Risk Management of Machinery and Work Equipment
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John Glover
Biography

John Glover, a graduate of the Institution of Occupational Safety and Health, has practised health and safety law and safety of machinery for a number of years. He has extensive knowledge of the subject and has had published several magazine articles on health and safety practice.

After having worked for a world-leading health and safety organization specializing in machinery safety, John set up his own health and safety consultancy, Glover Associates & Consulting Ltd. This continues to fulfil his vision for the provision of machinery safety and occupational safety services to commerce and industry alike, including energy and power generation.

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Introduction

Health and safety at work is becoming increasingly significant with the implementation of the Corporate Manslaughter and Homicide Act 2007. Numerous Directives are also being issued by Brussels and implemented into European law across the member states of the European Union.

Successive high-profile accidents have led to renewed calls for changes in the law, following failed prosecutions against large companies and against individuals for manslaughter. The Corporate Manslaughter and Homicide Act makes it easier to convict organizations whose senior managers have breached their duty of care, causing death. Previously, prosecutions have failed against all but the smallest companies, so the Act could potentially see a dramatic rise in the number of corporate manslaughter cases against businesses of all sizes.

This book gives some much-needed guidance and highlights some of the most frequently asked questions on machinery safety and work equipment. However, there are some other key areas that need consideration, and so this book also covers the field of corporate risk management.

An incident that happened back in 1972, when my grandfather was killed in a mining accident due to the lack or failure of a simple system to isolate a piece of machinery, may have sown the seeds for this book. In 2009 the same mistakes are still being made, despite all the legislation and guidance (and improvements) now in place.
While there is now more of a focus on effective management and strong leadership in health and safety, there is still a need to make machinery safety simpler and more accessible. Businesses still have difficulty in relating to the legislation, and often perceive it as overwhelming in volume and content.

It is time to cut through the health and safety myths with this reference book, which has been written in a simple, no-nonsense, question and answer style that will be of benefit to engineers, specialists, generalists and line managers alike, and in particular to anyone who is:

- in a health and safety position in the public or private sectors and is about to take responsibilities, or wishes to develop an understanding of the issues relating to machinery safety;
- a full-time or part-time student at undergraduate or postgraduate level in a health and safety subject, who wishes to learn more about machinery safety;
- working as a health and safety consultant, as a lecturer, or as an employee responsible for carrying out training courses in machinery safety for their own employees or clients;
- an engineer or manager responsible for machinery and work equipment as an integral asset of their organization.

I hope you will find long-lasting value from the information contained within this book, and that it will contribute to saving lives.

John Glover
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1 Corporate risk management

1 What is corporate risk management?

Corporate risk management can be defined as ‘effectively managing all situations and circumstances that have the potential to affect the corporate body’. By implementing risk management we are complying with our statutory duty of care towards employees and others. It provides a proactive method for identifying, measuring, controlling and financing risk in order to protect the corporation’s assets, which can be defined as people and property.

2 What could risk management do for my business?

There would be a systematic shift from constant ‘fire-fighting’ and ‘crisis management’ to proactive decision making before any problems arise. Anticipating what might go wrong will become part of everyday business for you, and the management of risks will become an integral part of a risk management system.

3 What is a risk management system?

A risk management system is a set of elements within an organisation’s management system exclusively concerned with managing all kinds of risk to the business.

4 What are the consequences of not implementing a risk management system?

Without a risk management system, management will not have an insight into what could go wrong: therefore, they will expend resources
addressing problems that could have been identified sooner or avoided altogether. Bear in mind that some problems can be catastrophic and occur without warning; naturally, this can affect the long-term survival of the business, and can mean that the business is, in effect, in constant crisis.

At one end of the scale, the lack of a risk management system could mean a simple failure to meet statutory and duty holder obligations in respect of risk during a project. It may, alternatively, mean a risk of damage or loss to plant and equipment and other assets, resulting in financial loss. Ultimately, the lack of a risk management system could mean risks to the safety of individuals.

It is management's responsibility to reduce future uncertainty.

5 So, can I guarantee success by implementing risk management?

Risk management is no ‘magic bullet’ or guarantee of success, but it can improve decision making, help avoid unpleasant surprises and improve an organization’s chances of success. It will also assist you in increasing your bottom line (i.e. net profits). It has been long recognized that proactive risk management increases an organization’s chances of flourishing and economic success. The principle behind it is to think laterally and consider the breadth and diversity of the risks to the organization. Remember that if someone is injured then this could result in a claim for damages and a criminal prosecution, and this could cost a considerable amount of money to defend. The costs would need to be paid out of company profits!

6 What is the most important asset to any organization?

The most valuable asset that any organization has is the talent of its workforce. After all, it is the people that produce the goods and
services that allow the organization to profit from its revenues. Even leaving aside the statutory duties, it is just sheer common and business sense to protect such assets.

7 Is there some terminology that we need to understand?

Absolutely. Although it is important that we don’t get bogged down in jargon, the following terms cover the essentials.

Accidents are unplanned, uncontrolled events which lead to, or could have led to, loss.

Pure risks are risks which can only result in a ‘loss’ or ‘no loss’ outcome; e.g. you have an accident or don’t have an accident.

Fundamental risks are indiscriminate and can affect lots of people: a war, shortage of raw material, shortage of labour, etc.

Speculative risks can result in a financial gain or loss, e.g. people either buy your product or not.

Particular risks are particular to that organization, e.g. a company has a fire or has been victim to theft or fraud.

Corporate risks are risks that can adversely affect the corporate body. They can be simply divided into two groups:

- Internal risks, which reflect the way in which the organization is managed and what policies and procedures are implemented. These are risks that are within the control of the organization – or should be! Examples of internal risks could be management expertise, financial control, planning, human resources, contractual controls, motivation of the workforce, catastrophe planning and insurance cover.
• **External risks**, which arise from the economic, social or political environment and are effectively beyond the control of the organization. Some examples here could include changes in legislation, economic recession, actions of competitors, environmental issues.

**Statutory risks** are risks that are controlled by health and safety legislation and could adversely affect the health, safety and welfare of people without necessarily affecting the organization as a whole in the short term. Statutory risks could consist of short-term and long-term physical injury or health effects.

Certain other legal requirements, such as those Acts and regulations associated with fire, explosive atmospheres and environmental issues, should come under the remit of the risk manager and insurers.

Remember that a high incidence of statutory risk can subsequently represent a major corporate risk, and can be very expensive indeed to any organization – we will concentrate on some of the key areas in the next chapters of this book. Indeed, some companies that have operated on a ‘fire-fighting’ or reactive basis through the years have lost lots of money and backing from various external resources such as insurance companies and investors.

**8 Should I employ a risk manager?**

That depends on the size and scope of your organization, but you would do well to remember that every aspect of how an organization does business involves risk. Every financial transaction, every product or service delivered and every person employed represents a potential risk of some kind. Some insurance and risk consultants offer specialist advice in areas such a property risk, employment risk, business continuity and occupational health and safety. The floods in southern England during the summer of 2007, as well as some terrorist attacks
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(that are, thankfully, rare), highlighted the importance of business continuity management. The Association of British Insurers estimated that the total bill for the June and July floods was £3 billion. Specialist consultants can help with a detailed disaster recovery plan to enable your business to trade as quickly and as profitably as possible after such an event.

9 Should we have a risk management policy as well as a safety policy?

You could either have separate policies or an integral policy, but risk management is a continually developing process which runs right through an organization’s strategy. It should address all risks – past, present and future – to the organization, and these risks must be identified, measured and controlled. In some organizations the risk management plan will need to address constantly changing types and levels of risk – ‘dynamic’ change.

10 What do you mean by ‘dynamic’ change?

Take the example of a construction or renovation project: the fire risk here will be much greater than when the building is eventually occupied. This is owing to the constantly changing conditions on site during the different phases of the construction project, and the comings and goings of different contractors. Contractors all come from different working cultures and the different phases of a project each present unique risks, e.g. there may be a risk with large items of plant and machinery coming on or off site; alternatively, it could be a contractor constructing or dismantling large scaffold structures. A risk management plan, in this example, will take into account the continually evolving variety of risks presented by each new phase of the project.
It is worth including here a note on fire regulations for construction sites. There have been an unacceptable number of fire loss events in construction over the last few years, and the industry has had to seriously address exposure to fire. As a result the Construction Confederation, the Loss Prevention Council and insurance companies have got together and developed a code of practice related to fire prevention for construction sites. This is being policed by the insurance industry, but they tend to focus on the major projects as they have only a limited number of personnel to monitor compliance with the code. This means that, where the code is concerned, the small-to-medium-size sector is left to self-regulate.

If you think about it for a minute, the lower end of the construction industry sector operates on tighter margins and fewer resources; therefore, companies that fail to implement risk management procedures could easily find themselves exposed to a major fire risk in buildings under construction. In addition to this is the fact that many small sub-contractors employ itinerant operators and workers without any formal training. The language barrier is a significant factor in the construction industry, particularly with the free movement of workers within the EU, and care must be taken to provide adequate instruction or training to workers with little or no English language skills. If a fire occurs then the principle contractor would be involved in a complex legal wrangle, with the possibility of a loss of future business and even losing insurance cover! As well as penalty charges for delays in completing the project, there are the additional breaches of the law to consider, and how the bad publicity would affect any future tenders.

11 Is there an explicit requirement in legislation to implement risk management?

Yes. Under the Management of Health and Safety at Work Regulations 1999: Regulation 3, there is an explicit requirement for an organization
to carry out a risk assessment and, if employing five or more people, to record the details; there is more about this in subsequent chapters. The essence of good management is also set out in Regulation 5 of the above, for health and safety arrangements to be integrated with management. The four elements it outlines are:

- planning,
- organizing,
- control,
- monitoring and review.

Although this is directed at health and safety, these elements could equally apply to any other aspect of the business, e.g. employing people, ordering goods, using sub-contractors and organizing training for employees. It is good practice to identify with the above and most organizations are now beginning to demonstrate this by getting certification to BS OHSAS 18001, *Occupational health and safety management systems – Requirements*, which is an occupational health and safety management system specification.

Essentially, the implementation of BS OHSAS 18001 helps in a variety of respects: minimizing risk to employees, improving an existing occupational health and safety management system, demonstrating diligence, gaining assurance, etc. The benefits of compliance can be substantial.