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False Alarm Study:

False Alarm Data Collection and Analysis
from Fire Detection and Fire Alarm Systems
in Selected European Countries

Edited by

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About Euralarm

Euralarm represents the electronic fire and security industry, providing leadership and expertise for industry, market, policy makers and standards bodies. Our members make society safer and secure through systems and services for fire detection and extinguishing, intrusion detection, access control, video monitoring, alarm transmission and alarm receiving centres. Founded in 1970, Euralarm represents over 5'000 companies within the fire safety and security industry valued at 67 billion Euros. Euralarm members are national associations and individual companies from across Europe.

Foreword

Since Euralarm was founded in 1970 by pioneers in modern electronic fire detection, quality of products and reliability of the systems were the declared aim of the newly established association.

For the founders it was clear, that only if the systems installed at the customer's facilities were living up to their expectations, the new technology would have a chance to succeed.

Therefore, the reliability of fire detectors to detect a dangerous event was a big concern right from the beginning and the frequent false alarms nearly forced the engineers to abandon the new technology in its infant stage. Products and systems where soon improved and the credibility in the new technology was restored. Nevertheless, to guarantee the sustainability of the improvements, Euralarm and its members had to engage in the development of international standards which define the minimum level of quality and performance for the products and systems. At that time this was a "heroic" task since nobody had experience with the installation and operation of fire alarm systems. As we know today, the effort was successful!

Based on this success, the number of installed fire detectors in the world grew rapidly and the field of application expanded dramatically. With this, however the number of false alarms started to grow again. What went wrong?

Experts in the industry soon recognized, that quality and reliability of fire alarm systems were not only a question of product quality but, or even more, on how and where the products are installed and operated.

After the development of product and systems standards, application standard have been developed. In a recent third step, the family of standards has been complemented by a service standard, which defines minimum quality requirements for the design, installation, operation and maintenance of fire alarm systems.

Thanks to this, the fire alarm industry is one of the best regulated in the world and respected by the various stakeholders including fire brigades and first responders.

An earlier study showed that the efforts have not been in vain. The quality and reliability of the products and systems has increased dramatically due to new and more sophisticated technologies, but also to the increased awareness for the proper installation and the increased competence of the personnel involved.

However, this new study shows that there is still a long way to go and there is room for improvement at all levels. In particular it highlights the different defi-

nitions of false alarms across the Europe. It also underlines the need to establish common terminology and methods to collect and analyze data on fire alarm events so as to come to new insights that would lead to changes in product characteristics or application & maintenance guidelines. To improve this situation an international standard should be considered.

Euralarm and its members remain fully engaged in adapting standardization and driving quality and reliability of products, systems, and installations to meet the demand of the users.

Enzo Peduzzi

President – Euralarm

Foreword

Since 1970, the Fire Section of Euralarm is the voice of the European manufacturers of Fire Detection and Fire Alarm Systems who are committed to enhance fire and life safety in buildings. Over the past decades, our members have been actively involved in European and International standardization of their products – the components of a Fire Detection and Fire Alarm System – but also in standardization of the performance of the system itself. We estimate that more than 200 experts participate in the various technical committees developing those standards.

Undoubtedly, this investment from our members – complemented by third-party certification of the products to demonstrate conformity with the standards – has considerably improved the quality and reliability of our systems. This was necessary but not sufficient to guarantee a high level of reliability of the systems operating in buildings. Quality of the design, of the installation and of the maintenance of Fire Detection and Fire Alarm Systems is crucial to ensure the highest level of operational reliability of increasingly complex systems. Therefore, application standards and Codes of Practice complementing product standards have also been developed by our members in cooperation with other stakeholders: customers, contractors, installation and service companies, fire brigades, approval bodies, etc. ...

While acknowledged that Fire Detection and Fire Alarm Systems don't cause false alarms, mismanagement or improper maintenance of these systems can dramatically increase the false alarm rate that our customers – and also first responders – have to cope with.

When the Fire Section of Euralarm decided to create a dedicated group of experts to address the concern of false alarms, the objective was to identify the main causes of false alarms and to propose changes in product, installation and maintenance standards to resolve the problem. While the overall objective remains unchanged, one of the first findings that we present in this study is that there is no common methodology to quantify the false alarm rate. Even the definition of a so-called “false alarm” varies from one country to another.

Euralarm supports the development of quality and performance standards substantiated by scientific research and data collection. In the case of false alarms, this study demonstrates that the problem cannot be properly addressed without commonly agreed – in other words standardized – definitions and data collection methodology.

Dominique Taudin

Vice-President, Fire Section Chairman – Euralarm

Preface

The present *False Alarm Study* is the result of a 3-year empirical work by the Euralarm Task Group on *False Fire Alarms*. In hazardous situations, it is crucial to alert those affected and intervention services. In some cases, however, there is a lack of evidence of any hazard at the location of the incident. We refer to such cases as false alarms. There are many different causes for false alarms and the phenomenon is widespread. They occur, for example, in alarm and early warning systems, people screeners, in the diagnosis of diseases, in journalism and in politics.

The Task Group investigated the issue of false alarms in fire detection and fire alarm systems in several European countries. The material was carefully collected and objectively processed, using a comprehensible basis, to achieve comparable calculations and identify trends and risk priorities. For the first time, facts and trends relating to the issue of false alarms in fire detection and fire alarm systems, with a view of several European countries, are presented and made available to an international audience. The study provides fundamentals relevant to the fire safety industry concerned, but also to fire departments, associations, insurance companies, testing facilities, planners and installers, building operators and science.

I thank the members of the Task Group for their dedication (in alphabetical order): Jan Blomqvist, Kjell Ericsson, Lance Rütimann and Graham Simons. They established contact with the responsible institutions, associations and people in their countries, prepared and supported meetings, and critically examined the data material and texts. I would especially like to thank Lance Rütimann. He is an outstanding expert and networker, and has supported me with his help and advice in many matters of detail, right to the end – this result would not have been achieved without him.

I would also like to thank the Advisory Group. In particular: Josua Ambrosi (*SES, the Swiss Association of Installers of Safety and Security Systems*), Dr Kurt Giselbrecht (*Brandverhütungsstelle Vorarlberg, Austria*), Colin McIntyre (*MSB, Swedish Civil Contingencies Agency*), Bert Paulusson (*Fire Services Gothenburg*), and Robert Yates (*Fire Industry Association*). They have received us in their countries and supported us with background information and data. With impressive dedication, these colleagues have collected the information that we have used here, sometimes gathering and managing it for many years, to filter out valuable findings. I thank all the other experts who enriched the meetings with their participation.

I thank Euralarm for providing the framework which enabled us to carry out our work. I would like to express special personal gratitude to the President, Enzo Pe-

duzzi, and the Chairman of the Fire Section, Dominique Taudin. Thank you for the trust you have shown in us.

I thank the trade associations and companies that have supported us in our work: *Fire Industry Association (FIA)* [GB], *German Electrical and Electronic Manufacturers' Association (ZVEI)* [DE], *SaekerhetsBranschen* [SE], *the Swiss Association of Installers of Safety and Security Systems (SES)* [CH].

I would especially like to thank my assistant, Alina Pfaff, who, with great patience, has supported me in the checking of the material, and also in many organisational details and the finalisation of the study.

The False Alarm Study represents a step in the study of the phenomenon of false alarms. Further work is necessary and planned.

Sebastian Festag
Editor/Author

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