The Independent Fact Group

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Methodology:

In the course of this task, we have assumed that the solution of a problem is never better than the validity of the basic assumptions. As a result, we have stipulated some methodological principles, of which the following are the most fundamental:

1. All scenarios must be considered to be true until the contrary is proved.
2. All observations, assumptions or statements on which a scenario is based must be considered false until the contrary is proved.

We have defined a number of criteria for concluding that an observation, assumption or statement may be considered to be true or false, and processes and routines for the route to be taken in clarifying an observation, assumption or statement. These criteria involve technical, empirical, statistical and/or semantic requirements which, if they are relevant, must all be met if the observation, assumption or statement is to be classified as an objective fact.

The materials we have worked with are primarily the documents, audio recordings and films in the Swedish Accident Investigation Commission's Estonia archive, together with supplementary information from other public sources and, in addition documentation from the Meyer shipyard and its independent commission.

Summary

In this report, the Independent Factgroup proves that JAIC knew that MV Estonia could not possibly sink due to water on the car deck.

The report also shows that JAIC deliberately draws the wrong conclusions in its attempts to explain the sinking process. Deliberately presenting incorrect and misleading as well as conflicting information are some of the foundations for pursuing a conspiracy theory.

We also point to a number of contradictory pieces of information in JAIC's investigation which separate and together clarify the Commission's deliberate dissemination of incorrect facts. The only alternative to this being a conscious strategy is that the commission was completely incompetent to conduct an accident investigation. Regardless of the alternative, JAIC was unable to demonstrate why and how Estonia sank.

Investigation

Henrik Evertsson and Linus Andersson revealed in their documentary filming of Estonia facts that met an almost completely united and convinced maritime world: holes in the ship's hull. JAIC's final report does not explain why Estonia sank, nor have they been able to explain how the sinking process developed.

Following the documentary revelation, many, not least the media and pseudo-associations, have openly accused Evertsson of inciting conspiracy theories about Estonia's sinking.

Pictures 1-5 are from the Estonian investigative authority's survey in July 2021. The films were made to document the damage Evertsson showed in the documentary.

The Swedish Accident Investigation Board participated in the 2021 survey and has, according to its assignment, undertaken to publish all films and other survey material for full accessibility for the general public and researchers. Unfortunately, as the Swedish investigation group Fokus Estonia showed in a report, they have withheld approximately 19 hours of film out of a total of 26 hours. The report is available on Fokus Estonia's website www.fokusestonia.se.

The images we have chosen to use here are in a quality not revealed before. They show the two large holes, each of them has an area of about 4 square meters.

If these holes contributed to the sinking, they caused a massive water inflow. A one (1) square meter leakage five (5) meters below water results in a possible inflow of ten (10) tons of water every second. Keep in mind that the holes have a total area of at least eight (8) square meters.

Picture 1. Close up of the first documented hole in the hull, opening up a large damage into the car deck an also into the deck below the car deck.

Picture 2. The first documented hole in the hull in another angle showing the extensive damage where the hull plating has been torn out from the ship.

Picture 3. The first documented hole in the hull. A larger piece of the ship's hull plate heavily bent and protruding 50 - 70 cm outside the hull side.

Picture 4. The second documented hole in the hull showing the extensive damage well under the waterline where the hull plating also has been torn out from the inside of the ship.

Picture 5. The second documented hole in the hull in another angle.

Let's look at who's a conspirator and misleader.

All conspiracies have these things in common.

1. An alleged secret conspiracy.
2. A group of conspirators.
3. "Evidence" that seems to support the conspiracy theory.
4. They completely wrongly claim that nothing happens by chance and that coincidences do not exist. Nothing is as it seems, and everything is connected.
5. The world is divided into good and evil.
6.They put the blame on certain people and groups.

Nothing of this applies to the documentation made by Evertsson and Andersson. That is a fact.

But what about JAIC in the scope of their investigation? Were they the real conspirators and misleaders?

Conspiracy theories mix reasoning about what is true and false. Those who put forward and spread conspiracy theories often see themselves as victims and truth-tellers and are to varying degrees firmly convinced that they are right. It was in common to virtually everyone involved in JAIC's investigation.

Let us now examine a single circumstance in the investigation into the sinking of Estonia. It concerns the stability survey conducted by several independent bodies connected to the JAIC investigation.

Estonia's stability and conflicting information in the JAIC's investigation.

The interesting thing about the various stability calculations such as Huss, Karppinen and others performed is not whether their estimates are credible, but rather the lack of relevant and unconditional investigation of the cause of the sinking. Instead, they seek to strengthen a thesis about water on the car deck.

For example, calculations on the longship stability in damaged conditions are entirely missing. In the JAIC final report, chapter 5.3, table 5.1, it is stated that Estonia had a stern trim of approximately + 40 cm at departure. It means that the car deck slopes aft by about 0.3 degrees. Therefore, water that may have entered the car deck tended to accumulate at the lowest point. The slope may seem minimal, but as you know, water always flows to the lower point in a "room". Or, as Kari Lehtola once put it in a discussion about the water flow in the ship, when he said, "yes… but water always finds its way ". The discussion was about how water found it's way down under the car deck.

JAIC only investigated one (1) damage process (read sinking scenario), namely water on the car deck, it had been of particular interest to calculate the longship stability. It has to do with free liquid surfaces over the ship's entire length and how the ship behaves. These liquid surfaces are of particular importance in developing and confirming the sinking process in relation to the JAIC speculation.

During a change of center of gravity in the longship, the ship tunes according to basic physical principles (elemental mechanics). It leads to an increased tendency to sink as the displacement aft while water penetrates causes the ships displacement to increase and the ship sink deeper (displaces more water).

Regardless of how and where water got into the ship, it is obvious that there was water on the car deck. It rushed backward in the ship and resulted in an increased aft trim. An estimate under the conditions given to Estonia on this last voyage is that the ship in damaged condition with 3000 tons of water on the car deck would have trimmed about 10-12 meters on the stern. At the same time, this means that the bow rises just as much upwards.

Table 5.1 Departure condition.

Deadweight		
Heavy fuel oil (IFO 180)		
tank 10	108 m^3	
tank 11	108 m^3	
daytank 36	25 m^3	
settling tank 38	20 m^3	
Total	**261 m^3**	**250 t**
Marine diesel oil		
tank 18	33 m^3	
tank 41	10 m^3	
Total	**43 m^3**	**35 t**
Gas oil		
tank 20	12 m^3	10 t
Ballast water		
tank 1	175 m^3	
tank 13+14	183 m^3	
Total	**358 m^3**	**360 t**
Fresh water		300 t
Miscellaneous liquids		50 t
Weight on the car deck		
Cargo vehicles, 40 units, 1000 t		
Passenger cars, 25 units, vans, 9 units, buses, 2 units, 100 t		
Total		**1100 t**
Crew and passengers		100 t
Miscellaneous		95 t
Total deadweight		**2300 t**
Floating Condition		
Draught mean		5.390 m
Trim, positive by stern		0.435 m
Displacement		11930 m^3
Longitudinal CG from aft. perp.		63.85 m
Vertical CG from keel		10.62 m
Transverse metacentric height		1.17 m

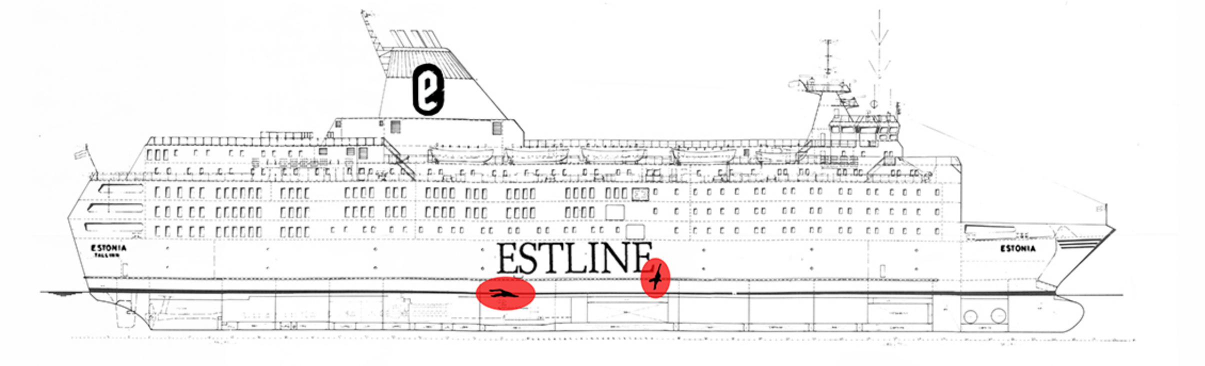
It is further confirmed by a number of witnesses aft in the ship. The ship must have trimmed considerably by the stern. At the first major overhaul down to 30-50 degrees, the witnesses looked "straight down into the sea" through the windows at deck 5.

It would not have been possible if the ship had a normal trim at the overhaul. It would have required a list of more than 60 degrees, whereby the ship certainly would have capsized (turned turtle) with 3000 ton water on the car deck.

A further consequence of a stern trim of up to 10-12 meters is that the ship, due to it also suddenly loses stability transversely and immediately "falls over." The water on the car deck settles along the side, and if the ship is undamaged under the car deck, it will immediately turn turtle with 3000 tons of water on the car deck. We have seen two examples in "our waters," namely Harald of Free Enterprise and Jan Hevelius. If the amount of water on the car deck had been somewhere around 1500 - 2000 tons, and the hull had been undamaged, the ship in the same situation would have assumed a permanent position with a 30 - 35-degree tilt, on the verge of turning around.

We know that after the overhaul, the ship straightened up and assumed a temporarily stable position around a 15-degree tilt, which allowed people to get out of the ship. It would not have been possible with a tilt over 15 - 20 degrees. Shortly later, the ship began to capsize up to 90 degrees tilt with occasional short stable positions. The scenario can only be explained if water enters under the car deck and on the car deck simultaneously. Due to the ship's construction, it is impossible without a hole in the hull in the ship's underwater body. There is nothing to prevent such a hole from extending both below and into the car deck.

We now know that there are such holes in the ship's starboard side.



Picture 6. Placement of the first (right) and second (left) documented holes in the hull.

One can of course, ask why JAIC avoided calculating longship stability. One explanation may be that it would then have been much more difficult or almost impossible to show the rapid inflow of water on the car deck. In addition, the entrance tunnel behind the ramp would quickly end up relatively high in the air and, at least for a while, prevent further water inflow.

In this context, it is interesting to note that the JAIC final report does not succeed in showing how water penetrated to the deck under the car deck and that virtually all calculations made concerning stability only affect the initial situation before the disaster becomes a fact. Huss sums this up quickly in his introduction (supp. 522 paragraph 1), where he says that his report only covers the first phase of the accident before water began to flow into the upper decks.

At the same time, he notes that the water that might have leaked down through the central casing did not affect the stability or inclination of the vessel. It is a bizarre statement, as Huss also claims that the ship could not have capsized as long as the hull was intact below and above the car deck (regardless of the amount of water on the car deck).

The Commission expresses itself somewhat differently and says that the ship can neither have capsized nor sunk as long as the hull above and below the car deck was intact.

MV ESTONIA Investigation
M Huss, Internal Report

Simulation of the capsize

1 Summary
1.1

1 Summary

This report has been made in order to verify if the capsize scenario, as described by witnesses on board MV ESTONIA, can be reasonably explained by the loss of the bow visor, the opening of the forward ramp and the subsequent flooding of car deck.

The analysis concerns only the first phase of the capsize, before water started to enter the upper decks of the vessel. It is made in three different stages described in the separate sections of the report:

Floating condition and stability
The floating condition and quasi-static residual stability have been calculated for the first phase of the capsize when water was accumulating on the A-deck (car deck).
The calculations give input to the simulation of water inflow rate.

As is well known, a ship like the ESTONIA with a fully open vehicle deck is extremely sensitive to ingress of water. A relative small amount of water like 1000 ton (0.3 m water on the deck) will result in a heel angle of over 20°. Such a large heel will cause severe damage to the interior of the public areas, significant shift of vehicles and cargo, and presumably panic among the passengers. However, the water on the car deck is in itself not sufficient to make the ship capsize as long as the hull is intact below and above the open deck. The capsize is fulfilled only when water starts entering other areas of the ship. According to the hydrostatic calculations, this condition appears when 1500-2000 ton has entered the A-deck and the heel angle is in the range of 35°-40°. Apparently there have also been some water leaking down through the centre casing doors before the flooding of upper decks. However, this is believed to have had no significant effect on the stability or heeling of the vessel.

Relative motions at the bow
The vertical relative motions between the bow and the waves have been calculated with linear strip theory for the intact ship. Approximate calculations have also been made for two heeled conditions. The result show that the motions are very sensitive to the mean period of the wave spectrum and to the relative heading of the ship towards the waves. The influence of speed is less significant in the present condition. The relative motions for heeled conditions are generally smaller than for the intact ship in head and bow sea but similar or larger in beam sea.

Simulation of water inflow
The rate and time sequence of water inflow have been simulated from the frequency distribution of relative vertical motion amplitudes. The simulation takes into account the changed floating condition, heading and speed as estimated from manoeuvring simulations and witnesses statements. The results show that the assumed probable time sequence well can be verified by the simulations. However, the uncertainty in estimates is large and the time sequence is shown to be very sensitive to small changes in the condition.

Picture 7. Summary in Supplement 522.

An explanation can be found in Huss statement in his first paragraph in supplement 522, where he says that his calculations have been prepared to seek to substantiate the scenario presented by witnesses. Such scenario could reasonably be explained by loss of bow visor and ramp. The conditions for his work are set before he carries out his investigations, so his conclusions must fit the "framework." It does not get any better though his only references to the investigations are four previous investigations carried out by Karppinen Et al. and, of course, concerning Estonia. He does nothing but struggles to verify previous surveys with all input values already set.

How have Karppinen's investigations and calculations been reported in the final report?

JAIC describes the sinking process with the support of various theoretical studies found in Karppinen's data in supplement 504, of which, according to JAIC, the most important is in the final report 12.6 (Simulation of how the ship was water filled and sank) and 12.6.1 (Floating position and stability during water filling).

JAIC rightly states that the instability of a ro-ro ferry with a large open car deck is extremely sensitive to water inflow on the car deck. Small amounts of water lead to lost stability and large heeling angles. At the same time, it is stated in 12.6.1 that "even though the list developed rapidly, the water on the car deck would not alone be sufficient to make the ship capsize and lose its survivability."

Concerning Figures 12.12 and 12.13, "static stability curves for different amounts of water on the car deck" the tilt is reported as a function of the amount of water on the car deck. The text states that the figures must be read and interpreted based on the perception that the ship's side (hull) is intact.

In figure 12.13 (list as a function of the amount of water on the car decks), the ship with 1800 tons of water on the car deck capsizes at a 65-degree list. In a situation with 2800 tons of water on car deck, capsizing takes place at a 58-degree list.

In comparison with figure 12.12 (static stability at different amounts of water on car deck), it is stated (contrary to figure 12.13) that the ship cannot capsize regardless of the amount of water on the car deck. The correcting lever has been found to increase (positive value) !!! with increased tilt all the way up to 90 degrees. At a 90-degree tilt, the straightening lever is also the largest. This figure shows that the ship, however, has an initial heeling up to a maximum of 50 degrees (at 4000 tons of water on the car deck). After that, the ship regains a correcting moment.

These curves are not representative.

In practice, it would mean that the ship had been designed so that it could not capsize regardless of cargo position (4000 tons). JAIC makes an incorrect assumption as they consider the decks from the car deck and upwards to be waterproof. The decks are only weatherproof and do not contribute to the ship's stability or buoyancy.

Correct and representative curves would show a decreasing (negative value) lever. It would not turn to a positive value after the capsizing moment, i.e. at 65 and 58 degrees according to figure 12.13. The result should have been that the ship capsizes and quickly turns upside down, all depending on how fast the upper decks were filled with water.

What is even more remarkable in this context is that in 12.6.1 it is stated that these calculations (which apply to water on car deck) "confirm that Estonia's load condition met the requirements set out in SOLAS -74 with regard to two-section damage. The damage stability requirements only apply to the vessel's waterproof part under the bulkhead deck, i.e. in this case under the car deck".

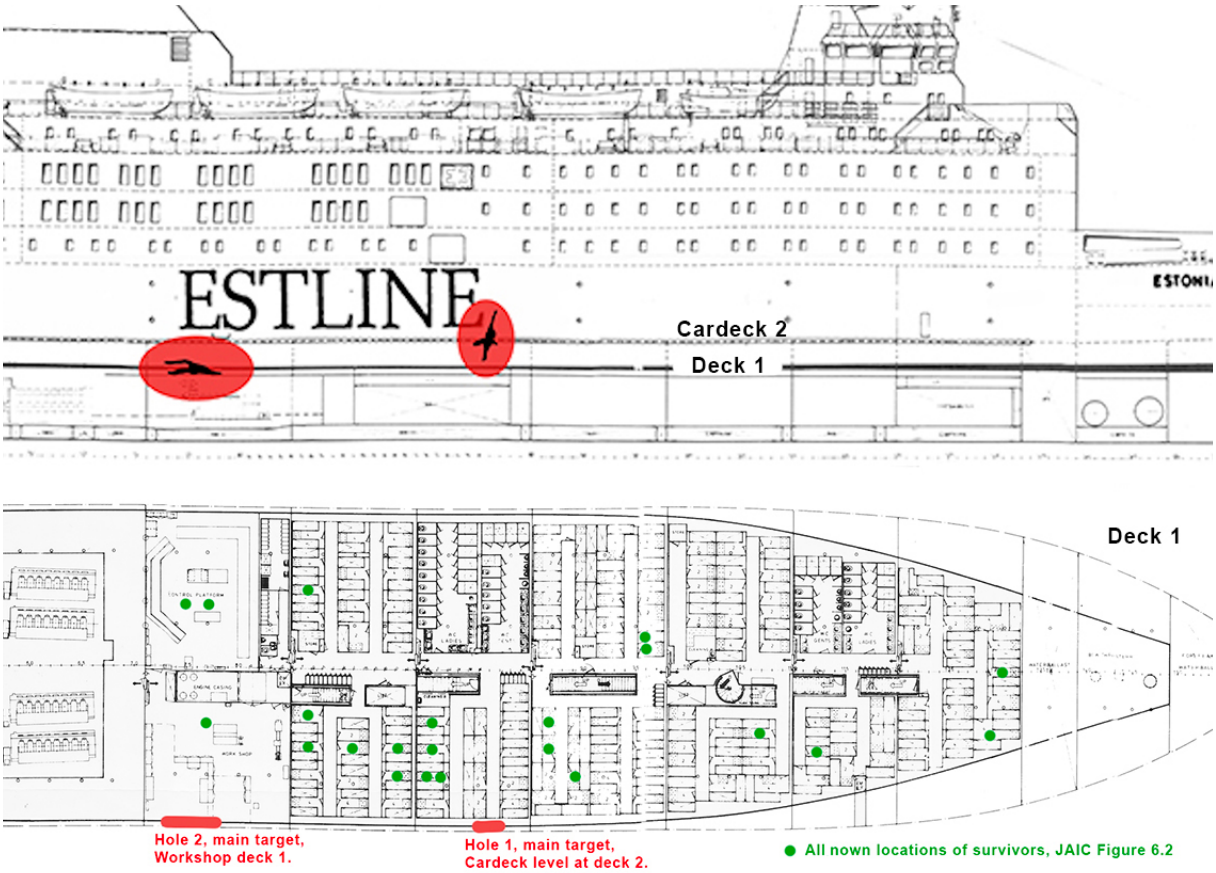
Overview of deck 1 and location of survivors, impact of damage at deck 1 and 2.

JAIC final report, 6.3.2 Reports from deck 1.

"Several witnesses have reported being awakened by loud noise or bangs. Three passengers fell out of their beds because of the ship's motion. Shortly afterward, they heard a tremendous thud, so "hard" that one of them, who was now standing, was thrown against the bulkhead. It was like a collision."

In the following picture 8 the locations of survivors and impact areas are shown.

Most of the survivors from deck 1 had cabins near hole 1 on the starboard side. However, no one had a cabin in the cross corridor where the hole occurred. It could mean that they got an early warning.



Picture 8. Overview of deck 1 and location of survivors, impact of damage at deck 1 and 2.

Further examples of conflicting information in JAIC's final report.

Below, we give examples of contradictions and contradictory facts that further demonstrate that the final report and JAIC deliberately disseminates incorrect facts.

The plot of MV Estonia's route during the last hour.

Reference to simulations performed at the Maritime Academy in Kalmar for comparison on what was written in the final report.

MV ESTONIA Investigation
M Huss, Internal Report

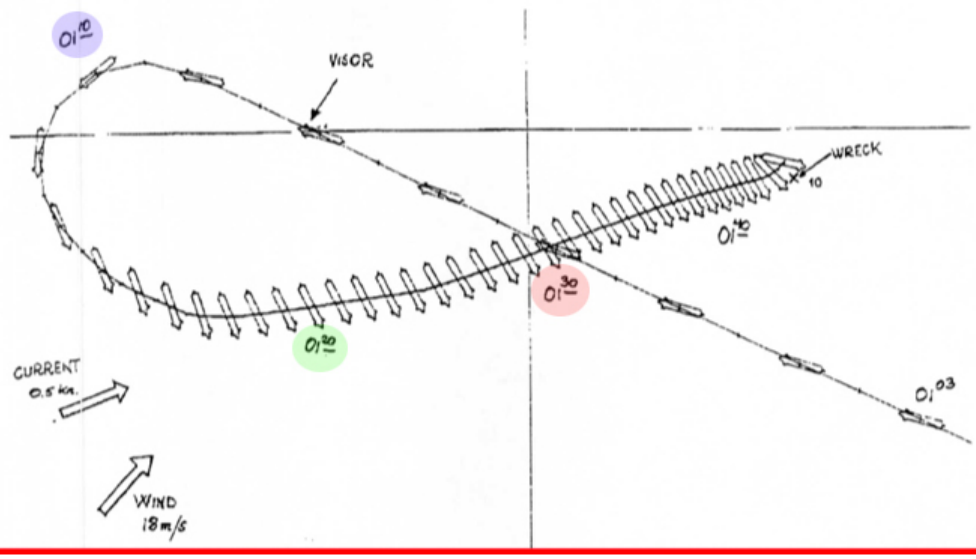
Simulation of the capsize

4 Simulation of water inflow
4.9

Example 1 A time sequence according to track simulations at Kalmar 1995

The first example is coupled to an early manoeuvring simulations of the ESTONIA during the last hour. This simulation was carried out at Kalmar Maritime Academy in order to find a possible track that could fit with the different positions of the bow visor and the wreck at the seabed. The simulation included the general manoeuvring characteristics of the ship and the effect of current and wind, but not directly the effect of heeling and wave motions. However, in an attempt to get as realistic conditions as possible, the projected area of the superstructure was continuously adjusted to account for the effect of heel on the wind drifting force.

The ship heading before the visor was lost was assumed to be 290° and the wave direction was assumed to be 245° which equals an initial relative heading to the waves of 135°.



Picture 7. The plot during the last hour according to JAIC Supplement 522.

This simulated plot shows how the ship lost its visor and then drifted towards the sinking site. Note that the visor was lost before 01.10 and then the ship turns to port and around to cross its own route at 01.30.

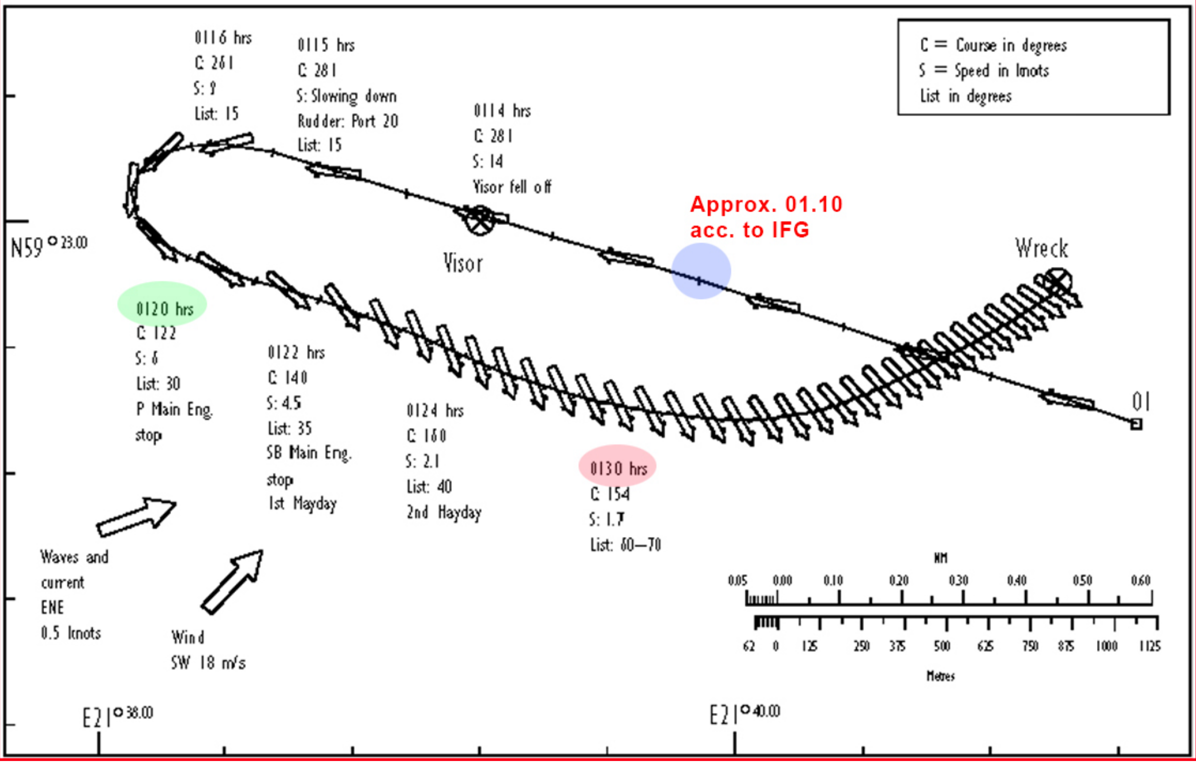
These three different time indications, according to the Supplement 522, are to be comparised with the description below from the final report where visor was lost 01.14. At 01.30. Estonia had a distance of around 1000 m left before she should cross her own route.

13.2 Course of events

13.2.1 Introduction

The general course of events described in this section has been plotted from observations on the wreck, analysis of statements by witnesses, analysis of the damage and evaluation of the strength of the visor and ramp attachments. Calculations and model tests of the vessel's behaviour in waves have also been used. Specific parts of the sequence of events are detailed in 13.3 to 13.6. In Figure 13.2. the course of events is illustrated.

Figure 13.2 Course of events as composed by the Navigation Simulator at the Maritime Academy in Kalmar, Sweden.



Picture 8. The plot during the last hour according to JAIC final report 13.2.1.

The Fact Group commentary and report conclusion:

We came to the following conclusions:

JAIC was the true conspirator and misleader.

Our report again proves that the JAIC final report is a piece of disinformation and that the cause of the MV Estonia's sinking scenario is still not explained.

JAIC completely contradicts their own conclusions in the final report that the ship was lost after "dropping the bow visor," and water penetrated and caused the ship to sink. Yet, this is what JAIC writes about it in chapter 12.6.1:

"Even if the list grows fast with water on the car deck, it alone would not be enough to make the ship capsize and sink. As long as the hull is intact and watertight below and above the car deck, the residual stability does not change in any decisive way at large heeling angles with water on the car deck (figure 12.12). The sinking could only have been completed by water penetrating other parts of the ship. "

It proves that JAIC knew that MV Estonia could not possibly sink due to water on the car deck.

It should also be added that Karppinen and Huss (after the final report was presented) in Naval Architect discussed new theories about how the water flowed into the ship, whereby they annulled their previous investigations and conclusions.

DEDICATION

We dedicate this report to all those who still 28 years after the tragedy struggle to find the truth.

If MV Estonia had been seaworthy many of the more than 850 persons who lost their lives would have had a chance to survive no matter what caused the sinking.

The Independent Fact Group
Troon, Scotland 10th of February 2022