

Gathering Information for Decision Making Purposes within the Safety System

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Abstract

Effective safety management systems require a blend of enforcement measures, engineering solutions, education programmes and environmental considerations. These are known to safety management educators as the 4 E's of Enforcement, Engineering, Education (including training and publicity) and Environment. Safety managers use these four factors in a variety of ways in order to reduce the levels of risk to an acceptable level. This process will be illustrated by examples. However, in order to make this process work it relies on information. Most official accident investigations are conducted for prosecution purposes and do not gather information that is required for management decision making purposes. This paper considers the issues surrounding this and looks at ways that accident investigators could simply restructure their investigations to provide the necessary information

This includes:

- The role of accident investigation and analysis
- Safety auditing - internal and external
- Accident costing as a means for justifying remedial programmes
- Planning, implementing and evaluating safety programmes
- Assessing risks
- Research

The paper concludes with the safety management education of managers and safety professionals that are currently being considered and some ideas for the future.

Information Gathering

The role of accident investigation and analysis

Saunders (1992) outlined the importance of accident investigation and analysis as an important tool in the identification of contributory factors to an incident. Following a survey of safety professionals in the United Kingdom Sheppard (1992) found that safety professionals did not systematically analyse accidents in sufficient depth necessary to aid decision making. On the contrary, a cursory approach to accident investigation was found in a majority of cases and this tended to lean the safety professional towards opinion rather than fact. Where the authorities investigated accidents, the investigations were conducted on the basis of collecting information for prosecution purposes rather than for management decision making. Saunders and Wheeler (1991) outlined ways that managers and safety professional could systematically collect accident information as an aid to the decision making process.

Saunders (2000) carried out a sample survey of 50 companies employing 100 or more employees and found that little had changed. Managers and safety professional alike do not systematically collect their own accident information for decision-making purposes. On the contrary they tend to use published statistics. These, however, tend to be collected for different purposes.

Safety auditing - internal and external

Saunders (1992) outlined the value of safety auditing as an important means of gathering information prior to decision making. Here it was recommended that managers and safety professionals systematically audit their policies, procedures, practice and safety programmes. This often highlights weaknesses within the system and when combined with other information can provide a valuable backdrop for the development and implementation of accident reduction strategies within an organisation. As part of the 2000 survey (Saunders op.cit) it was discovered that organisations did not systematically audit themselves. On the contrary they tended to leave this to external sources. Such visits were found to be either by invitation (2 of the 50 companies surveyed) or by a mandatory order (1 company). 47 of the sample had carried out no audits themselves and many managers were found to misunderstand the value and role of safety auditing as a useful tool.

Accident costing as a means for justifying remedial programmes

Similarly, all 50 companies within the sample did not cost their accidents. Furthermore, they did not even seek this information or see any value in doing so. Many managers were found to be unaware of economic rates of return or returns on investment yet expected senior managers and company accountants to come up with large sums of money for proposed safety plans and programmes. Furthermore, many safety professionals thought that their organisations were fully insured for any eventuality. Most companies have been found to cover those activities that are required by law; so if a worker drops a casting onto the floor and breaks a toe will have compensation paid from insurance sources. The damage done to equipment, however or the casting itself may very well have to be borne by the company itself. These fall within the uninsured costs of a company. Saunders (op.cit) found the

following ten elements connected with an incident that may be regarded as uninsured costs. These are not listed in any order of priority.

- Cost of wages for working time lost by workers who were not injured but whose work output was interrupted by the accident taking place;
- The net cost to repair, replace or straighten up materials or equipment damaged in the accident;
- Cost of wages paid for working time lost by injured workers, other than workers compensation payments;
- Additional costs necessitated by the accident involving overtime work;
- Cost of supervisors' wages whilst their time is required for activities necessitated by the accident;
- Wage costs due to decreased output of injured worker after return to work;
- Cost of the learning period of any new worker employed during the injured workers' absence;
- Uninsured medical costs borne by the company;
- Cost of time on accident investigations and processing legal requirements and compensation type administration; and
- Additional costs such as equipment replacement, hire of temporary facilities needed until a normal state can be resumed (e.g. replacement vehicles involved in road traffic accidents).

Managers and safety professionals, therefore, should be in a position to calculate company accident costs and company accountants will usually agree the methodology to be employed.

Research

Research is also a vital tool found to be under utilised by both managers and safety professionals. There could be for a number of reasons for this. From discussions with managers and safety professional, some regard research as being too scientific or technical and not written in a style that could be readily interpreted. Furthermore, safety research tends to be published in technical or scientific journals and managers or safety practitioners will never read these. Further investigation suggested that many managers would wait for such research to be made readily available to them in a language or style they could understand. Until this happened, they tended to regard such research as not relevant.

Planning, implementing and evaluating safety programmes

Cooke and Slack (1995) show how management decisions are taken and their management model has been amended to show how this would be relevant for managers or safety and health practitioners. These are given below in Figures 1 and 2. The system model uses the information gathering phase as the starting point and this allows priorities to be identified, costed and prioritised. The important point here is the 'safety mix.' The best way to illustrate the safety mix is to use an example that would be relevant to most people. Rather than use an industry specific example a more common one is used. As most people use the road they will be familiar with seat belts and their use.

Figure 1: THE BASIC SAFETY MANAGEMENT SYSTEM

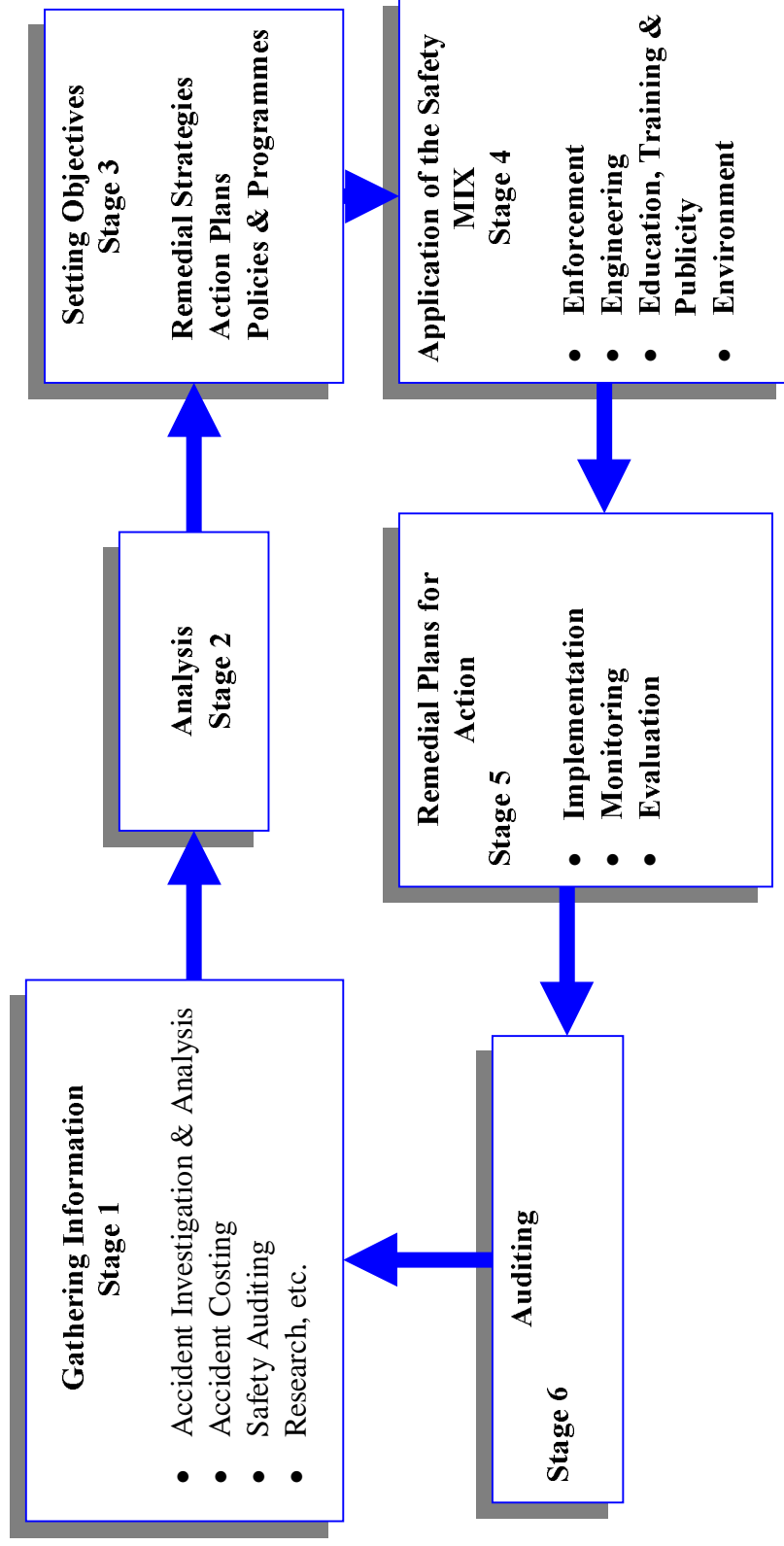
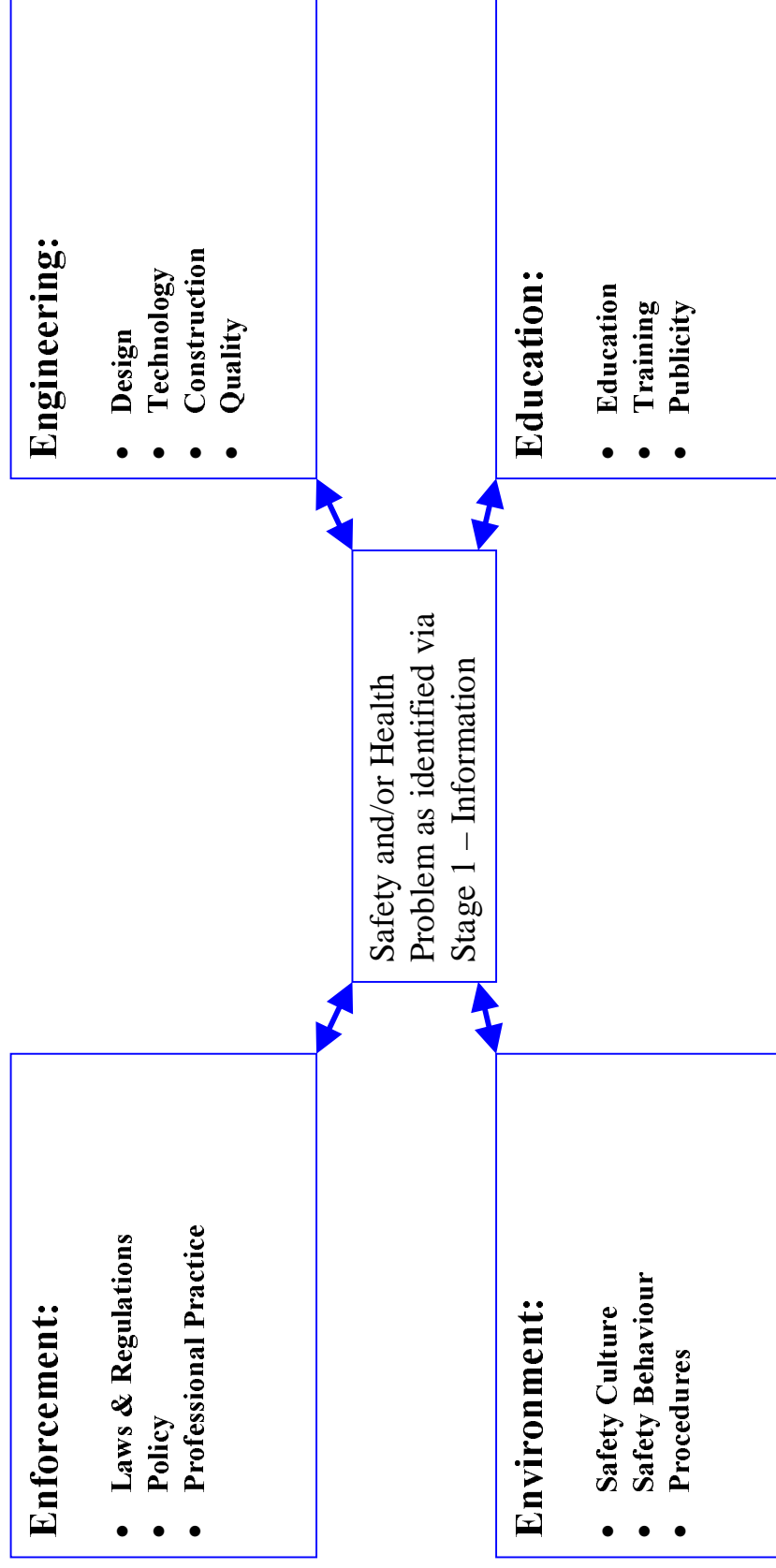


Figure 2: THE SAFETY MIX



In the early 1960's considerable research was carried out showing how the use of seat belts would reduce the number of fatal and serious road accidents because they would prevent certain types of head injury. Most developed nations at this time were forming the same conclusions. In most democracies, there is a tendency to Educate rather than legislate. Most European and American states began educating the motoring public to where seat belts. These were made available and people were expected to fit these belts into their vehicles. Education strategies also included publicity and all new drivers were trained to use the belts. This exercise alone was not sufficient. Many people found the belts uncomfortable or too difficult to adjust. The Engineer, therefore came up with the answer and after many attempts, the modern inertia belt was found the most practical and the engineers began installing them in the vehicles before they were purchased. The Environment was established and it soon became the norm to wear a seat belt. The final step was Enforcement and most European and American states now have the compulsory wearing of seat belts. This illustrates the effectiveness of the safety mix. An effective safety strategy can be regarded then as a mix or blend of the four E's of Education, Engineering, Environment and Enforcement. The blend becomes the strategy and from this plans can be drawn up, implemented, monitored, evaluated and this information put back into the information gathering phase.

Management Education for Managers and Safety Professionals

The Health and Safety Executive of the United Kingdom commissioned a survey in 1998 of all accredited British University Business Schools to ascertain what management education, if any, was available in Occupational Safety and Health. It is sad to report that although the Business Schools train the managers of tomorrow, no modules were available that prepared these future managers for their statutory duties and responsibilities in terms of occupational safety and health.

Brighton University Business School has remedied this short fall by offering a relevant elective or module for all of its undergraduate management programmes. It has also developed similar ones for its post graduate students. These modules cover such subjects as:

- Accident statistics;
- Auditing;
- Financial management and cost accounting; and
- Research methodology.

Currently in development is a specialist accredited MBA in Occupational Safety and Health (OSH) Management. This intends to take standard MBA taught subjects and an OSH vehicle is used to deliver the theory and practice. This can be undertaken in a number of ways. Students either enrol directly at the Brighton Business School for the three-year part-time course or students may join the course after year 1 from any accredited MBA programme in the European community. Delivery will be modular and ran over a number of long weekends. The course is aimed at practising managers who wish to know something of OSH or for safety professional who wish to know something about management. Topics to be covered are:

- Economics;

- Cost accounting;
- Statistics;
- Operations Management;
- Law
- Research Methodology

The above are regarded as core subjects. The following is a list of current electives

- Performance management
- Organisational Behaviour and Psychology
- Communications
- Marketing
- Education and training theory and practice
- Risk assessment and analysis
- Occupational health and medicine

These are electives have also been prepared for industry specific case studies such as civil aviation authorities, marine, rail, road, construction, petroleum, chemical, nuclear and so on.

It is anticipated that the initial programme will be available in 2003. The important task ahead is to show current Business Schools staff that safety management is not a specialist subject but a management subject. This can be achieved by the careful development of appropriate case studies that can bring out the relevant management theories and practice.

Conclusions

All managers and practitioners have to be aware of management theory and practice if they are to carry out their duties and responsibilities efficiently and effectively. There are already a number of opportunities for safety and health professionals to update themselves with current OSH theory and practice. However, unless this new found knowledge can be financed, implemented, monitored and evaluated within the context of organisational priorities and goals then the unacceptably high incident rates in our workplaces will continue to rise.

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