

# final report



ON THE CAPSIZING ON 28 SEPTEMBER 1994  
IN THE BALTIC SEA  
OF THE RO-RO PASSENGER VESSEL

# MV ESTONIA

The Joint Accident Investigation Commission  
of Estonia, Finland and Sweden

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*December 1997 ESTONIA*

*The Government of the Republic of Estonia*

## **Final report on the MV ESTONIA disaster of 28 September 1994**

*Pursuant to an agreement concluded between Estonia, Finland and Sweden a "Joint Accident Investigation Commission" for the investigation of the capsizing of the passenger vessel MV ESTONIA on 28 September 1994 was set up on 29 September 1994, in accordance with a decision taken by the prime ministers of the three countries. The Commission consists of three members from each state and is chaired by one of the members from Estonia, the flag state of MV ESTONIA. Each state has appointed experts to assist the Commission.*

*In April 1995 the Commission published a part-report that covered its first technical findings and conclusions. The Commission has now concluded its task and hereby presents the final report on the accident. On the whole the conclusions in the part-report are still valid. As well as technical matters, this final report covers all other factors and circumstances found to have contributed to the inception and development of the accident. Should there be any discrepancies between translations and this English text, the English text is to be considered the authoritative version. The final report is unanimous on all points.*

for Estonia: *Uno Laur (Chairman), Heino Jaakula, Jaan Metsaveer*  
for Finland: *Kari Lehtola, Heimo Iivonen, Tuomo Karppinen*  
for Sweden: *Ann-Louise Eksborg, Hans Rosengren, Olle Noord*

Identical letters to:

*The Council of State of the Republic of Finland*  
*The Government of the Kingdom of Sweden*

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## **PREFACE**

The Joint Accident Investigation Commission has concluded its investigation of the foundering of the MV ESTONIA, a disaster that has taken the greatest toll of human life in the Baltic Sea in times of peace.

The Commission has thoroughly considered all available information directly related to the accident and the rescue operation. The information includes documents and statements regarding the ship and its operation, witness statements, analysis of the prevailing weather and sea conditions, results from diving investigations and analysis of the recovered bow visor. In addition, to reach a full understanding of the sequence of events, the Commission has initiated theoretical and experimental studies to analyse in more detail the vessel's wave-induced motion and loads, structural strength, manoeuvring characteristics and stability when flooded. The Commission has furthermore found it necessary to investigate the design procedures and operating history of the vessel as well as to collect information on other bow visor failure incidents and to consider legal and administrative issues.

This final report covers all factors and circumstances considered to have contributed to the development and outcome of the accident. In the report the Commission presents the facts found, the analysis and evaluation, conclusions drawn on the basis of the work and the recommendations made to help prevent the occurrence of similar accidents in the future. The fundamental purpose of investigating the accident was to determine its circumstances and causes, with the aim of improving the safety of life at sea and avoiding further accidents. It is not the Commission's task to apportion liability, nor, except so far as is necessary to achieve the fundamental purpose, to apportion blame.

Many people and organisations have helped significantly with support, advice and assistance to the Commission. Their contributions are gratefully acknowledged.

During the investigation, circumstances brought about changes in the membership of the Commission and its experts. It is with great regret that we remember Börje Stenström and Simo Aarnio, who did not live to see the final report. Their expertise and contribution to the report were of the greatest value.

Lastly, the Commission wishes to express to the relatives and friends of those who perished in the accident, its deepest sympathy.

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In case of discrepancies between the Estonian, Finnish and English texts, the English text is to be considered the authoritative version.

English text checked for linguistic correctness by Tim Crosfield MA.

Typography, layout: (book) Mia Marjomäki, (html) Jari Eronen, Edita Ltd.

Illustrations: Tim R. E. Autero, Pertti Broas, The Finnish Police, Gunnel Göransson, Tuomo Hokkanen, Hilikka Hänninen, Kai Katajamäki, Matti Kiipula, Risto Laiho, Lehtikuva Oy, MacGREGOR Oy, Antti Rantanen, Paula Raivio, Magnus Rietz, Sakari Rintala, SSPA, Sven Lindahl, Lars Ternblad AB, Hans Wermelin

Cover photograph: Pekka Fredman

Underwater photographs: The Finnish Frontier Guard and Rockwater A/S

Nautical charts: © The Finnish Maritime Administration

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Helsinki 1997

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### **MAIL ORDERS of the book:**

(ISBN 951-53-1611-1)

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