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Emergency Response Planning in Aviation

DIKE

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Preamble

Most emergencies occur unexpectedly and hit the company, its employees and business partners and the society at the worst possible moment. Wrong or hectic and unplanned actions usually have an adverse effect and present themselves as an additional risk provoking another emergency situation.

Contingences may have little impact on the overall performance but can also severely damage the company's operation and lead, in the worst case, to the defunct of the corporation. But it is not only the commercial side of the business; it is all about people and their well-being. As a top priority, corporate management needs to answer some critical questions – what is the main aim of an Emergency Response Planning (ERP), and how can a company with its employees prepare itself to deal with and learn from an emergency? Management has to take the lead by building a transparent safety culture that is easily understood and lived by all employees, regardless of the corporation's size.

Planning for the unknown can be difficult, but the efforts will be worth it because being prepared before the emergency occurs allows for better response during and easier recovery after the event.

This publication combines the theoretical subject with aerospace leaders' practical experience and knowledge worldwide and provides insights and recommendations. Although it is written around aviation, it can and should be used by any corporate business, public sector, or private life.

A big thank you goes to all survey and interview partners, participants and lecturers of continuing education who have contributed to their valuable information and helped me write this casebook. Thanks also go to the persons in support, my wife and friends.

Roland Buecheler

Summary

Task definition and objectives
Emergencies can have a small effect on the company or in the worst case may lead to the liquidation of the corporation. A manufacturer breaks the supply-chain and as a result triggers emergencies of various magnitudes in other companies. In turn they are forced to delay the delivery of their products or services. Not all emergencies are human made, either intentional or unintentional but can be the outcome of natural causes, such as earthquakes, floods or fires. The study evaluates how aviation companies prepare themselves to deal with an emergency and how they respond in such a case. Thereby the mitigation, the emergency preparedness, the emergency itself, the improvement to deal with and to learn from the case shall be measured and rated. This process collects internal views from companies and their specialists across the full spectrum of aviation players. The results of the online survey and face-to-face interviews are identified and classified. They show the level of Emergency Response Planning generated by departments and employees. This examination leads to suggestions on how companies can maintain and/or improve their Emergency Response Planning.

Structure of the publication
The publication is structured into a theoretical and a practical part as further detailed below. The ERP may be an easy task but involves a lot of knowledge. The theoretical and practical parts provide you with proven hints and techniques to better understand the topic.

Theoretical Part – Safety Management System (SMS) – Emergency Response Planning (ERP)
The theoretical part introduces you to the Safety Management System and Risk Management and leads you step by step through the Emergency Response Planning with its full variety of emergencies – man made both intentional and unintentional and natural. Examples of various emergencies, such as crashes, incidents, blackmailing, earthquakes, social unrest, pandemics and many more help you to understand the topic. The Emergency Response Planning, as discussed in this paper, consists of four large and essential steps, each one being connected to the previous one. They are mitigation, preparedness,

response, recovery and are defined and explained in more detail. Checklists complement the theoretical part.

Practical Part – Online survey and face-to-face interviews – questions and results

The practical section deals with the web-based survey and personal or phone interviews, looks at the results and findings and gives recommendations, including the conclusion. A personalized survey approach was chosen to collect firsthand and unfiltered information required to measure the Emergency Response Planning quality and its operational dimension. For this purpose, the personalized survey with 17 quantitative and qualitative questions was sent to 438 contacts using a professional online survey tool. Face-to-face and phone interviews were also held with a flight operation executive, an air navigation leader and a transportation safety board leader. One of the interviewed companies had suffered a fatal accident some two years ago. The quantitative questions gave conclusions on the importance and experience of subjects including company organization, number of emergency events, training intervals per year etc. If some questions did not have the pre-addressed answers, they survey participants could add more details in a separate section at their discretion. The qualitative question's part of the survey included information and details about actual events, contact information etc. All survey answers were electronically recorded and further examined with the use of a downloaded Excel spreadsheet. The personal interviews were noted using a prepared questionnaire. In an introductory e-mail and ahead of the interviews, the participants and interviewed parties were assured that no personal data would be disclosed.

Results and appraisal

The survey results and interviews are then reviewed. It is important to know that all internal and external survey participants and interview partners commented and talked freely about their experiences.

It shows, that most companies employ an ERP system, with companies mandated by regulations being in the forefront. Nevertheless companies realize that a proper preparation for an emergency is a key factor in their daily work. ERP is a worldwide accepted topic. Companies in a less regulated environment work with ISO quality standards while corporations operating under ICAO chapter 19 have stringent SMS systems in place, which call for a mandated ERP system.

The public awareness of an emergency raises with the type of operation. Airplane crashes are much more vulnerable to public exposure than production companies encountering an emergency. The prevention of emergencies is more and more subject to regulations. Production companies have to adjust their systems to companies with strict mandated regulations.

Findings and recommendations
This section rates the responses to each survey or interview question and recommendations on improving the company's response to emergencies. It lists options and actions with soft and hard skills and factors.

The Emergency Response Planning is not insurance to limit or prevent a damage but a tool to prepare for an unlikely event to go through and to move back after the emergency to the ordinary operation and is also a tool to safeguard its assets – human resources, products, services, facilities and even customers. ERP is a constant process and needs to be lived. The following points help to make the ERP a success.

Implementation and use of the ERP system:
The system has to be planned, implemented and used company-wide. It needs to be set-up and maintained in a way that it is easy to understand by employees, is flexible in the further development and adoptable to counteract newly developing risks. The four phases of the Emergency Response Planning (Mitigation, Preparedness, Response, Recovery) need to be seen as one single and coordinated system within the organization, with the risk management playing a vital role – proactive prevention instead of reaction. The system requires to be monitored constantly with actions being taken as required.

Management as vital ERP driver:
The management plays an important role in steering the company which includes the prevention of emergencies hitting the corporation. Management has to devote and allocate resources, both financial and human, to the ERP system, regardless of the company's size and closely monitors and if necessary adjusts the different ERP tasks, the organizational structure and processes. It builds awareness throughout the company with the aim that each employee can contribute to prevent emergencies or reduce their severity. Important is the build-up of a "no punitive" company culture helping employees and management to discover possible hazards and risks when a person reports a situation that might have caused damage through his or her action or behavior. The em-

ployee should not be scared and made anxious but shall receive the chance to learn. In turn the corporation may profit from any events reported, helping it to move towards increased safety, security and operational quality.

Learning process:
Life is a continuous learning process based on good and bad experiences and applies also to companies. Everyone can learn from previous events, adjust processes and/or the organization. The use check-lists and their modification is a key factor and results in better safety and/or security performance in the interest of the organization, its employees and stakeholders.

Resources, human and financial:
Resources are limits for each company and need to be utilized in an economical manner and allocated carefully. Small and medium-sized enterprises due to their size and available resources might be more vulnerable to emergencies than large corporations and should, but in their interest, should also employ an ERP system. One event can quickly destroy the whole company within a short period while larger companies still have different activity fields to swallow the effects. Outside support for emergency response planning drills or aware building or even updating and revising of the ERP system is often an excellent option. And finally finances have to be made available to implement and run and ERP system.

Training:
And finally Training, Training, Training. To reflect various emergencies a constant training, starting with the topic's introduction to new employees to periodical emergency exercises for your entire organization, both theoretical and practical is required.

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