions, as well as the audience's behaviour, which must be evaluated as the most important reason for the accident.

The extent of the accident must be assumed to have increased by – understandably enough – the slow recognition of the seriousness of the situation, doubt about the chain of command and messages, belief that the situation could be handled from the front area, and the idea that stopping the music was a big decision.

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Finally, it is significant that once the concert was stopped, it took a long time to make the audience move back. It is not evaluated that there is any basis for instituting criminal investigation into the accident.

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Chief of Police Depute Chief of Police