



**An Investigation to Assess the Implications of the
2005 Health Safety and Welfare Act on Middle
Managers within Deice Crystal**

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I hereby certify that this material, which I now submit for assessment for the programme of study leading to the award of B.A. (Hons) HRM is entirely my own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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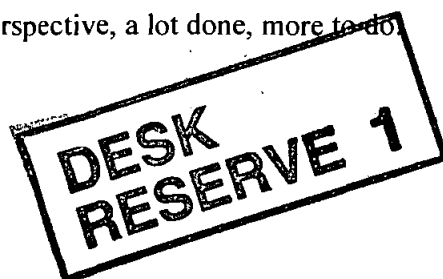
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ABSTRACT

Middle managers within Deice Crystal are the prime movers and shakers of ensuring that the organisation has both a proactive positive safety culture and a positive safety climate which is supported by both deeds and actions. This study sought to investigate the implications of the 2005 Health Safety and Welfare at Work Act on middle managers within the context of how these managers perceived their changing roles and responsibilities in light of this fundamental piece of health and safety legislation. The research consisted of quantitative data collected by means of a questionnaire. This data related both to Deice Crystal organisational details and that of middle managers perception of Health and Safety within the organisation in light of the 2005 Health Safety and Welfare at Work Act.

The main findings suggested that these middle managers viewed themselves as having an integral part to play in ensuring that Deice Crystal have in place best practice in terms of Health and Safety policies, procedures and structures. The results of the quantitative data research supported the viewpoint amongst many middle managers, that significant training interventions will be needed to enable middle managers to exercise their roles and responsibilities in an efficient and effective manner. From an organisational health and safety perspective, a lot done, more to do.



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CHAPTER ONE

**HISTORICAL OVERVIEW OF
HEALTH AND SAFETY
LEGISLATION IN IRELAND**

1.0 INTRODUCTION

The Safety, Health and Welfare at Work Act 2005 came into force on 1st September 2005. This legislation is the most comprehensive Health and Safety legislation ever passed in Ireland. The headline grabbing provisions of the SHWW Act 2005 are:

- Fines of up to €3m and/or up to two years in jail for serious breaches of health and safety regulations.
- The introduction of an on the spot fines system for certain safety offences.

Significant new provisions for managers with respect to duties imposed on them.

- Manage health and safety.
- Ensure so far as is reasonably practicable the prevention of risk to employees health from exposure to noise, vibration or ionising or other radiation or any other physical agent.
- Review risk assessments and safety statements when there has been a significant change as there is another reason to believe the risk assessment is no longer valid and following the review, to amend as appropriate.

For employers, the question is how can they show they are managing safety and health? The simple answer is by having a management system which is managed

by them and driven by them. In 2005 sixty three people were killed at work in Ireland. The primary purpose of this dissertation is to assess the implications of the 2005 Health Safety and Welfare at Work Act for middle managers in Deice Crystal with regards to their roles and responsibilities of promoting a positive safety culture and positive safety climate within the organisation. In essence those who create the risks must manage them.

1.0.1 Health and Safety Management Responsibilities

Where do health and safety management responsibilities fit into the managerial role in the workplace? Are all managers economically driven or do they see safety as a more important objective? Do they have a strong or weak sense of moral obligation to the employees under their supervision? Do they care about legal prosecution when decisions affecting the safety and health of employees are made? In essence the reality is that managers are made up of a combination of all of the above, because there are managers who feel passionate about safety and there are those who see it simply as an obstacle to getting the job done.

If management is purely economically driven perhaps it is because management theorists in the past only focused on extracting and manipulating the most production from the employee without any consideration for their safety, health and welfare whilst at work.

What have management theorists been telling us about management function since the beginning of the twentieth century?

Henri Fayol argues that management is about planning, organising, leading and controlling.

Henry Mintzberg suggests that management's function was interpersonal, informational and decisional.

Fredrick Hertzberg states that management is about getting work done through people.

Frederick Taylor focused on the specialisation of labour, increased productivity and profits, the development of calculating reward based on output and the use of time and motion study to determine optimal use of the organisation's resources.

It is therefore evident that the above respected management theorists focused solely on increased production/profit and the quickest way of achieving them. The difficulty with the above theories is that they ignore the human factor by looking at the person as an isolated and totally logical economic being and not as a social being and part of a group in the workplace requiring a safe and healthy working environment.

The law requires management to exercise responsibility for health and safety in the workplace, both under common law and statute law. In essence employers must ensure what is reasonable practicable in terms of not exposing employees to undue hazards and risks.

1.1 THE CODE OF HUMMURABI

Contrary to the belief of many, safety is not a new management responsibility. It can be found throughout recorded history. Hammurabi passed the first recorded safety legislation in 2200 BC in ancient Babylon. The "Code of Hammurabi" prescribed punishment of overseers (Department Supervisors/Managers) for injuries suffered by workers under their supervision. For instance, if a worker lost an arm due to an overseer's negligence or oversight, the overseer's arm was taken - to match the worker's loss. (Lechner,2002).

The "Code of Hammurabi" was carved into a stone pillar and it was originally erected in the temple of the Babylonian God Marduk for every citizen to see. The 282 paragraphs set out the legal framework for family law, criminal law, labour law and the rights of slaves etc.

In the 16th century BC, following the fall of Babylon the stone pillar was lost for centuries until 1901, when a French archaeologist found the pillar in the ruins of the Persian city of Susa. The pillar is now housed in the Louvre Museum in Paris. (Readers Digest Book of Facts, 1985).

1.2 BACKGROUND TO CURRENT SAFETY, HEALTH AND WELFARE AT WORK LEGISLATION IN IRELAND

Safety laws in the past were sometimes politically motivated. In the 1800's, Germany introduced the world's first Worker's Compensation Law. This was an attempt to suppress the rise of communism and to respond to worker dissatisfaction to unsafe working conditions. This was one of the first records of concern expressed by executives for safety in the workplace. (Lechner, 2002).

In Ireland as in Britain there are two main types of safety laws - Statutes Law and Common Law. Statutes law has probably existed since before the Code of Hammurabi in 2200 BC, common law originated in England and later spread to all English speaking countries. Common law is not a code of statutes, but follows judicial precedents set through decisions of ruling judges.

The development of English common law began after the Norman Conquest in 1066 when William of Normandy gained the crown of England. The limited local feudal laws were gradually replaced by the more widely applicable decisions of the Kings representatives who were sent from Westminster to carry out administrative work such as collecting taxes and they also adjudicated in disputes brought before them. The development of common law in the Royal courts was based on the decisions made by judges in settling disputes brought to them for resolution. It became a practice for judges to meet at Westminster to discuss decisions and local customs with other judges and to record judgements of previously decided cases, which they felt, were fair. This led to the term *stare decisis* ("let the decision stand"). This practice

provided a measure of guidance on how future judges might rule in similar cases. By 1250 it is believed that the formation of common law was complete in England and Wales, there was now a formal legal system in place, which was developed from varied and different customs and would continue to develop over the following centuries and spread to other countries. (Barker and Padfield, 1996).

The common law principals in Ireland, which have developed over the years, and apply to the safety at work of employees was known as “*the employers duty of care to employees*”, which applies to all employers in both the public and private sector. This meant that all employers had a duty to provide a safe working environment for employees. This duty is broken down into five individual headings:

1. To ensure a reasonably safe place of work.
2. To ensure reasonably safe plant and equipment.
3. To ensure reasonably safe systems of work.
4. To ensure reasonably safety-conscious (competent) staff
5. To ensure competent supervision.

The earliest statute law or sometimes referred to as legislation (i.e. legal rules made by a parliament) for the protection of employees that applied to Ireland was enacted in 1802. Its objective was for the protection of the health and morals of apprentices. The full title of the Act was “*an Act for the Preservation of Health and Morals of Apprentices and others employed in Cotton and other Mills, and Cotton and other Factories*”. This Act, by society’s standards today, was somewhat bizarre and even comical.

Some of the main provisions of the 1802 Act are listed below:

- A. Two quicklime washings annually.
- B. The admission of fresh air by means of sufficient number of windows.
- C. Suitable and sufficient clothing and sleeping accommodation (the standard of conditions can be judged from the requirements of the Act which stated that there should be no more than two apprentices to a bed).
- D. Pauper apprentices were prohibited from night work, and their working hours were limited to 12 hours per day.
- E. Apprentices to be instructed in reading, writing and arithmetic and the principals of Christian religion.
- F. Those who were members of the Church of England were to be examined annually by a clergyman, and be prepared at the appropriate age for confirmation.

Workplace inspectors were appointed under the 1802 Act, but records show that the legislation was poorly enforced and inspections were lax to say at least. In 1833 a national based inspectorate was set up with an initial four inspectors under the 1833 Factories Act.

It was not until 1844 when the first legislation to cover Safety, Health and Welfare as opposed to the previous Acts covering Health and Welfare only. The safety aspects of the 1844 Act were intended to create safer systems of work and safer plant and equipment, which in turn would create a safer place of work. Equipment such as mill gearing and the cleaning of machines in motion were covered in the 1844 Act.

After several amendments to the 1844 Factories Act, the 1901 Factories and Workshops Act and the 1911 Mines Act were the two main segments of safety legislation to be carried over to Ireland's independence in 1922. The 1901 Factories Act remained the only safety legislation covering factories in Ireland until the 1955 Factories Act, which was based mainly on the British Factories Act 1937.

The following decades brought with them some of the largest growths in sectors such as industry, farming, civil engineering and construction. These growths were due mainly to Ireland's entry into the European community in 1973, and to advances in technology, transport and infrastructure.

In 1980, the Factories Act 1955 was amended by the 1980 Safety in Industries Act. Following concerns and criticism from worker's unions and industry itself, claiming that the 1980 Safety in Industry Act did not go far enough to meet the needs of a modern workplace, the Irish government gave a commitment in 1980 to set up a commission of enquiry to establish what, if any, changes were required.

In December 1980 the Irish government appointed Donal Barrington, a High Court Judge, to chair the new commission. The aim of the new commission was to establish how best to improve the current safety, health and welfare at work legislation. This commission of enquiry was to be known as the Barrington Commission of enquiry.

When the 20 member Barrington Commission produced its report in 1983, it based most of its findings and the following recommendations on the 1972 Robens

committee report and its progeny i.e. the UK Safety, Health and Welfare at Work Act 1974. The Barrington report noted that the existing legislation only covered about 20% of the national workforce, it also identified problems, which were specific to the Irish context and took account of ideas on safety and health, which had emerged since the 1972 Robens committee report.

The Barrington report led to the drafting and enactment of the Safety, Health and Welfare at Work Act 1989. The 1989 Act reflected a lot of the principals contained in the British Safety, Health and Welfare at Work Act 1974 and the Northern Ireland Health and Safety at Work Order 1978. The 1989 Act also aimed to cover all places of work, unlike previous legislation. This meant that if a person was working in the public/private sector, on a farm or in an office they were now covered under the 1989 Act.

The main elements of the 1989 Act were as follows:

- Emphasis on the management of safety, health and welfare at work, by means of the requirement on all organisations to prepare a safety statement. Failure to have a safety statement may result in criminal prosecution and can also be used in a civil claim. Also a requirement that the safety statement be based on an identification of hazards and an assessment of risks to safety and health in the place of work.
- General duties were imposed on employers, employees, the self-employed, manufacturers, suppliers, designers and builders. Failure to comply with duties by any of the aforementioned could lead to a criminal prosecution.

- The right of employees to be consulted on safety, health and welfare and to select a safety representative.
- The establishment of an independent enforcement body, the Health and Safety Authority (its official title being the National Authority for Occupational Safety and Health) with new powers of enforcement.

The 1989 Act was implemented as framework legislation i.e. provision was made so that a Government Minister could add additional regulations to the Act without having to redraft a new Act. This meant that detailed regulations could be introduced taking account of technical progress and changes in occupations by way of ministerial regulations derived from several sources such as Approved Codes of Practice (ACOPS), which are issued by the Health and Safety Authority. Many of the ministerial regulations implemented to-date were European Directives on health and safety at work.

The most significant set of regulations to-date were the 1993 Safety, Health and Welfare at Work (General Application) Regulations. This is because the nine different areas covered were relevant to almost all places of work and this was achieved by the implementation of one set of regulations.

Areas covered under the 1993 General Application Regulations are as follows:

- General provisions (part II of the General Application Regulations)
- Workplaces (part III)
- Work Equipment (part IV)

- Personal Protective Equipment (part V)
- Manual Handling of Loads (part VI)
- Display Screens (VDU's) (part VII)
- Electricity (part VIII)
- First Aid (part IX)
- Notification of Accidents and Dangerous Occurrences (part X)

(Byrne, 2001a)

It is important to note that there have been many regulations, which have been implemented since the 1993 General Application Regulations (construction, chemical etc.), but for the purpose of this dissertation it is not necessary to discuss them in any detail. However, the significance of the regulations, in improving health and safety standards within the workplace must be kept in mind throughout the authors journey of discovery.

The Health Safety and Welfare at Work Act 2005

The main purpose of the Act was to consolidate existing legislation and set out the ground rules for the management of occupational safety and health in Ireland for the next 15 years. It aims to mainstream the measurement of health and safety at work into all other management functions. It is the most progressive piece of health and safety legislation in Europe and was initiated by the Irish Government and the Health and Safety Authority and not by a European directive.

1.3 HEALTH AND SAFETY MANAGEMENT

Companies in the past ten years have become increasingly aware of the importance of providing a safer and healthier workplace for employees. In reality no business can ensure a total freedom from accidents at work. However, a safety policy and a system for managing health and safety in the workplace is a valuable business asset in a rapidly developing claims culture.

Employer's duties to employees are established in both common law and statute law. An employee is entitled to bring a claim for personal injuries against their employer and in most, if not all cases, it would have cost a lot less to prevent the accident in the first place than the amount which the court will award in damages not to mention legal fees. Many cases are now settled out of court for what is known as nuisance value. Briscoe (2002) suggests that this practice has a real draw back for employers, as it is believed to create a precedent within the workplace. The real fear of employers is that in this "claims culture" one claim breeds another and the only real way to tackle the problem is to tackle the accidents that are waiting to happen.

Deloitte & Touche published a report on the evaluation of insurance costs in Ireland. The report focused on the experiences of a company called Waterford Stanley. The company manufactured oil and solid fuel cookers for household kitchens. The report demonstrated the success of the Waterford Stanley Safety Management System. In 1985 Waterford Stanley had about 25 accidents per year, with an average absenteeism of about 16 weeks per accident and their employers liability insurance premium had reached £200,000 per year. The company decided in 1989 that it had to change its

approach to health and safety as the accident rate had reached 5.4%. The company put in place a safety management system by introducing the following initiatives:

- Allocation of health and safety responsibilities to managers.
- Identification and rectification of hazards in the workplace.
- Training and consultation.
- Allocation of people, money and resources.
- Implementation of a safety statement.
- Caring for injured employees.
- Payment of full net wages to employees due to accidents at work.
- Introduction of self insurance.
- Management of employers liability claims
- Use of private investigators.

In 1994 the company has no employers liability claims for previous three years, absenteeism due to accidents was down to 0.2% and there were fewer serious accidents. Deloitte & Touche, (1996)

1.4 THE CURRENT STATE OF WORKPLACE HEALTH AND SAFETY IN IRELAND

In 1996 the European Foundation for the Improvement of Living and Working Conditions published a major study on occupational health and safety strategies in Europe. The Irish contribution (McCarthy and Byrne, 1996) assessed and identified areas for improvement in the national health and safety strategies.

- The report highlights the fact that, due to a poor statistical database, it is impossible to draw sound conclusions about the level of accidents in Irish industries. There is a need to generate data, which could provide employers, government departments and trade unions with a realistic element of the cost of accidents and ill-health at work.
- Insufficient resources, both at state and company level, make it difficult to enforce and implement legislation on health and safety. It is also believed that the HSA is under funded.
- The report notes the serious problem of under reporting of accidents in Irish companies. This hinders the analysis of accident causation and reduces the potency of attempts to prevent future accidents.
- Organisations are not receiving sufficient support in developing sound safety management systems.

- Existing legislation and the HSA place too much emphasis on the physiological aspects of safety, to the neglect of social and psychological dimensions of health and safety.
- Limited resources are available for research into health and safety issues at work. The Irish HSA noted that it couldn't match the demand for research and information among the public and employees.
- These issues represent serious limitations in the ability of Irish industry to manage health and safety effectively. They also represent a challenge and offer direction for future improvements.

1.5 PRESSURES FOR THE IMPROVEMENT OF HEALTH AND SAFETY MANAGEMENT WITHIN ORGANISATIONS

As already stated, there are a number of pressures on companies to improve their approach to managing health and safety and towards reducing the number of workplace accidents and injuries. The health and safety agenda can be interpreted as being pushed forward by four independent pressures, (Grogan, 1998). These are economic concerns, legislative developments, moral obligations and the need for strategically integrated overall business strategies.

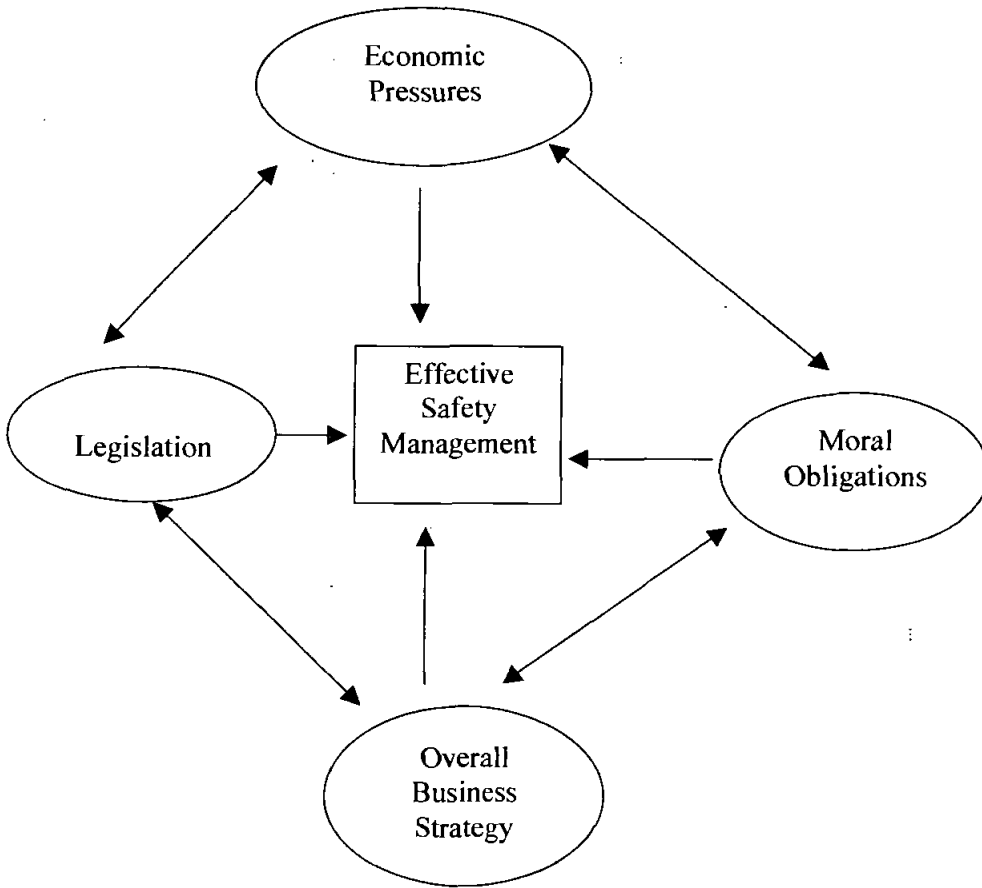


Figure 1 - The Four Main Pressures for Reform of Existing Health and Safety

Work Practices

Grogan, (1998)

1.5.1 Economic Aspect of Safety Management

Organisations have always been concerned with “the bottom line” and maximising their profit margins. The incidence of accidents in the Irish construction industry has grown at a worrying rate throughout the years of economic boom and has attributed to “cutting corners” on safety issues. However, short-term production gains generally prove to be extremely expensive in the long-term and spiralling rates of accidents can cripple a business and have wider negative effects throughout the economy.

Briscoe (2001) suggested that the estimated cost of compensation claims for occupational accidents in Ireland is £400 million. This includes such costs as compensation, legal fees, insurance and medical costs. There are in addition many hidden costs, including the cost of production, administrative costs associated with accident investigation, replacement staff costs, sick pay schemes and other miscellanies. The consequences of occupational accidents can also result in failure to fulfil orders, meet deliveries and loss of goodwill. There can also be a loss of valuable skills, which requires expensive retraining as well as loss of morale amongst employees. In fact, Irish small businesses have come under increased pressure in recent times as insurance premiums have soared.

1.5.2 Moral Obligations

While maintaining health and safety standards is crucial from an economic point of view, good safety management is also a moral imperative. Providing employees with a safe place of work and trying to minimise the rate of occupational accidents represents good corporate ethics and reflects concern and consideration for the workforce. In essence “*employees who come to work with their bits and pieces intact are entitled to go home to their families and loved ones with their bits and pieces intact*”. (O’Brien, 2000)

So strong is the moral obligation that it is actually enshrined in the oldest law of the land “Common Law” which imposes a “duty of care” on a master (employer) to his servant (employee). In this respect the courts have determined that employers must provide a safe system of work, ensure that fellow workers are competent, provide safe equipment and effective supervision, and a safe place of work. Many organisations realise that it is in their own interest to adhere to the health and safety guidelines and best practice. When the organisation is generally seen to show an interest in the welfare of employees, this interest is recognised, resulting in a more committed workforce and greater level of job satisfaction. Indeed, companies with a poor approach to health and safety may suffer from a negative image and in some circumstances other businesses may be reluctant to do business with them. (Briner, 1996).

1.6 AN EXAMINATION OF THE REAL COST OF ACCIDENTS IN IRELAND

The purpose of measuring the cost of accidents whether it be comparing one department/organisation, with another department/organisation, or even on a larger scale where the cost of accidents are measured in a particular industry all serve the same purpose i.e. to take a snap shot in time. This can then be used to establish which areas or managers in the organisation are not performing as they should and to establish ways to control, reduce and eliminate unnecessary accidents and costs. After all, what gets measured gets done, and if management can see an economic benefit their interest will be aroused. In reality the economics of the situation is what drives arousal in today's ever-increasing competitive business world.

The Táiniste Mary Harney set up a Personal Injuries Assessment Board (PIAB) on Friday 24th October 2002, on an interim basis initially until legislation is passed to put it on a statutory footing. It is not designed to reduce levels of compensation but will instead bring about reductions in the cost of delivering compensation. Its assessments will be non-binding with either party allowed the right to proceed to the court after the assessment has been made. The PIAB will compile a database of court awards to-date and develop and maintain a mechanism to ensure that the assessments are in line with court awards. Kearns, (2002).

Ian Stuart of the Irish Insurance Federation (IIF) highlights the fact that the continuing rise of personal injury claims in Ireland has lead to employer liability premiums increasing by as much as 20% in the past year (2001-2002) to just over €3.2 billion.

The IIF claims that the factors contributing to the increase in insurance premiums are outside the insurer's direct control. The IIF states that insurance premiums will continue to rise and this will have a knock-on effect on the economy as a whole unless there is legislative and judicial reform, enhanced safety in workplaces and improved enforcement of safety regulations by the HSA. (Stuart, 2001)

The IIF identifies legal costs as being one of the main issues that needs to be tackled. In 2001 the total cost of personal injury claims (compensation only) was approximately €1.05 billion with an additional €440 million spent on legal fees. If the Personal Injuries Assessment Board (PIAB) was introduced the IIF estimate that the legal fees would be at least halved to €220 million.

One of the most interesting items in the report commissioned by the Táiniste prior to the setting up of the PIAB is the table setting out average awards and information on legal costs (see table 1). The average total compensation paid in employers liability case in Ireland is £21,457.17, compared with £1,630.04 in England, while the average paid in public liability cases is £11,773.14 in Ireland, compared with £908.33 in England.

Table 1: Types of Injury and Average Awards

		Ireland		England
Type of Injury	No. Claims	Average General Damages £IRE	No. Claims	Average General Damages £STG
Spine & neck	108	£13,841.70	120	£1,531.79
Lacerations	5	£ 8,140.00	5	£2,510.00
Eye	5	£35,275.60	0	-
Contusions, etc.*	13	£11,226.15	21	£1,016.67
Leg	31	£23,284.10	10	£1,591.90
Arm	18	£14,194.44	7	£2,985.71
Hearing	1	£ 3,000.00	4	£1,219.80
Trunk	18	£17,388.56	4	£1,837.50
Sickness	5	£11,600.00	2	£ 9.00
Death	1	£11,430.00	0	-
Head	29	£ 5,688.88	1	£ 150.00
Psychological	1	£ 8,500.00	1	£ 150.00
*Contusions, minor scars, rash or minor burns				
Source: Health and Safety Review (2001)				

From a safety professional's point of view the question is, what will be the PIAB contribution to enhancing occupational safety in their workplace? The Health and Safety Review suggests that if the "implementation group" were to make a decision that each year the PIAB would issue a report dealing not just with the levels of compensation awarded to plaintiffs, but also to publish detailed case studies on how

accidents were caused, in turn safety practitioners could apply the knowledge made available in the effort to reduce accidents.

“Then the answer to the question would have to be a resounding “yes”. The PIAB would then be not just a cost control mechanism, but a weapon in the battle for safety”. (Health and Safety Review, 2001)

Are managers not paid to manage health and safety as well as production? How managers behave is influenced greatly by the culture and climate within the organisation itself. Therefore culture and climate are the main influences on how effective and efficient managers are in relation to performing their health and safety role and carrying out their responsibilities, because the culture and climate of an organisation shapes the behaviour of the individuals within the organisation.

1.7 SUMMARY

In this chapter, the historical evolution of occupational health and safety in Ireland and the relationship of managerial responsibility for safety in the workplace since the time of Hammurabi through to the present day have been discussed in detail. The purpose of such a discussion was to demonstrate that managerial responsibilities for health and safety in the workplace is not a new concept.

The cost of compensation paid to employees by companies has also been examined to demonstrate that poor management of health and safety in the workplace has fuelled the rising cost of insurance. This, in turn, has had a knock on effect on the Irish economy.

Chapter one (the historical evolution of occupational health and safety in Ireland) demonstrates the legal responsibilities placed on management for the implementation of safer working conditions and the driving forces for the reform of existing health and safety work practices within Irish industry.

The evolution of occupational health and safety legislation has and is influencing management's behaviour towards safety. The purpose of this dissertation is to assess the impact of the 2005 HSW Act of middle managers within Deice Crystal, in terms of ensuring as far as reasonably practicable a safe place, safe system and safe person organisation exists.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

It has been acknowledged by many leading occupational professionals, that there are a number of factors, features or characteristics of organisations that influence the way people behave in their workplace particularly with regard to occupational safety behaviour. Organisations continually endeavour to control both individual and group behaviour amongst their workforce. This control may be exercised through supervision, training, reward structures, disciplinary action and management development systems. Stranks (1994) suggested that the organisations that are the most successful in their occupational health and safety operations and practices are those that incorporate key features or characteristics.

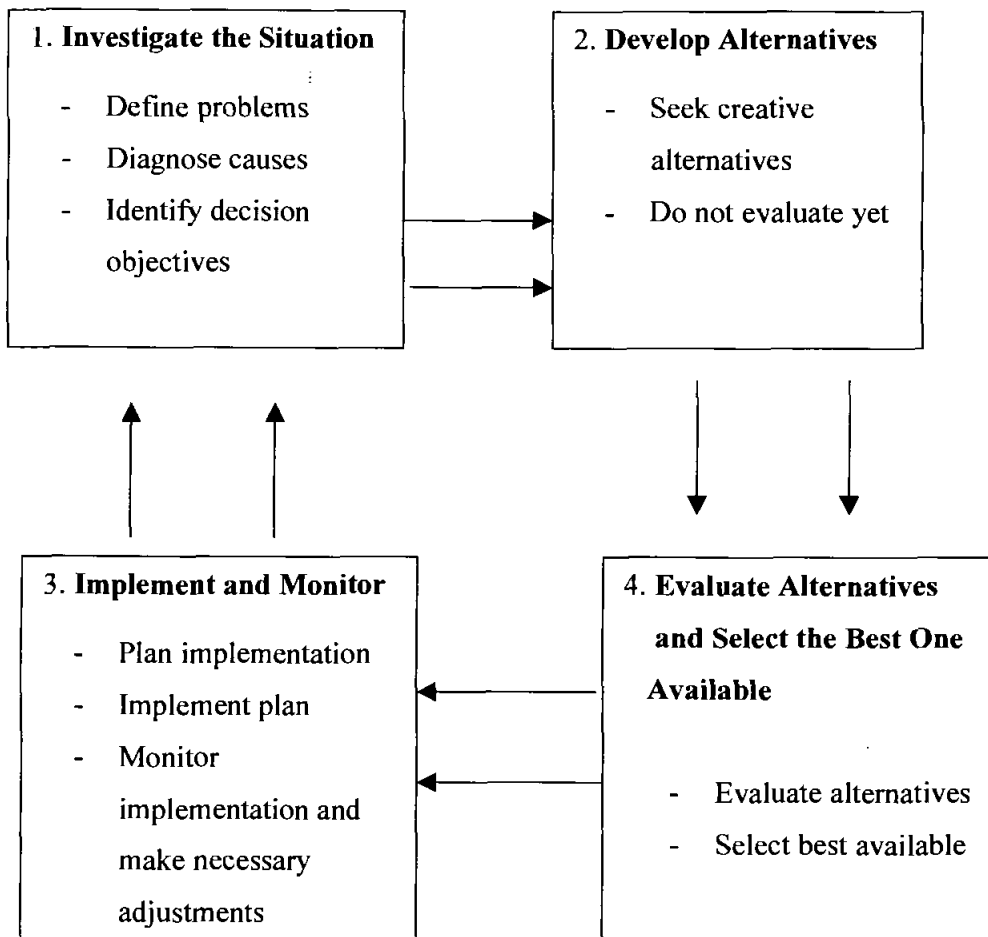
The purpose of this chapter is to identify what these key factors or characteristics are, from which analysis may be given to how employees occupational safety behaviour may be influenced because of these organisational features or characteristics. Organisations that are serious about promoting best occupational safety practices within their workplace, should do so on the basis of knowledge and understanding of how the organisation itself can influence the way in which their employees behave from an occupational safety perspective. Without this knowledge and understanding, organisations will be severely hampered in their continual quest to ensure that their employees behave in a safe occupational manner.

2.1 Health and Safety Management in Practice

Health and safety management is not different from other forms of management. It covers:-

- a) The management of health and safety operations - planning, organising, controlling, staffing, motivating, objective setting, establishing accountability and the setting of policy.
- b) Motivating managers to improve standards of health and occupational safety performance.
- c) Measurement of health and safety performance on the parts of individuals and specific locations.

Figure 2 - The Rational Decision Making Process of Managers



Source: Management (1995)

Management is concerned with employees at all levels of the organisation and human behaviour, in particular personal factors such as attitude, perception, motivation, personality learning and training. Communications brings these various behavioural factors together. The management of occupational health and safety is also concerned with organisational structures, the climate for change within an organisation, individual roles within the organisation and the problems of stress which takes many forms. Therefore, in an organisations continual quest to promote

efficient and effective occupational safety practice, the following questions need to be asked:

- How effective are managers at managing occupational health and safety?
- Is their attitude to occupational health and safety of a proactive or reactive nature?
- How do their attitudes affect the development of health and safety systems?
- Do the managers perceive health and safety management as an integral part of their jobs or as something “shoved” on them by the organisation.

2.1.1 Management Approaches to Occupational Health and Safety

Management approaches to occupational health and safety vary considerably. These approaches can fall into different categories which are as follows:

Legalistic - “Comply with legislation, but no more”.

Socio-Humanitarian - Considering the human resources aspects: people are important.

Financial-Economic - All occupational accidents cost money. Most organisations are good at calculating the costs of health and safety, e.g. machine guards, safety training etc., but not good at calculating the losses associated with accidents, sickness and safety performance. These losses tend to get absorbed in the operating costs of the business.

With the greater emphasis on the human factors appropriate to occupational health and safety, there is a need to actually identify those organisational characteristics which influence safety-related behaviour. Stranks (1994) suggested these include:

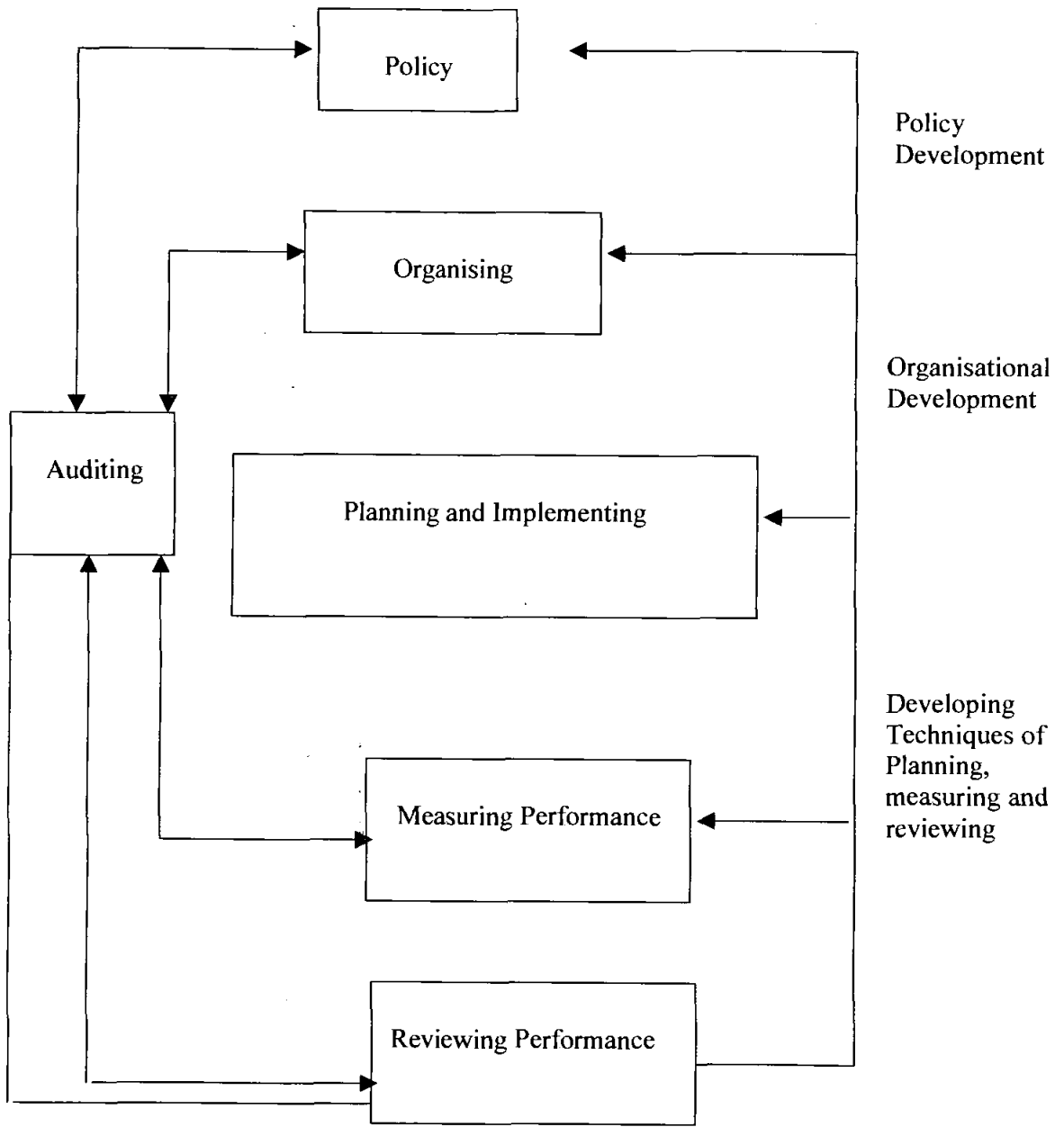
- a) The need to produce a positive climate in which occupational health and safety is seen, by both management and employees as being fundamental to the organisations day-to-day operations, i.e. they must create a positive safety culture.
- b) The need to ensure that policies and systems which are devised for the control of risk from the organisations operations take proper account of human capabilities and facilities.
- c) Commitment to occupational health and safety is shown at the top of the organisation and cascaded through successive levels of same.
- d) Demonstration by senior management of their active involvement, thereby galvanising managers throughout the organisation into action, and
- e) Leadership, whereby an environment is created which encourages safe behaviour.

2.1.2 Key Elements of a Successful Health and Safety Management

Health and safety management is as diversified as it is dynamic. However, there are a number of areas which are significant.

- Organisational statement of occupational health and safety policy.
- Clearly defined procedures for occupational health and safety monitoring and performance measurements.
- Clear identification of the safety objectives and standards which must be measurable.
- A system for improving knowledge, attitudes and motivation for increasing individual awareness of health and safety issues, responsibilities and accountabilities.
- Procedures for elimination potential hazards in the work environment.
- Measures taken by management to ensure legal compliance.

Figure 3 - Key Elements of Successful Health and Safety Management



Feedback loop to improve performance

Source: HMSO (1980)

Michael Armstrong (1977) in his book, “An Employers Guide to Occupational Health and Safety Management”, argued that senior management within organisations should not be content with just meeting occupational safety standards as laid down by legislation. They should strive to excel their own standards beyond the minimum legal requirements, occupational safety as history has shown can never be compromised. If management has little or no intention of becoming involved in occupational safety, then any expressed commitment to it is unlikely to be taken seriously by others within the organisation, which will more than likely result in the employees not being motivated to use safety working practices.

2.2 HEALTH AND SAFETY CULTURE AND CLIMATE

Occupational health and safety performance can differ from organisation to organisation. One may ask, why is it that organisations may repeatedly turn in better performances than others each year. One of the most fundamental factors affecting occupational safety performance is what is commonly referred to as “safety culture”. Every organisation has a safety culture. The difference is whether the culture espouses positive occupational employee safety behaviour or negative behaviour. There have been many definitions of the term “safety culture” and it still remains the subject of numerous academic papers. One definition of health and safety culture which has received widespread acceptance from the safety professionals is that from the UK’s Advisory Committee (1993) Report on “Organising for Safety within Nuclear Institutions”.

“The safety culture of an organisation is the product of individual and group values, attitudes, perception, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation’s health and safety management”.

The Confederation of British Industry Report (1990) on developing a safety culture identified several features from its study which are essential to a sound safety culture. An organisation wishing to improve its safety performance will need to judge its existing practices against them. These features are as follows:

1. Leadership and commitment from the top which is genuine and visible. This is the most important feature.
2. Acceptance that a long-term strategy requires sustained effort and interest.
3. A policy statement of high expectations and conveying a sense of optimism about what is possible, supported by adequate codes of practice and safety standards.
4. Health and safety should be treated as other corporate aims, and properly resourced.
5. It must be line management responsibility.
6. “Ownership” of health and safety must permeate through all levels of the workforce. This requires employee involvement, training and communication.
7. Realistic and achievable targets should be set and performance measured against them.
8. Incidents should be thoroughly investigated.
9. Consistency of behaviour against agreed standards should be achieved by auditing and good safety behaviour should be a condition of employment.
10. Deficiencies revealed by an investigation or audit should be remedied promptly.

11. Management must receive adequate and up-to-date information to be able to assess performance.

Source: CBI (1990)

Producing such as organisational culture requires clear visible management commitment to occupational safety from the most senior levels within the organisation. This commitment should not just be a formal statement, but be evident in the day to day activities of the enterprise, so that it is readily known and understood by employees.

2.2.1 Promoting a Proactive Organisational Safety Climate

The term health and safety climate is often used to describe the tangible outputs of an organisation's health and safety culture as perceived by individuals or work groups, at a particular point in the time, i.e. "the way we do things around here". For example, how front line managers view the importance their organisation gives to health and safety matters relative to production or quality, or how committed they believe their supervisors or subordinates are to health and safety in their workplace. The prevailing health and safety climate within an organisation provides a practical focus for measurement, and can provide some insight into the organisation health and safety culture. The attitude of a strong personality at senior management level within the organisation may either have a beneficial or adverse effect on the internal safety climate. It is conceivable then, to suggest that other employees within the organisation may be influenced by this person (senior management) example.

In promoting a proactive safe working climate, it is essential to have an effective system for monitoring safety, that identifies, investigates and corrects deviations. This can be through the operation of safety audits, safety inspections or walk through surveys. There should be clearly defined standards and goals that are capable of being monitored, and effective systems for reporting and investigating incidents, near misses and unsafe situations. The introduction and operation of such systems requires considerable effort by managers and only by allocating adequate resources can they be confident that failures will be prevented or controlled. Occupational safety procedures soon fall into disuse if there is no system for ensuring that they are followed. Often is the case, that procedures lapse because of management neglect or employees are discouraged from working them by peer groups or other pressures such as production or quality targets. Where managers become aware of such deficiencies in safety procedures, but take no action to remedy them, the workforce will readily perceive that such actions are condoned. Individuals may not understand the relevance of procedures or appreciate their significance in controlling risk. Sometimes, procedures are faulty, irrelevant or lack credibility. When occupational accidents happen, managers cannot blame individuals for taking shortcuts that seemed safe and were allowed to become routine if they have not explained the importance of or monitored procedures they originally laid down.

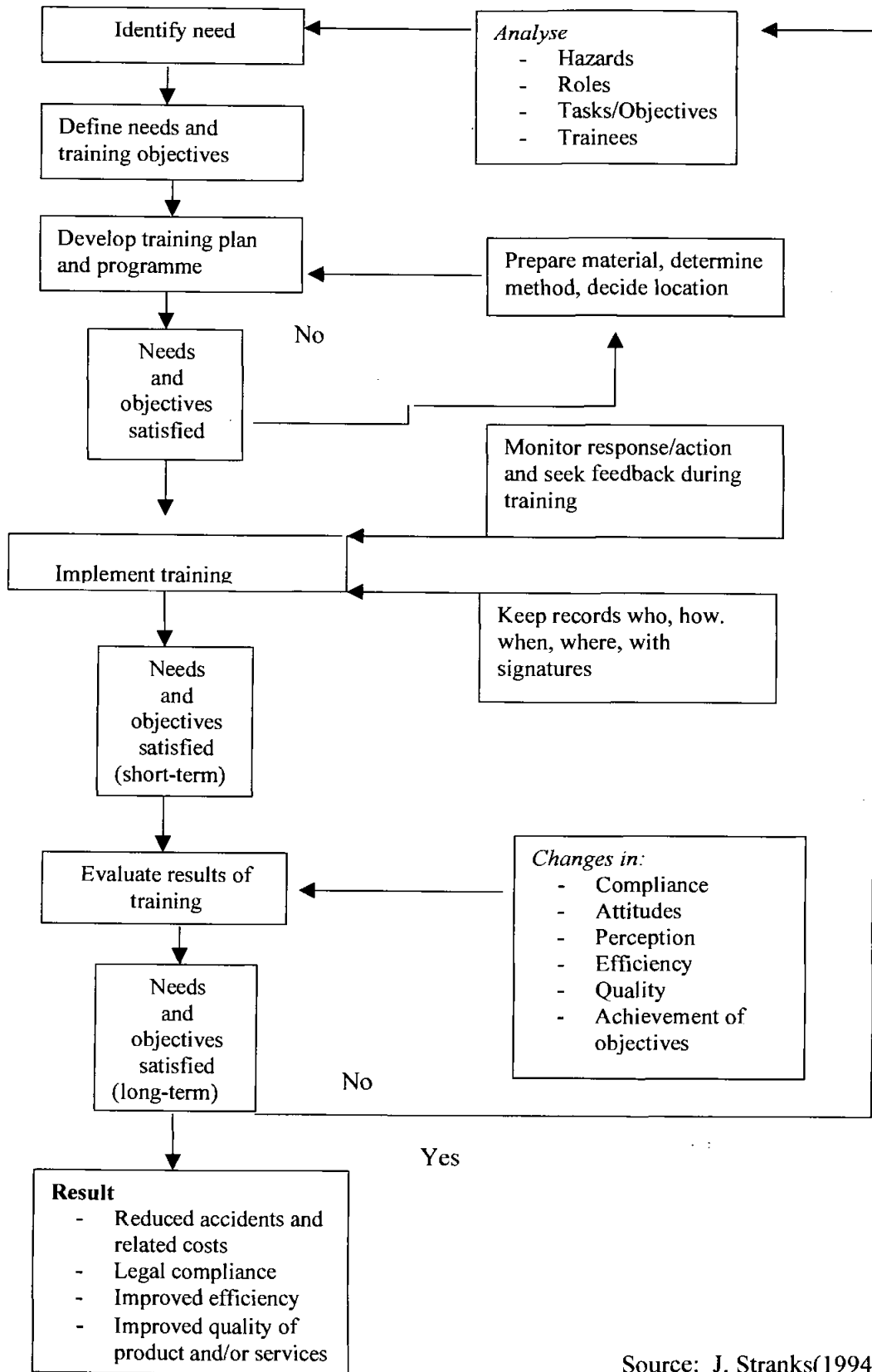
2.3 TRAINING AND COMMUNICATION FOR HEALTH AND SAFETY

Training has been defined by Buckley (1989) as “the systematic development of attitude, knowledge and skill patterns required by an individual to perform adequately a given task”. Health and safety training is an ongoing process that should take place at varying stages of an individuals career within an organisation and for various reasons, such as:

- To create confidence in trainees so that they can acquire diverse skills through application and training,
- To help promote better safety performance and moral, and
- To help facilitate employees understanding and acceptance of change.

In all cases, management should assess the training needs of the workforce and implement the various training processes. A training need exists, when the optimum solution to an organisations problem is through some form of training. For training to be effective, it must be integrated with the selection, placement and promotion policies of the organisation. Selection, however, must ensure that the trainees are capable of learning what is to be taught. Promotion must ensure that the promoted person is fully aware of his/her responsibilities in terms of health and safety at work. The identification of training needs, particularly in relation to occupational health and safety is an important task in any organisation. This identification should form a part of a systematic approach to ensuring that the safety training is identified, delivered and assessed in an efficient and effective manner (see Figure 4).

Figure 4 - The Training Process: A Model for Health and Safety



Source: J. Stranks(1994)

Health and safety training should emphasise the following themes:

- *The importance of distinguishing between*
 - Accident and injury
 - Prevention and protection
- The link between safety performance and operational efficiency, and that between accident prevention management and company management as a whole, must be recognised,
- Health and safety training should be given at each stage of a persons career, for example at induction stage, prior to the introduction of new processes, substances, work equipment and legal requirements.
- The concept of training must be extended to developing peoples full potential so that the organisation can satisfy human needs by effective utilisation of manpower. In order to ensure effective utilisation of manpower, there is a need for regular health and safety training of all staff, from the managing director downwards.

Health and safety training is a significant feature of the accident prevention process. It may be argued that organisations undertake regular health and safety training will have a better safety record, better informed staff, which invariable leads to employees having a positive perception of health and safety within their workplace.

2.3.1 Communication with Employees

Safe work is essentially a collaborative effort, involving all levels of employees. It hinges critically on effective communication. Safety information needs to be given in an exceptional clear and comprehensive manner.

There have been many definitions of communications and in general terms it may be described as:

“The exchange of information and the transmission of meaning - the very essence of an organisation”.

Katz (1966)

Simon (1958) defined an organisation as:

“The complete pattern of communication and other relations between human beings”

Many forms of communication operate within organisations. That which is officially referred to as “formal” communication, while communication which is unofficial, unplanned and spontaneous can be classified as “informal” communication. A communication system can transmit information upwards, down and sideways within an organisation on a one way or two way basis. When communication is one way there is no opportunity to receive a reaction or response from the receiver of the message, but in two way communication the receiver can provide a response and is encouraged to do so. The purpose of communication within an organisation is to provide its people with the up-to-date information they require to function effectively. However, this information can take many forms -

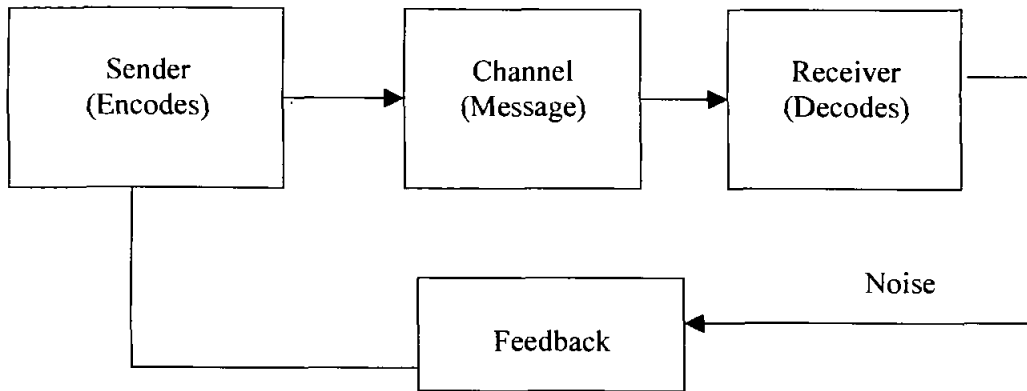
presentation of facts, a corporate image campaign or maybe a written notice, warning employees to wear safety glasses.

Greenbaum (1974) suggested that managers should have four objectives in mind when communicating:

1. *Information*: Straightforward presentation of facts and figures, for example occupational accidents.
2. *Innovation*: Seeking to change aspects of behaviour in a certain direction, for example, regular meeting with employees to ensure that they fully understand the need to be safety conscious whilst working.
3. *Regulations*: Making sure everyone conforms with the established rules, i.e. safety rules and guidelines for departments.
4. *Integration*: Making the employee feel that he/she is a useful member of the workforce and part of an organisation he/she can identify with.

Communication is the lifeblood of an organisation and because of this it is important that managers are skilled in the art of communicating. Communications of the right kind has a vital part to play in health and safety as a participative process. The right kind of communication starts first of all with gaining an understanding of what is the communication process. As this knowledge will help managers to be conscious of communicating in an effective and efficient manner.

Figure 5 - Modelling the Communication Process



This process starts with the sender placing a message in a particular form; a process called encoding. Next the message is transmitted through some channel oral or written - using a medium - telephone, memorandum, fax, etc. More than one channel may be used to get the message across. For effective transmission, it is essential that the channel is selected. Finally, at the other end the message is transmitted to the receiver, who has to make sense of it. The decoding process involves trying to translate the message into the receivers own language and patterns of understanding. It was Plato who first remarked that one has to talk people in terms of their own experiences. The whole communication process can be hindered by the presence of “noise” in any part of the system. “Noise” is used in the sense of any physical or mental distraction which may hinder communication. The objective of the feedback loop in (Figure 5) is to ensure whether the message has been properly understood. This information can be used to make changes in the next communication if need be.

Communication is the crucial link in successful integrative management. An essential requirement is that of channels of communication remain open and used. Effective communication is also an important feature of health and safety practice. Lack of communication is commonly a contributory factor in accidents and other forms of adverse incidents. Barriers to effective communication such as source credibility, lack of attention, poor planning, and situational factors must be overcome. Employees perception to health and safety are greatly affected either in a positive or negative manner depending on how successful an organisation through its managers communicate, not just production and quality matters but as important matters relating to health and safety policies and procedures in the workplace. For example, if a manager is communicating safety instructions to his employees, whilst at the same time these employees know that this manager himself will not follow these safety instructions, then the communication process will fail not because of what is being communicated but because who and how it is being communicated. The source of the communication lacks credibility.

2.4 PRINCIPALS OF ACCIDENT PREVENTION

Management on behalf of their organisations are responsible for ensuring that occupational accidents are minimised as much as humanely possible. It is therefore important for management and employees alike to have a knowledge and understanding of what an occupational accident in terms of definition, cause, effects and what their role is in devising and implementing future occupational accident prevention strategies. It is conceivable that employees who have a fundamental grasp of why occupational accidents happen, will understand the importance of

positive safety behaviour and consequently may be more willing to accommodate organisational safety policies and procedures. It may now be appropriate to closely examine what the building blocks of accident prevention are, because it is these which will provide the basis of occupational accident prevention strategies.

What is an Accident?

There have been many definitions of accidents put forward in occupational safety magazines, books and journals. An early definition propounded by Lord Mac Naughton in the case of *Fenton V. Thorley and Co. Ltd* (1903) was one where he defined an accident as:

“Some concrete happenings which intervenes or obtrudes itself upon the normal course of employment. It has the ordinary every day meaning of an unlooked - for mishap or an untoward event, which is not expected or designed by the victim”.

This definition refers to an event occurring to a worker that was an unlooked - mishap having a degree of unexpectedness about it. However, taking into account the axiomatic statement above, this definition would seem to be somewhat narrow as it is only concerned with accidents resulting in injury to employees.

In occupational safety management terms, an accident is a random multi-factor event which causes a person or persons to fail to cope with their environment. Likewise, a dangerous occurrence is said to take place when similar random multi-factor events come together in such a way as to cause either a non-injury accident to happen or one

that stops short of an accident occurrence taking place. The International Labour Organisation (ILO) has classified industrial accidents according to type of accidents.

Suchmann (1961) produced three indicators of an accident:

- A low degree of expectedness
- A low degree of availability
- A low degree of intention

Bamber (1980) viewed accidents in the following way:

- All accidents are not incidents
- All incidents are not accidents
- All injuries result from accidents
- All accidents do not result in injury

Stranks (1991) defines an accident as follows:

“An accident is an unplanned and uncontrolled event in which the action or reaction of an object, substance, person or radiation results in personal injury or the probability threat”.

It is worth noting that many academics and safety practitioners now prefer to use the term “incident” as opposed to “accident”. The rationale behind doing so, is that it eliminates the idea of “or the possibility thereof”, which is an important component of many definitions. An incident is defined as “an undesired event that could (or does) downgrade the efficiency of a business operation”. From research of many accident

definitions, from general, legal, medical, scientific and occupational safety literature, it appears that the ideal accident definition should have two distinct sections; a description of the cause(s), and a description of the effects.

Causes should include; unexpectedness or unplanned events, multi-casualty and sequence of events, while the effects should cover: injury, disease, damage, near miss and loss.

Based on the definitions found, Bamber's (1980) definition was favoured which stated:

"An accident is an unexpected, unplanned event in a sequence of events, that occurs through a combination of causes; it results in physical harm to an individual, damage to a property, a near miss, a loss or any combination of effects".

Summarised simply, accidents are concerned with:

- (a) The objective danger at a particular point in time associated with a specific machine, process, system of work or substance used at work, and
- (b) The subjective perception of risk on the part of the individual, which varies according to the features mentioned above, and also according to behavioural factors, such as their level of arousal prior to risk arising, motivation, memory, personality and attitude.

2.4.1 The Pre-Accident Situation

Accident prevention strategies should be directed at bringing about a reduction in the objective danger in the workplace, and second, increasing the perception of risk on the part of individual workers. This brought about in the first case by the use of safe place strategies and in the second case by safe person strategies.

Safe Place Strategies: The principal aim of a safe place strategy is to bring about a reduction in the objective danger of the workplace through measures such as machine guarding, improvements in the working environment to reduce the risk of occupational disease, or the design of safety systems of work.

Safe Person Strategies: These are concerned with protecting the individual in a specific situation where a safe place strategy may not be wholly appropriate or possible to implement. They depend on the individual conforming to certain prescribed standards, i.e. wearing of personal protective equipment whilst engaged in a particular work activity.

2.4.2 Post-Accidents Strategy

Accidents are usually unforeseeable. This may be attributed to insufficient research into hazards: or that “it cannot happen to me” philosophy. Human error on the part of management or manufacturers to provide information can quite easily lead to an occupational accident.

Saunders (1992) suggested that post accident strategies can be classified in the following way, and posed the following questions:

(a) *Disaster/Emergency Planning*

Do managers know what to do in the event of a disaster or emergency?

(b) *Ameliorative Strategies*

Do managers know how to minimise the effects of occupational injuries quickly and effectively following an occupational accident?

(c) *Feedback Strategies*

There is much to be learned from an occupational accident. This learning takes place through accident investigations. Are managers competent enough to carry out an accident investigation? Saunders suggested that the answers to the questions he posed formed the bases of identifying training needs for managers in relation to the pre and post accident management strategies.

There is an old saying that “prevention is better than cure”. This concept is just as applicable to occupational safety management. The reality of the situation is that in a working environment, accidents will happen no matter how many preventions are in place. The main focus of occupational accident strategies is to reduce accidents as much as humanely and practically possible, with the underlying philosophy that one accident is one too many.



Saunders (1992) argued that organisations can be pro-active to occupational safety if they have managers who are competent in limiting occupational accidents through pre and post accident investigations as described previously. The expertise that managers received from occupational accident investigations will help them and their organisations in planning future occupational prevention accident strategies, which will be the backbone of management actions to reduce occupational safety accidents. These occupational prevention strategies will be guided by management's understanding of the accident causation process. An integral part of this understanding is to clearly understand what hazard, risk and dangers, are because these terms have an important role to play in occupational prevention strategies.

2.5

THEORIES OF ACCIDENT CAUSATION

Why do occupational accidents happen? This is a common question, and one that has resulted in much research. Occupational safety specialists and academics alike have often wondered, can the cause of accidents be such that a general pattern of the accident phenomenon will emerge? The theory of the accident causation process can be written if most of the components of the accident process can be discerned and if the contributions factors leading to the accident can be discovered. It is worth noting that presently there exists a wide array of accident theories. However, it is possible to group these theories into a number of categories: domino and management theories, behavioural theories and physiological theories. These theories will now be considered in some detail.

2.5.1 Domino or Management Theories

H.W. Heinrich (1930) presented a set of theories which he called the axioms of industrial safety. The axioms which Heinrich laid down have held up well even by today's standards. These axioms are widely used by managers to deal with important occupational safety issues such as:

- The theory of accident causation
- The interaction of employees and machines
- The relationship of frequency to severity of accidents
- The underlying reasons for unsafe acts
- The relationship of accident control to other organisational functions
- The responsibility of safety management within the organisation
- A focus on the costs of accidents

One of Heinrich's axioms was the "Domino Effect" approach to occupational accidents.

The Domino effect approach identified five major factors in an occupational accident sequence.

1. The social environment
2. Fault of the person
3. Unsafe act
4. Accident
5. Injury

These factors were compared to five dominoes standing on edge in close proximity to one another. The fall of the first domino participates the fall of the remaining four. The centre of the domino (unsafe act) is the focal point in that, if the unsafe act is removed then an occupational accident will not occur. An occupational accident is considered only as an event in the chain, where other determining factors exist, prior to the accident occurring. Occupational safety management is concerned with the removal of these factors in order to prevent accident or injury. Bird (1974) develops the theory further by updating the domino sequence to read:

1. Management (lack of control)
2. Origins (basic causes)
3. Symptoms (immediate causes)
4. Contact (accident)
5. Loss (injury/damage)

Bird identifies areas of management that need addressing including accident investigation, job analysis, safety engineering, hiring, training and the inspection of work facilities. He specifies the need for the establishment of standards to measure management's capabilities in the above activities and suggests provision be made for a means of measuring this performance. Bird also recommends that all activities should be improved by providing a correction mechanism for continuous improvement. Kerr (1950) suggested that managers should in their quest to prevent occupational accidents, critically examine the concept accident proneness in their workplace, with a view to gaining an understanding of what accident proneness

means, thereby applying this knowledge for future occupational accident prevention strategies.

2.5.2 Behavioural Theory of Accident Causation - Accident Proneness

This theory suggests that certain individuals possess relatively permanent idiosyncrasies which increase their likelihood of having an accident. The rationale behind this follows from an examination of accident statistics, revealing that many people have no accidents at all, while a very small parentage of people have multiple accidents. The proposed interpretation of these statistics is that, those with multiple accidents must have a specific set of characteristics which increases their accident potential. There are three main arguments against accident proneness.

1. The unusually small percentage of those who are supposedly accident prone can be explained by the fact that the data could follow a Poisson distribution. According to a Poisson distribution, the vast majority of individuals would not have an accident, whereas a few would be involved in more than one.
2. Despite numerous studies, no definite set of individual characteristics has been discovered which is predictive of accidents across different activities and time.
3. Studies of accident data appear to suggest that “accident proneness” is a temporary phenomenon.

Kerr (1956) defines accident proneness as “a constitutional tendency within the organism to engage in unsafe behaviour within some stated field of vocational activity”. In simple terms, accident proneness is a permanent state, not a temporary one in which individuals engage in a described activity in an unsafe manner. Mintz and Bloom (1949) in a study of “repeater” accidents showed that the frequency of such accidents occurring did not fall into any given pattern thus diminishing the credence given previously that accident proneness was one of the major causes of accidents. Evidence revealed as a result of a Ghiselli and Brown (1948) experiment, indicates that 85% of accidents are not related to accident proneness and of the remaining 15% the majority of this balance is most likely to be environmentally influenced. They estimated that repeater accidents account for only 3% of all occupational accidents.

2.5.3 The Modelling Approach to Accident Causation

The modelling approach allows the accident phenomenon to be graphically depicted. This approach has been recommended by several authors, for example A.R. Hale (1970) who produced a simulation of the accident process.

In Hale’s model, use is made of a close loop system, which considers the major factors of:

- presented, expected and perceived information;
- the action; and
- the feedback.

Secondary features, such as increasing age and past experience are also considered. The typical situation involves presented information, which may be incorrect or incomplete, and can be affected by such factors as physical problems of the individual and the design/layout of the workplace. The expected information is a function of past experience and population stereotypes. Presented and expected information combine into perceived information, which is affected by such secondary factors as the effects of fatigue, etc. Possible actions are then listed according to the individuals range of skills, desired goals and plans. The individual which goes through the decision making process, which is based on the perceived benefit and a subjective estimate of cost, risk and effort in taking considered action. Finally, there is an action that could result in the accident, again affected by the individuals state of health, physical state and various innate variabilities. The action results in feedback to the next situation.

2.5.4 The International Loss Controls Institutes Loss Causation Model

The International Loss Control Institute's Model (1995) takes into account all potential loss situations. This model shows that all potential losses associated with accidents, property damage, occupational ill-health and so on are due to lack of control on the part of management, namely on inadequate loss control programme, inadequate programme standards and/or inadequate compliance with established standards. The lack of control leads to the basic causes of accidents - personal and job factors. Such factors are the immediate causes leading to the defined accident. The outcome of this chain of events is some form of loss to people, property and/or process.

Occupational accident prevention requires control over both individuals and hazards. Control over hazards are relatively straightforward, but controlling human behaviour is another matter. Human factor approaches suggest, that management can exert influence over attitudes and behaviour. In order to get employees to behave safely, they must have the equipment to operate safely, the knowledge of how to operate safely and the motivation to operate safely. Management at all levels must commit itself to ensuring that a safe place of work, safe system of work and trained competent employees exist at all times within their organisation. If management fail to achieve this, their inaction may very well contribute to the annual occupational accident statistics as compiled by the Health and Safety Authority in Ireland each year.

2.6 SUMMARY

This chapter began by outlining how there are certain organisational characteristics which influence the way in which employees behave with regard to occupational safety within the workplace. The practice of health and safety management was examined with particular reference to identifying what are the key elements of this practice. This then leads on to an in-depth analysis of describing what a health and safety culture and climate is, and how a proper organisational safety climate may be promoted. The role of training and communication for health and safety was examined with the purpose of describing their role in terms of fostering positive employee perception towards occupational safety practice.

The principals of accident prevention were given careful analysis with an objective of defining what an accident is, describing the pre-accident situation and post-accident strategy coupled with providing clarity of what hazard, risk and danger is. This is followed by an in-depth analysis of theories of accident causation, with particular reference to domino or management theories, accident proneness theory and that of the modelling approach to accident causation. This chapter ended by describing the international loss controls loss causation model from which reference was made, that in order to get employees to behave safely, management must ensure that they provide proper training, equipment, systems of work and help sustain high levels of motivation amongst employees to behave in a safe manner. Furthermore, the 2005 Health Safety and Welfare at Work Act is a key driving force to ensure middle managers within Deice Crystal, that they themselves espouse positive safety behaviour at all times.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 RESEARCH METHODOLOGY

Research methodology is concerned with the study of procedures or methods used in a discipline in order to gain knowledge to do with the interpretation and analysis of data relating to the discipline. Methodology is concerned with the manner in which information is gathered and classified during the research process. This chapter describes the reasoning and rationale for the choice of research methods used for this dissertation.

By “methods”, we mean that range of approaches used in educational research to gather data which are to be used as a basis for inference and interpretation, for explanation and predication. Traditionally, the word refers to those techniques associated with the positivistic model - eliciting responses to predetermined questions, recording measurements, describing phenomena and performing experiments. This meaning can also be expanded to include, not only the methods of normative research, but also those associated with the interpretive paradigm - participant observation, role-playing, none-directive interviewing, episodes and accounts. Cohen and Manion, (1994).

Kaplan, (1973) suggests if methodology refers to techniques and procedures used in the process of data gathering, the aim of methodology therefore is:

“To describe and analyse those methods, throwing light on their limitations and resources, clarifying their presuppositions and consequences, relating their potentialities to the twilight zone at the frontiers of knowledge. It is to venture generalisations from the success of particular techniques, suggesting new applications and to unfold the scientific bearings of logic and metaphysical principles on concrete problems, suggesting new formulations”.

3.1 INFLUENCING FACTORS

In the writing of this dissertation one is conscious of a number of influencing factors that must be rationalised in order to provide the reader with an understanding of the methodology adopted in the structuring of this dissertation.

3.2 ASSUMPTIONS

An important assumption regarding individual's perception of risk/hazard and the implications it has on the effective implementation of health and safety procedures in the workplace, is that occupational accidents are often used as a reactive method of implementing safety management. Safety policies and procedures in this case are based on accidents that have already occurred and a presumption is made that is likely that these very accidents will be repeated. The policies and procedures designed as a result are quite specific and not very flexible. Unfortunately, in one sense, this method provides safety specialists with a ready made and convenient schedule whereby health and safety policies and procedures can be implemented with a minimum of effort. The policies and procedures developed as a result can certainly help to reduce the particular accidents in question but very often do not identify the underlying cause. In other words historical analysis in itself is not sufficient in dealing with accident causation, as accidents are not exclusively caused by similar events. The danger is that occupational safety practitioners are often too focused on these events and ignore attitudes, behaviour and human perception as a determine factor.

A secondary factor that far too often is ignored is that safety does not begin in the workplace. It is difficult to believe that the only place we are exposed to danger and risk is in the workplace. Safety awareness in the home may be of significant value in the formation of an individual's attitudes and behaviour in relation to management of health and safety in the workplace. Wicker (1969) argues that attempts to change people's attitudes may not be the correct method of attempting to influence behaviour. He believes the reverse would seem to be a more logical approach and the findings of his study concluded that attitudes were generally unrelated to behaviour or at best slightly related. The implications for attitudes and behaviour for individuals in health and safety issues can be seen in a very different light as a result of Wicker's research. Should safety management help individuals behave in a more positive manner by focusing on changing the behaviour rather than their attitudes both inside and outside of the work environment? It is a point of view that cannot be easily dispelled and deserves further investigation.

Pollard (1989) argues that management, trade unions and safety and bodies also play a vital role in the management of safety. These groups in themselves are human and exposed to the very same factors as individual workers. Perception, attitude and behaviour patterns apply similarly to these groups as they do the individual worker, even though they may be manifested through slightly different channels. The same principles apply although a more varied approach may be necessary in developing a strategy to reach these groups. Are safety policies and procedures at the mercy of organisational culture and structure? Handy (1976) states that inappropriate organisation culture and structure causes dysfunctional behaviour in organisations, and organisation efficiency in turn suffer significantly in its wake. In developing a

methodology for this dissertation, a structure will be devised that takes into account previous research of this subject matter.

3.3 SELECTING THE MOST APPROPRIATE RESEARCH METHOD

In conducting this research one is seeking in the words of Howard and Sharp (1983), *“through methodological processes to add to one’s own body of knowledge and hopefully to that of others, by the discovery of none-trivial facts and insights”*.

Therefore, in selecting the most appropriate research methodology, i.e. the approach to investigating, collecting and classifying the information relevant to the study, it is beneficial to reflect upon the broad conceptual methodological research continuum with the positivist at one’s polar position and the naturalist at the other.

3.3.1 Positivism

The underlying theme of positivism is that the social world exists externally and that its properties should be measured with objective methods rather than be inferred subjectively through reflection or intuition, Esterby, Smith, Thorpe, Lowe, (1991). Positivism places relative emphasis on deduction and quantitative data and utilises highly structured methods, i.e. survey design and experimentation.

3.3.2 Naturalism

The naturalist perspective is essentially a rejection of the positive school of thought and to that end is non-scientific in nature. This approach argues those working deductively are imposing an external logic upon phenomena that have their own logic, Gill and Johnston (1991). The maxim of the naturalist perspective lies in the analysis of subjective accounts, which are generated and Burrell and Morgan (1979) argues, that by getting inside situations and involving the investigator in the everyday flow of life. The research approach generates information of a qualitative nature and includes methods such as observation, documentary analysis and in-depth case study.

Giddings (1978) argued that there is no one best method but many methods contingent on the issue being studied regardless of epistemological bias. Bell (1993) suggests that, quantitative research is to:

Collect facts and study relationship of one set of facts to another. (They) measure, using scientific techniques that are likely to produce quantified and if possible, generalisable conclusions”.

Bryman (1984) said:

“Qualitative research, looks not so much for causes as for meanings... seeing the task of social research as uncovering the meaning of social events and processes based upon understanding the lived experience of human society from the actors point of view”.

After reflecting upon the broad methodological research it is now possible to examine the research methods and techniques for the purposes of this research.

3.4 RESEARCH METHODS AND TECHNIQUES

In their book, “Research Methods for Managers” (1991) John Gill and Phil Johnson stated:

We also wish to challenge the widespread advocacy of particular approaches to management research as being “the best”. Advocacy of one approach or another, often irrespective of context, is commonplace in business and management research”.

Nachmias (1992) argued that no research method is entirely qualitative or quantitative, in many cases it is possible to use research techniques usually only applicable to one method or another (see Figure 6).

3.4.1 Qualitative and Quantitative Research

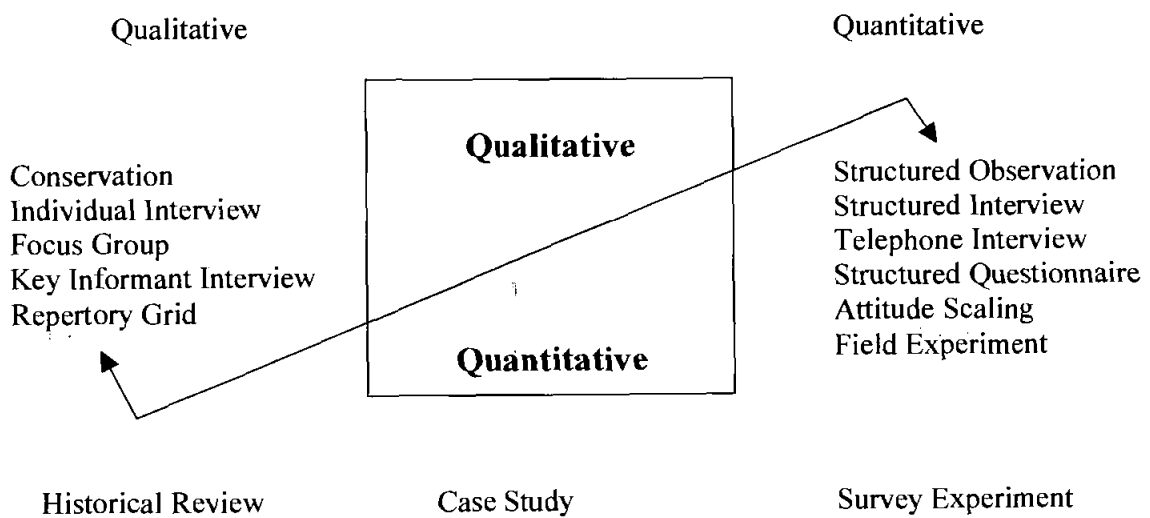
What is the distinction between qualitative and quantitative data, and the limitations and the uses of each? Qualitative data is the evidence that is recorded by means of verbal description as opposed to quantitative data where the evidence is recorded in numerical form.

Reeves and Harper, (1981) suggests that, there is often reluctance among research students to make use of qualitative data, since it is believed that only quantitative data is objective and reliable. Essentially there are two forms of quantification: first, the measurement of some items, for example, the size of an organisation or the strength of a person’s attitude; and the second, counting the incidence of a particular item of data, for example, the number of organisations within a certain characteristics or people holding particular views. This kind of data has to be recorded in descriptive or

qualitative form, though it may, of course, subsequently be converted to a quantitative form by categorising it and then counting the incidence of the different categories. This is a routine procedure in survey work where one codes and enumerates the incidence of different responses to open ended questions.

Research Methods and Techniques: Qualitative and Quantitative

While techniques are largely



No method is entirely qualitative or quantitative

Source: Nachmias (1992)

Figure 6 - Research Methods and Techniques: Qualitative and Quantitative

A research method is described as:

“A systematic and orderly approach taken towards the collection of data so that information can be obtained from those data”.

While techniques;

“Are particular step by step procedures which you can follow in order to gather and analyse them from the information they contain”.

Nachmias (1992)

Gill and Johnston (1991) propose a series of five models or theories for research by managers. There are ethnographic research, survey research and design, experimental research design, quasi experiments and action research. The following are the descriptions of each research method.

3.4.2 Ethnographic Research

Early anthropologists who wished to study a society or some aspect of society or culture in depth developed the ethnographic style of fieldwork research. They developed an approach, which depends heavily on observation and in some cases complete or partial integration into the society being studied. This form of observation enables the researcher as far as possible to share the same experiences as the subject and so to understand why they acted the way they did. This approach is no longer limited to anthropological studies and has been effectively used in studies of small groups.

3.4.3 Questionnaires

The term “questionnaire” has been used in different ways. Some practitioners would reserve the term exclusively for self-administered and postal questionnaires, while others would include interview schedules (administered face-to-face or by telephone) under the general rubric of “questionnaires”. In a different way the word “questionnaire” is sometimes used to distinguish a set of questions including perhaps some open-ended ones, from more rigidly constructed scales or tests. Therefore the use of the term “questionnaire” is used fairly loosely to cover postal questionnaires, group or self-administered questionnaires and structured interview schedules. Oppenheim, (1992)

There are numerous methods of data collection - the methods most commonly used in questionnaire based studies include:

- The standardised, formal interview
- The postal questionnaire or the self-administered questionnaire
- The group administered questionnaire

3.4.3.1 Self-Administered Questionnaires

The self-administered questionnaire is usually presented to respondents by an interviewer. The purpose of the survey or inquiry may be clearly explained (by a trained interviewer) and the respondent is left to complete the questionnaire. The completed questionnaire is then collected later. This method of data collection

usually provides a relatively high rate of return and involves a minimum of interview bias.

3.4.3.2 Group Administered Questionnaires

This questionnaire is also self explanatory and may be administered to groups of respondents assembled together. Dependent on the size of the group, more than one interviewer may be required, Oppenheim, (1992)

3.4.3.3 Interview Research

Where there is a need to seek explanation and diagnose causes there is little alternative but to conduct research by means of personal interviews, which are probing in depth. Reeves and Harper (1981).

An interview is:

The conversation between interviewer and respondent with the purpose of electing information from the respondent. (A conversation with a purpose). Walker, (2003)

Types of interview:

- Structured i.e. questions planned out in advance
- Semi-structured i.e. initial questions planned but further probing allowed
- Unstructured i.e. questions not planned at all, just focus on a topic area

3.4.4 Experimental Research

This is concerned primarily with precision. Bell (1992) states that it is relatively easy to plan experiments, which deal with measurable phenomena. This type of research is in all essence laboratory based and it attempts to structure its research problem in such a way that the outcome is the production of valid and objective answers. The experimental style does not allow conclusions to be drawn about causes and effect.

3.4.5 Quasi Research

This is undertaken in a more natural setting than laboratory setting. The main objective of this research is to give analysis to casual relationships between independent and dependant variables.

3.4.6 Action Research

Action research involves a continuous cycle of research and action, which serves as a general model for managing change and organisational problem solving. There are many definitions of management research: Cohen and Mannion (1989, p.223) define action research as:

“An on the spot procedure designed to deal with a concrete problem located in an immediate situation”.

An important assumption in action research is that:

*"Once cannot understand the humane system without trying to change it".
Schein, (1987) in Gill and Johnson, (1991, p. 71)*

Action research is mostly used in an educational setting. It is nevertheless appropriate in any context where a specific knowledge is for a specific problem in a specific situation or when a new approach is to be grafted on to an existing system (Cohen and Mannion, 1984).

Judith Bell (1993) used similar titles as Gill and Johnston (1991) for educational research but she included case study as a stand alone method. The following definition of case study may help in the understanding of the concept and also distinguish it from other research strategies.

3.4.7 Case Study Strategy

A case study is an empirical enquiry that investigates a contemporary phenomenon within its real life context, when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. Yin (1984, p.23).

Eisenhart (1998) describes the case study as a research strategy that focuses on understanding the dynamics that present with single settings.

Yin (1984) further defines a case study as:

“An empirical enquiry that:

Investigates a contemporary phenomenon within a real life context; when

- *The boundaries between phenomenon and context are not evident; and*
- *Multiple sources of evidence are used”.* (p.23)

In attempting to settle on a research strategy, the research methods as discussed earlier are considered and the strengths and weaknesses of each method as listed are examined. Figure 7 summarises the strengths and weaknesses of each research method.

3.4.8 Research Methods: Strengths and Weaknesses

	Strengths	Weaknesses
Interviews	Structured: good for quick, short questions and answers. Used instead of questionnaire or can follow-up a questionnaire.	Structured Interview: restrictive (to interviewer and interviewee)
	Semi-Structured Interviews: More flexible, respondents can express themselves. The interviewer can follow interest paths.	Semi-Structured Interview: Sometimes get “off the point” and harder to analyse than the structured interview.
	Unstructured Interviews: can “get at” information that may not normally come out.	Unstructured: often gets “off the point”, requires great skill to obtain useful data and much harder to analyse.
Questionnaires	Easily distributed to the sample population. Relatively inexpensive to produce and administer. Can be used with large numbers.	Experiments of large scale can be too expensive. Response rates to the questionnaire are generally low. Questionnaire may not cover all aspects of the job being investigated.
Experiments	Easy to plan Specific variables, which influence the experiment, can be controlled by the investigation. Subsequent researchers can repeat the experiment without relative difficulty.	Experiments of a large scale can be too expensive. It is not easy to bring many aspects of social life into the laboratory. The responses of those studied may be affected by their controlled situation.
Field Work	The information generated is of an in-depth nature. Researchers have the flexibility to adopt new strategies if necessary.	The use of fieldwork can apply only to communities or small groups. It is difficult to generalise on the basis of a one off field study.
Documentary Research	Can operate large data and in-depth material on the subject being studied.	The type of source may be partial.
Case Study	Opportunity for one aspect of a problem to be studied in-depth with a limited scale. Examines contemporary phenomenon in real life context.	The overall validity as a research tool has received some criticism. The researcher can be very subjective in his/her findings.

Figure 7 - Research Methods: Strengths and Weaknesses

3.5 CHOICE OF DATA GATHERING INSTRUMENTS

In order to understand the extent to which managers perceive hazards and risks within the chosen organisation and their role in the effective implementation of safety policies and procedures in the workplace it is necessary to examine the different types of research methods available and from them, select the most appropriate method for the purpose of this investigation.

Kaplan, (1992) states:

“Research techniques are a bit like fishing flies, you chose the right one for the fist that you want to catch. No fisherman would use the same kind of fly for twenty different varieties of fish just because it was the first kind he ever tried”.

When documentary research was examined to determine if it would be a suitable technique it was rejected because on many occasions the sources of the documentation are difficult to interpret in terms of how far they represent real tendencies as in the case of some kind of official statistics. A case study approach was also rejected on the grounds that it provides little basis for scientific generalisation, it will also take too long to complete. Experimental research was rejected also because this type of research is more suited to laboratory setting.

It is the author’s opinion that a combination of a self-administered questionnaire, based on the Likert scale, and a semi-structured interview would collect the most accurate data to reflect the current managerial perceptions of hazards and risks within the organisation, and their role in the effective implementation of health and safety policies and procedures within the workplace. Both research methods will cover the

three areas of interest relevant to the research being undertaken: safety legislation, hazards and risks and safety culture and climate.

3.6 RESEARCH PROCESS STEPS AND POTENTIAL SOURCES OF ERROR

Research procedure or strategy relates to how research is planned and carried out. This means choosing the appropriate methods of research and working out how to apply it to the area of study. The research process as recommended by Boyd, Westhall and Stasch (1985) can be viewed as consisting of the following seven steps (see Figure 8).

Step	Sources of Error or Other Difficulties
1. Specifying research objective	Management poorly defines the opportunity or the purpose of the study.
2. Listing needed information	Management does not identify precisely the specific information needed for the research objectives.
3. Designing the data collection project	Ambiguous questions or poor experimental designs result in responses, which are not reliable or valid.
4. Selecting sample size	Sample procedure result in the selection of biased sample.
5. Determining sample size	Some errors arise from the random fluctuations normally associated with sampling.
6. Organising fieldwork activities	Errors are caused by the improper selection of respondents, and by the interviewers not following instructions.
7. Analysing and reporting findings.	Errors occur during the process of transforming random data from questionnaires into "research findings".

Figure 8 - The Systematic Research Process

3.7 ETHICAL ISSUES

The new Webster's Dictionary and Thesaurus of English Language defines ethics, as *“relating to morality of behaviour, ethical standards - conforming with an accepted standard of good behaviour in a profession or trade”*.

It is important with regard to ethical issues, that consideration must be given in relation to conducting research through a questionnaire medium, in that a researcher must be actively aware that the potential questionnaire respondents may have a fear that the information that they provide could possibly be used in a negative manner against them. Therefore, in an attempt to overcome these fears, each respondent will be guaranteed in writing (of) the following:

- The rationale behind the research survey will be fully explained to the individuals involved.
- The information will be analysed as summaries; this will in effect ensure that individuals cannot be identified.
- The questionnaire results will be made available to the individuals involved. Any individual may request the removal of any information they provide. Any request of this nature will be granted.

It is not only of importance to carefully consider the ethical issues relating to this research, but the validity and reliability of the research itself is as equally important in this consideration.

3.8 RELIABILITY AND VALIDITY

3.8.1. Reliability

A test is reliable to the extent that whatever it measures, it measures it consistently. If I were to stand on a scale and the scale read 15 pounds, I might wonder. Suppose I were to step off the scale and stand on it again, and again it read 15 pounds. The scale is producing consistent results. From a research point of view, the scale seems to be reliable because whatever it is measuring, it is measuring it consistently. Whether those consistent results are valid is another question. However, an instrument cannot be valid if it is not reliable.

There are three major categories of reliability for most instruments: test-retest, equivalent form, and internal consistency. Each measures consistency a bit differently and a given instrument need not meet the requirements of each. Test-retest measures consistency from one time to the next. Equivalent form measures consistency between two versions of an instrument. Internal consistency measures consistency within the instrument (consistency among the questions). A fourth category (scorer agreement) is often used with performance and product assessments: Scorer agreement is consistency of rating a performance or product among different judges who are rating the performance or product. Generally speaking, the longer a test is, the more reliable it tends to be (up to a point). For research purposes, a minimum reliability of .70 is required. Some researchers feel that it should be higher. A reliability of .70 indicates 70% consistency in the scores that are produced

by the instrument. Many tests, such as achievement tests, strive for .90 or higher reliabilities. Neag School of Education (2003).

3.8.2 Validity

An instrument is valid only to the extent that its scores permit appropriate inferences to be made about:

1. A specific group of people
2. For specific purposes

An instrument that is a valid measure of third grader's math skills probably is not a valid measure of high school calculus student's math skills. An instrument that is a valid predictor of how well students might do in school, may not be a valid measure of how well they do once they complete school. So we never say that an instrument is valid or not valid... we say it is valid for a specific purpose with a specific group of people. Validity is specific to the appropriateness of the interpretations we wish to make with the scores.

In the reliability section we discussed a scale that consistently reported a weight of 15 pounds for someone. While it may be a reliable instrument, it is not a valid instrument to determine someone's weight in pounds. Just as a measuring tape is a valid instrument to determine people's height, it is not a valid instrument to determine their weight.

3.8.3 Testing the Survey Results for Reliability and Validity

Oppenheim, (1992) argues, we should think of questions as *measures*: because each question has a job to do, and that job is to measure a particular variable, as laid down in the questionnaire specification. In order to determine how well each question will do its job, we need to use the concepts of *reliability* and *validity*.

Reliability refers to the purity and consistency of a measure, to repeatability, to the probability of obtaining the same result again if the measure were to be duplicated. Validity, on the other hand, tells us whether the question, item or source measures what it is supposed to measure. It is possible to have a measure that is highly reliable but also having poor validity. For example, if a clock is exactly eight minutes fast consistently it means that the clock is accurate at measuring time but the measure is not valid because it will not give the correct time. On the other hand, if we find that a measure has excellent validity, then it must also be reliable, because reliability is a prerequisite for validity.

In order to determine the reliability and validity of questions we must first of all determine if they are factual or attitudinal questions. If we look at factual questions, their reliability can be measured by repeatedly asking the same question again in a slightly different format. Care has to be taken to avoid annoying the respondent by asking the same question repeatedly. The interviewer should use internal checks, for example on asking the same question on a second occasion the respondent could be given the opportunity of picking an item from a list containing the element/s from the original question. To determine the validity of a factual question there are a

number of methods, usually known as external checks where a second external source of independent information is required. Sometimes records are used to check on certain points of information. Records such as hospital records, factory absenteeism figures etc. on some occasions two informants can be used to ascertain the same results such as husband and wife (with regard to marital relations or joint financial transactions). Parent and teacher (with regard to a child's behaviour). One of the difficulties of using the two informants methods if there is disagreement it is difficult to tell who is right and who is wrong. Occasionally respondents to mail inquiries are interviewed on the assumption that the interview is more valid.

The problem with attitude questions is that they are more sensitive than factual questions, because when they are changed in wording, context, emphasis and so on, it is almost impossible to assess reliability by asking the same questions again in another form. It will no longer be the same question. Instead of relying on one question we should use sets of questions or attitude scales to assess readability. Sets of questions are more reliable than single option items, because they give more consistent results, mainly because vagaries of question wording will apply to particular items, therefore, any bias may cancel out. The need to ask the same question again to test reliability is eliminated because of correlation coefficient (how the degree of reliability is expressed).

One of the main difficulties in assessing the validity of attitude questions is the need for groups of people with known attitude characteristics (criterion groups). For example groups such as the members of a particular political party or of a particular church. Inadequate question wording and questionnaire construction are not the only

causes of poor attitudinal validity. Error and bias will also rise from irregularities in procedures, changes in wording, faulty recording and failure to maintain rapport. We can reduce the margin of error and bias by careful interviewer selection, training, briefing and supervision.

3.8.4 Subjective Bias

Bell, (1993) suggests, there is always a danger of bias creeping into interviews, largely because, as Selltitz (1962) points out, “interviewers are human beings and not machines”, and their manner many have an effect on the respondents. Where a team of interviewers is employed, serious bias may show up in data analysis, but if only one researcher conducts a set of interviews, the bias may be consistent and therefore go unnoticed.

Borg, (1981) argues, there are many factors that can influence respondents, in one way or another. Borg draws attention to a few of the problems that may occur:

- Eagerness of the respondent to please the interviewer.
- A vague antagonism that sometimes arises between interviewer and respondent.
- The tendency of the interviewer to seek out the answers that support his/her preconceived notions.

These factors are also known as response effect by survey researchers.

Garvan (1966) points out, *“it is difficult to see how this (bias) can be avoided completely, but awareness of the problem plus constant self control can help”*.

Care should be taken if a person knows that they hold strong views about some aspect of the topic, there is a need to be particularly careful about the way a question is put. It is easier to “lead” in an interview than it is in a questionnaire. The same question put by two different people, but with different emphasis and in a different tone of voice, can produce very different responses. Therefore, complete objectivity is the aim. Bell (1993)

Reeves and Harper (1981) argues, *any researcher will have political sympathies or commitments, which may colour or influence the issues that he/she decides to examine or the interpretation of the data*. However, Reeves and Harper believe that these sympathies need not necessarily stand in the way of carrying out an unbiased and objective investigation. The claim to be a professional researcher rests on the capacity not to let judgements be influenced by personal predispositions. Only when objective research and political action become confused, with the former becoming an instrument of the latter, does the research risk becoming biased.

It is important at this point to reiterate why the research is being undertaken. Restating ones objective provides structure and clarity of purpose that will help to identify clearly how the research will be done.

3.9 DATA GATHERING INSTRUMENTS OBJECTIVES AND HYPOTHESIS

Health and safety in itself is a complex subject. Every organisation is concerned in some manner with the safety of its workers. Determining managerial perception, attitude and behaviour with regard to hazards and risks and implementing effective safety management policies and procedures, and to reduce the level of risk people are exposed to within the organisation is an equally difficult task. Therefore, it is essential that a clear set of objectives be set out to enable work within the research topic to be conducted, so that an understanding of the subject and the overall objective is achieved.

3.9.1 Objectives

1. To determine the attitudes and perceptions that middle management hold within a crystal manufacturing company with regard to health and safety, in light of the 2005 HSW Act and to examine the implications for the effective implementation of health and safety policies and procedures in the workplace.
2. To develop a questionnaire and interview questions to probe areas not covered in the literature review with regards to attitude and behaviour and to identify areas that need developing.
3. To survey and interview a representative sample of the population to determine managerial perceptions of hazards within the organisation and their

role in the effective implementation of health and safety policies and procedures within the workplace in light of the 2005 HSW Act.

4. To analyse and accurately interpret the findings of the data gathering instruments.
5. To present new findings on the management of safety within the organisation selected taking human factors into account.
6. To contribute to the knowledge base and to provide answers to organisational problems in the effective management of health and safety in human terms.
7. To make recommendations for improvement of existing practices based on a more pro-active approach to health and safety management.
8. To establish a platform whereby further research can be initiated to make organisations safer places to work.

3.10 ORGANISATION SELECTED

Industrial sector : crystal manufacturing

Location: South East of Ireland

Number of employees: 1,000

Number of middle managers: 10

3.11 METHODS SELECTED FOR DATA COLLECTION

The type of data to be collected from the organisation will be of a qualitative and quantitative nature.

3.11.1 Whom will be Targeted from within the Organisation?

Ten middle managers will make up the sample population.

3.11.2 Summary of the Methods Selected for Data Collection

A self-administrated questionnaire, based on the Likert scale, will be used to determine managerial perceptions of hazards and risks within the organisation, and their role in the effective implementation of health and safety policies and procedures within the workplace. The research method will focus on the three areas of interest relevant to the research being undertaken: safety legislation, i.e. HSW at Work Act 2005, hazards, risks and safety culture and climate within Deice Crystal.

It is important to stress that health and safety and welfare to be proactive must be driven by managers who are astute enough to integrate safety legislation as a support for promoting a positive safety culture and climate.

3.12 PHRASEOLOGY

Phraseology is a term used to describe whether or not the respondents can understand the manner in which questions are asked. The feedback from the pilot study will be used as a valuable aid when assessing the presence of respondent's misconceptions. In the questionnaire design, the author, with reference to characteristics of the population from which the sample is to be drawn will review the following considerations:

- Are the purposes of the research revealed to respondents in a way that will promote the likelihood of their co-operation without biasing subsequent responses?
- Are any/all instructions to respondents clear and unambiguous?
- Can the questions be understood i.e. are they free from jargon, esoteric terminology, inappropriate assumptions and ambiguity?
- Are the respondents likely to possess the requisite information and knowledge to answer the questions?
- Is it possible that respondents might find the wording of the questions, offensive, insensitive or embarrassing?
- Might the working of the questions lead to bias through "leading" the respondent to particular answers or imposing assumptions that maybe unwarranted?

Gill and Johnston, (1991)

3.13 THE PILOT STUDY

Bell, (1993) suggests, the purpose of a pilot exercise is to get the bugs out of the instrument so that subject's in the main study will experience no difficulties in completing it and so that you can carry out a preliminary analysis to see whether the wording and format of the questions will present any difficulties when the main data is collected and analysed.

All data gathering instruments should be piloted to test how long it takes recipients to complete them, to check that all the questions and instructions are clear and to enable you to remove any items, which will not yield usable data.

Bell, (1993) also points out that you should ask your pilot group the following questions:

1. How long did it take you to complete?
2. Were the instructions clear?
3. Where any of the questions unclear or ambiguous? If so, will you say which ones and why?
4. Did you object to answering any of the questions?
5. In your opinion, has any major topic been omitted?
6. Was the layout of the questionnaire clear/attractive?
7. Any comments?

It is suggested that using these questions following the pilot work will enable the researcher to revise the questionnaire prior to the final distribution to the sample population in the main study.

3.14 THE SCALING METHODS

Section one of the self-administered questionnaire will be of a fact-finding nature where particular aspects of the organisation will be probed. The data obtained will be particular to the organisation and will be used for comparative and analytical reasons and will be charted using descriptive statistical methods. The data will be divided into categories for the purpose of ordering. These categories will be as follows:

1. Managerial behaviour
2. Managerial attitude
3. Managerial perception
4. Managerial involvements/policy and procedures

This method will enable the data to be correctly analysed at a later stage. The scaling method most suited to this task is a five point Likert scale. The method provides a usable structure for the research and will enable comparisons to be drawn between individual results. It will also help to eliminate respondent error, as the options open to the respondents will be well defined.

3.15 VENUE

Due to the convenient number of participants in the sample population (ten) it will be possible to approach each respondent on an individual basis. For this reason the self-administered questionnaire will be completed on the same day at a venue, which is private, free from interruption and distraction.

3.16 SEQUENCING AND THE MEASUREMENT INSTRUMENT DESIGN

Questions will be laid out in such a way so as the respondent is aware of the subject matter being discussed. A systematic and natural flow of questions will be designed to help the respondent to focus on the issues and to ensure that he/she feels comfortable with the questions. The questionnaire layout will be designed to establish rapport with each respondent. The questions will be sequenced so as to avoid biases and will later be restructured for the purpose of analysing the data.

Considering all the previous factors a final draft of the self-administered questionnaire and semi-structured interview questions was completed to act as the data gathering instruments for this research undertaking.

3.17 ANALYSIS OF THE QUESTIONNAIRE

Analysis of the self-administered questionnaire and semi-structured interview questions will be conducted and the following will be explored:

1. The relationship between characteristics
2. The relationship between the organisation and attitudinal

3.18 THE SELF ADMINISTERED QUESTIONNAIRE COVER LETTER

A cover letter will accompany all self administered questionnaires to be circulated to the same population. The purpose of the cover letter is to facilitate the following:

1. Introduce the author of the questionnaire
2. State clearly the purpose of the questionnaire
3. To assure anonymity to all respondents

3.19 THE QUESTIONNAIRE PILOT STUDY

Three weeks prior to the issuing of the final draft of the questionnaire, a pilot study was conducted, where a single questionnaire was distributed for completion to two other middle managers in Decice Crystal. The results from the questionnaire, strongly indicated that the design of the questionnaire was capable of producing accurate results and furthermore no significant problems occurred in relation to the questions

or their layout. Shortly after receiving all the pilot questionnaires, the main survey questionnaire was distributed.

3.20 RESPONSE TO THE FINAL SURVEY QUESTIONNAIRE

A 100% response was achieved.

3.21 SUMMARY

This chapter began by outlining what research methodology is. This was followed by a description of the influencing factors which have to be taken into account for the purpose of this research survey. In-depth analysis was also given on the range of research methods available for the purposes of this research. This was followed by a strength and weakness analysis of each research method available from which a choice of research method was chosen. In this particular case an ethnographic method of research was chosen on the grounds that this research method would most suit the needs of this research. The principal reasoning behind this choice of selection is based on the premise that this type of research enables analysis of subjective amounts by getting inside natural situations.

Careful consideration was also given to important research factors such as sources of error or other difficulties, ethical issues and validity and reliability. The ethnographic method of research was discussed in detail followed by a further discussion on the type of survey to be used in this research. It was also stated that the questionnaire survey would be based on behavioural, attitude and perception model. It is necessary for the purpose of focus and clarity to state the objectives of this investigation. The main instrument in the research is that of the questionnaire. The format of the questionnaire was described in detail. This chapter finished by stating the response rate to the final survey questionnaire.

CHAPTER FOUR

SURVEY ANALYSES

4.0 INTRODUCTION

This chapter is concerned with the systematic analyses of the survey questionnaire which has been discussed in detail in the methodology chapter. For the purposes of this research, the analysis which will be conducted will be divided into the following main sections.

Section 1 - is primarily concerned with the analysis of the individual respondent's profiles and probes areas such as gender, age, experience, present occupation, training and accident records.

Section 2 - this provides analysis based on individual behaviours, attitudes and perceptions and how these human factors relate to the implementation of safety policies and procedures in the workplace in light of the 2005 Health, Safety and Welfare at Work Act.

Finally, the findings will be discussed, conclusions drawn and recommendations made where necessary,

4.1 SECTION 1 - DETAILS OF THE RESPONDENTS

The following is an analyses of each of the respondents personal details in relation to the questions asked in section 1.

4.1.1 By Gender

The gender of the senior management respondents are as follows:

	Male	Female	Total
(N = 10)	8	2	10

4.1.2 Age Profile

In analysing the age profiles it was established that the average age of respondents is 41 years.

4.1.3 Length of Experience

From data presented, statistics show that the average length of management experience for respondents within Deice Crystal is 10 years.

4.1.4 Work Section within the Organisation

The job mix of the respondents from the site were managers from manufacturing department, quality department, training department, engineering department. The Health and Safety Department was instrumental in distributing the questionnaire to the target population in each department.

4.1.5 Have you Received Specific Training in Health and Safety within your Organisation in Light of the 2005 Health Safety and Welfare at Work Act?

60% of the respondents indicated that they were trained specifically in Health and Safety in light of the 2005 HSW Act. This training highlighted the manager's roles and responsibilities. However, the training was predominantly theory based as opposed to practical implications.

4.1.6 Employees Involved in Accidents in the Last Six Months from your Department?

The survey findings illustrate that the total number of employees involved in accidents within the respondents collective departments was 12 accidents in total.

4.1.7 Nature of Accidents and Injuries

40% accidents attributed to back injury

30% accidents attributed to slips/trips

30% accidents attributed to cuts

4.2 SECTION 2 - ORGANISATIONAL DETAILS

This section of the survey questionnaire is designed to help provide analysis of the organisational safety systems which exist, with specific regard to the management of hazards and risks within the managers departments in light of the requirements of the 2005 Health Safety and Welfare at Work Act.

4.2.1 Positive Outcomes and Negative Outcomes

Table 2 - Organisational Details Survey Results

Q		(N = 10)		
		Yes	No	D/Know
1	Does your organisation have a safety statement?	100%		
2	Do you know what the purpose of a safety statement is?	100%		
3	Does your organisation have departmental safety guidelines?	100%		
4	Do you know where the safety guidelines are located in your own department?	100%		
5	Does your organisation have a safety representative?	100%		
6	Are regular health and safety audits carried out in your organisation?	85%	15%	
7	Do you know who carries out these audits?	85%	15%	
	Is there a written statement of policy on health and safety in your organisation?	100%		
9	Are all accidents reported within your organisation?	100%		
10	Does the union take an active role in health and safety in your organisation?	60%	20%	20%
11	Are safety records kept within your organisation?	100%		
12	Do you know the difference between a hazard and risk in your work environment?	80%	20%	
13	Does your organisation have a safety committee?	80%	10%	10%
14	Do you know who the Health and Safety Authority is?	100%		
15	Does your organisation have employees trained in first aid?	100%		
16	Are accident report forms available within your organisation?	100%		
17	Do the union and management meet regularly on issues of health and safety?	90%	10%	
18	Are you familiar with the 2005 Health Safety and Welfare at Work Act?	60%	40%	
19	Do you know the location of the nearest first aid kit in your department?	60%	40%	
20	Does your organisation conduct safety awareness campaigns?	80%	10%	10%
21	Has a Health and Safety Inspector visited your organisation in the past 12 months?	80%	20%	
22	Do you know your roles and responsibilities under the 2005 HSW Act?	60%	40%	

4.2.2 Summary of Survey Results

Further comment will now be given on key areas of the survey results.

Positive results - The majority of respondents are knowledgeable of their own organisations safety statement. This demonstrates that management are serious about keeping health and safety as much of a priority as production or quality. In theory a safety statement is an identification of hazards and assessment of risks within an organisation, management are responsible for ensuring suitable control is provided to minimise the risks of each hazards. This is where the knowledge of a safety statement is so critical in promoting good occupational safety practice as per the guidelines in the 2005 Health Safety and Welfare at Work Act.

100% of the respondents have knowledge of their own departmental safety guidelines. These guidelines are the cornerstones of ensuring efficient and effective safe working practices. Furthermore, safety guidelines provide a mechanism by which employees and management can quickly gauge how safe in general terms is their own department.

All the middle managers are aware of the evacuation procedures in the event of a fire alarm. A fire of any sort presents a serious threat to the well being of all employees and to the physical structure of manufacturing sites themselves. Therefore, it is in the interests of management and employee alike, to be vigilant and aware of the evacuation procedures.

Negative Results -20% of the respondents were not aware of the difference between a hazard and a risk. This a worrying statistic, particularly because of the high percentage of managers who are not aware of this difference. If middle managers are not aware of the difference between hazard and risks how can the managers show leadership in promoting a positive safety culture and climate within Deice Crystal,

30% of the respondents had little practical knowledge application of the 2005 Health Safety and Welfare at Work Act. This should be of great concern for management in Deice Crystal because ignorance is no defence where an organisation fails to deliver safety.

20% of the respondents were unaware that the Health and Safety Inspector visited Deice Crystal in the past twelve months. This lack of knowledge amongst some managers of the Safety Inspector visits, demonstrates that management in the site need to ask the question why and how is communication breaking down. The visit of a Health and Safety Inspector is as much of a concern for the union as the management. Therefore, to demonstrate transparency on matters of health and safety, management must ensure that all employees are aware of a Health and Safety Authority Inspectors visit. This knowledge will further demonstrate management's commitment on openness and transparency on important issues of occupational health and safety.

A significant proportion of middle managers do not know their roles and responsibilities at work in light of the 2005 Health Safety and Welfare at Work Act within a practical setting. This statistic is an indictment on Deice Crystal in that the

company is failing to educate a significant proportion of middle managers on how to achieve a safe place, safe system, safe person environment in light of the 2005 Act.

4.3 SECTION 3 - INDIVIDUAL PERCEPTION IN LIGHT OF THE 2005 HEALTH SAFETY AND WELFARE AT WORK ACT

This section of the survey is concerned with the perception of the respondents in terms of risk. A summary of the data is presented in Table 3.

Table 3 - Individual Perception of Risk Present in the Organisation

		(N = 10)				
	Level of agreement or disagreement with the following statements	HA	A	NS	D	HD
1	The chances of an accident occurring in my workplace is slight	3	3	1	2	1
2	My organisation is not a high risk company in health and safety terms	4	2	-	2	2
3	Getting the work done or achieving production targets is more important than safety	-	2	-	2	6
4	Some employees are more accident prone than others	2	3	1	2	2
5	There is a certain amount of risk involved in any job in this organisation	3	1	2	3	1
6	I would consider myself more skilful than my colleagues in assessing risk & danger	1	1	3	3	2
7	All accidents are preventable	3	4	1	1	1

Key

HA	Highly Agree	D	Disagree
A	Agree	HD	Highly Disagree
NS	Not Sure		

It may now be appropriate to discuss in greater detail some of the more interesting survey results in Table 3.

Q. **The changes of an accident occurring in my workplace are more than slight?**

Table 4 - Chance of Accident in the Workplace

	(N = 10)
Highly Agree	3
Agreed	3
Not Sure	1
Disagreed	2
Highly Disagreed	1

3 of the respondents were of the opinion that there was more than a slight chance of an accident happening in the workplace. This data would suggest that based on these findings, that management will need to look closely at why nearly 30% of their respondents feel that there is more than a slight chance of an accident happening in what is in essence a low risk environment.

Q. **Getting the work done or achieving production targets is more important than observing safety rules?**

Table 5 - Production Versus Observing Safety Rules

	(N = 10)
Highly Agree	-
Agreed	2
Not Sure	-
Disagreed	2
Highly Disagreed	6

20% of the respondents felt that achieving production targets is more important than observing safety rules. This should be a major cause for concern amongst management, in that negative perception needs to be urgently and radically addressed. Health and safety cannot and must not take a back seat to production or any other departmental objectives.

Q. All accidents are preventable?

Table 6 - Prevention of Accidents

	(N = 10)
Highly Agree	3
Agreed	4
Not Sure	1
Disagreed	1
Highly Disagreed	1

The overwhelming majority of respondents are in agreement that all accidents are preventable. This high percentage is significant in that it provides a building block for both management and union employees alike, to further devise operational procedures in the continuous prevention of occupational accidents in light of the 2005 Health Safety and Welfare at Work Act.

Illusions of Control

McKenna (1993) suggested that illusions of control operate where individuals perceive themselves as having more control over hazard and risk than their colleagues. When applying these principals in this research, respondents were asked if they were more skilful in dealing with hazard and risk compared to their fellow workers.

The rationale proposed for age being a factor in the “illusions of control” theory is that:

- The under 35’s may because of a higher level of education, perceive themselves as having greater confidence than that of their older colleagues.
- The over 35’s may have a more realistic view of their own personal limitations, physical or mental as opposed to their younger under 35’s counterparts. Henceforth, the more mature employees exercise caution in the workplace based on experience and maturity.

It could be suggested that experience can determine ones ability to realistically assess oneself in relation to hazards and risks encountered in the work environment.

Furthermore, the dangers that exist with a workforce who overestimate their ability deal with occupational hazard and risk have been identified by many leading safety experts as individuals who are unlikely to seek further training in occupational health and safety as they perceive themselves as having adequate personal control over their work environment. This in itself poses a danger through ignorance.

4.3.1 Perception of Organisational Safety Effort in Light of the 2005 Health Safety and Welfare at Work Act

The questions in this section of the questionnaire are all concerned with individual perception of the safety effort taken by their organisation in the management of safety. A summary of the questions and responses are presented in Table 7.

Table 7 - Perception of Organisational Safety Effort

No	Level of agreement or disagreement with the following statements	(N = 10)				
		HA	A	NS	D	HD
1	Our organisational culture emphasises a high level of safety consciousness	3	4	1	1	1
2	Health and safety in the workplace concerns everyone	6	2	1	1	-
3	Too much emphasis is given to safety within the organisation	-	1	1	2	6
4	Management have full responsibility for safety management in the organisation	3	6	-	1	-
5	On this site management are interested in safety	7	3	-	-	-
6	It is important that Deice Crystal record accident investigations	4	2	2	1	1
7	All accidents are reported in the organisation using the correct procedure	5	3	2	-	-
8	Employees should bear some work in ensuring the organisation is safe to work in	6	4	-	-	-
9	On this site safety training is thorough and efficient	4	3	2	1	-
10	Employees who consistently fail to observe safety rules should be disciplined	10	-	-	-	-
11	There is a positive attitude towards safety in my department	3	3	3	1	-
12	Understanding accident causation will help employees in accident prevention	10	-	-	-	-

Key

HA Highly Agree

A Agree

NS Not Sure

D Disagree

HD Highly Disagree

Comment will now be provided on some of the key data presented in Table 7 on the perception of organisational safety effort.

- Q. **Our organisational culture is one that emphasises a high level of safety consciousness?**

Table 8 - Focus on Safety Culture

	(N = 10)
Highly Agree	3
Agreed	4
Not Sure	-
Disagreed	2
Highly Disagreed	1

It is worth noting that 3 of the respondents were of the opinion that their organisational culture was not one that emphasised a high level of safety consciousness. If the management in this organisation are serious about ensuring effective health and safety practice is part of how they do things in their organisation. Then management at all levels within this organisation must ensure that the proper organisational structures and procedures are in place to support an organisational culture which is conducive to health and safety. Middle managers must drive this culture.

Q. Management within Deice Crystal are interested in safety?

Table 9 - Management Interest in Safety

	(N = 10)
Highly Agree	7
Agreed	3
Not Sure	-
Disagreed	-
Highly Disagreed	-

It is encouraging to see that in both sites that the vast majority of the respondents (70%+) are of the belief that management are interested in safety. Management ultimately have the responsibility for implementing safety policies and procedures within the workplace. This data suggests that the implementation of safety policies and procedures will be more effective if managers at all levels continually support these safety policies and procedures through their positive actions and behaviour. After all actions do speak louder than words.

Q. Understanding accident causation will help employees in accident prevention?

Table 10 - Knowledge of Accident Causation

	(N = 10)
Highly Agree	10
Agreed	-
Not Sure	-
Disagreed	-
Highly Disagreed	-

All accidents have a cause and effect. The principal rationale of safety policies and procedures is to ensure a safe place of work, safe systems of work and competent co-workers. Accident prevention is an integral part of a safe work environment. One of the cornerstones of this is understanding how accidents are caused. Without this knowledge it would be extremely difficult to be vigilant from a safety perspective in the workplace. Therefore, it is necessary for all managers to have a fundamental grasp of the factors of accident causation. It is management's responsibility to make this happen, i.e. educating their employees and themselves to the basic principals of accident causation and accident prevention. After all prevention is better than cure.

4.3.2 Individual Attitudes to Accident Proneness

Accident proneness in this case means that the likelihood that an individual or group of individuals will be involved in an accident. Table 11 provides a summary of data results.

Table 11 - Individual Attitudes to Accident Proneness

No	Level of agreement or disagreement with the following statements	(N = 10)				
		HA	A	NS	D	HD
1	It is difficult to train employees in good housekeeping practices	2	1	2	3	2
2	The chances of me being involved in an accident at work are minimal	4	2	2	1	1
3	Accident proneness is a significant factor in the cause of accidents in the workplace	2	1	1	5	1
4	If employees were given autonomy of freedom in accident control - less accidents would happen	1	1	4	3	1
5	Work overload is a significant contributor to accidents in my workplace	-	1	2	1	6
6	People who are impatient are more likely to be involved in accidents at work	4	1	1	2	2
7	People who are aggressive are more likely to be involved in accidents at work	7	1	2	-	-
8	People who are competitive are more likely to be involved in accidents at work	1	1	4	1	3
9	People who are ambitious are more likely to be involved in accidents at work	-	2	1	4	3
10	The chances of managers being involved in an accident at work is minimal	6	2	1	-	1

Key

HA Highly Agree

A Agree

NS Not Sure

D Disagree

HD Highly Disagree

Questions 6-8 inclusive sought to determine if people can have tendencies to behave in a manner which can influence accident proneness and in doing so contributing to accident causation.

The respondents were questioned under four personality elements, i.e. impatience, aggression, competitiveness and ambition. The survey results showed that impatience and aggression were seen as negative factors in safety management.

It is interesting to note that when taken into context, the majority of respondents were of the opinion that people who are impatient and aggressive are much more likely to be involved in accidents at work as opposed to people who are competitive and ambitious. These survey findings on behaviour types need to be taken seriously by management, because there are implications in terms of personnel recruitment and screening, i.e. ensuring a proper person - job fit.

The combined results of the four behaviour related questions, i.e. people who are impatient, aggressive, competitive and ambitious are likely to be involved in accidents in the workplace may be seen in Table 12.

Table 12 - Behavioural Traits Conducive to Accidents (N = 10)

Highly Agree	Agree	Not Sure	Disagree	Disagree Strongly
12	5	8	7	8

Based on the survey data presented in Table 12, it would appear that certain behavioural characteristics, most notably those of impatience and aggressiveness are perceived by some of the respondents as an influencing factor on accidents in the workplace.

4.3.3 Individual Attitudes to the Management of Safety

This section was concerned with how managers perceive key management activities of occupational health and safety and related influencing safety issues. A summary of the survey results may be seen in Table 13.

Table 13 - Individual Attitudes to the Management of Safety

No	Level of agreement or disagreement with the following statements	(N = 10)				
		HA	A	NS	D	HD
1	Better job descriptions increases employees awareness with regards to health and safety	4	3	2	1	-
2	Employee attitudes towards safety is important in the prevention of accidents	8	2	-	-	-
3	Employees should be given financial incentives to improve safety performance	3	2	2	-	3
4	All employees possess the ability to learn how to access hazards and risks at work	5	3	1	1	-
5	Good safety management practices begin at home	5	3	1	1	-
6	Safety rules and procedures can contribute to accidents at work	-	-	2	4	4
7	Employees will consistently observe organisation safety rules are considered softies	1	1	2	3	3
8	It is important to complete accident forms as accurately as possible	9	1	-	-	-

Key

- HA Highly Agree
- A Agree
- NS Not Sure
- D Disagree
- HD Highly Disagree

Overall based on the survey results in Table 13, the data appears to suggest there is a positive attitude amongst the respondents towards safety management. The survey data also raised some important issues which will now be examined further.

Q. Employees should be given financial incentives to improve safety?

Table 14 - Financial Rewards for Safety

	(N = 10)
Highly Agree	3
Agreed	2
Not Sure	2
Disagreed	-
Highly Disagreed	3

It is interesting to note that 5 of the respondents agreed that there should be financial incentives to improve safety. Management need to consider the implications of

these findings in that, do they link employee safety performance with monetary gain. If they do, then they must also consider is financial inducement the right way of adopting best practice on ensuring that the employees continually improve their safety performance. Should managers pay employees to behave safely? If this is the case, one may ask the question, should employers be paying employees to do something which they should be doing naturally and lawfully? i.e. behaving safely in the workplace. The 2005 Health Safety and Welfare at Work Act imposes a duty of care on all managers as employees alike.

Q. All employees possess the ability to learn to assess hazard and risk in the workplace?

The survey results on this question were overall of a positive nature, i.e. 8 of the respondents were of the opinion that all employees have the ability to learn how to assess hazard and risk in the workplace. Management need to capitalise on this positive perception, by further involving all employees in the policy formation of accident prevention programmes for individual departments within each manufacturing site. Employee involvement will help build ownership and commitment by employees to accident prevention programmes.

Q. It is important to complete accident report forms as accurately as possible?

Table 15 - Completion of Accident Report Forms

	(N = 10)
Highly Agree	9
Agreed	1
Not Sure	-
Disagreed	-
Highly Disagreed	-

The response to the importance of completing accident form accurately was very positive i.e. 9 respondents agreeing. It is extremely important that management through continual education and training, ensure that all management/employees understand the importance of accident reporting in learning from accidents and initiating corrective actions.

The survey data on individual attitudes to management of safety is mainly positive. Management need to nurture these positive attitudes in the effective implementation of safety policies and procedures in the workplace.

4.3.4 Individual Motivation to Participate in Good Safety Practices

Motivation is based on the factors which drive an individual or individuals to perform in a certain way or manner. In occupational health and terms, managers have a

responsibility to ensure that they continually strive to motivate themselves and their employees to perform their jobs in a safe manner at all times. Table 16 provides a summary of the survey results.

Table 16 - Individual Motivation to Participate in Good Safety Practices

No	Level of agreement or disagreement with the following statements	(N = 10)				
		HA	A	NS	D	HD
1	If I see a fellow manager using unsafe work practices, I would report it to the Health & Safety Department	5	1	2	1	1
2	I would participate willingly to any safety training programme provided for me	5	5	-	-	-
3	I would willingly involve myself in any safety committee if requested to do so	8	2	-	-	-
4	Employees who consistently observe safety rules are conscious and loyal workers	9	1	-	-	-
5	If asked to do work using unsafe work practices I would always agreed to do so	-	-	-	-	10
6	I would actively co-operate with the Safety Department in investigating an accident	10	-	-	-	-
7	If involved in a notifiable accident I would not want it reported to the Safety Department	-	-	-	-	10

Key

HA Highly Agree

A Agree

NS Not Sure

D Disagree

HD Highly Disagree

In general terms, motivation amongst the respondents to participate in good safety practices, is high. Further comment will now be given on some of the data survey findings.

- Q. **If I see a fellow manager using unsafe work practices, I would report it to the appropriate Health & Safety Department?**

Table 17 - Reporting Unsafe Work Practices

	(N = 10)
Highly Agree	5
Agreed	1
Not Sure	2
Disagreed	1
Highly Disagreed	1

Between not sure and highly disagreeing, 4 of the respondents would not report a fellow manager if they saw him/her using an unsafe work practice. These data findings should be of concern for management, in that if managers are willing to ignore their colleagues in using unsafe work practices, what then are the ramifications for an organisation in successfully introducing and promoting safe work practices? If managers will tolerate unsafe work practices by a few managers, then management need to urgently rectify this negative practice. Failure to do so will continually hamper the foundations of any safety culture.

Q. I would participate willingly to any safety training programme provided for me?

Table 18 - Participation in Safety Training

	(N = 10)
Highly Agree	5
Agreed	5
Not Sure	-
Disagreed	-
Highly Disagreed	-

There is overwhelming willingness amongst respondents to participate in safety training. This high level of motivation amongst the respondents needs to be nurtured by management, in a way the safety training meets the needs of the organisation and of the individuals themselves. None more so than that of the training implications of the 2005 HSW at Work Act.

Q. If my employer asked me to undertake work which involved unsafe work practices, I would always agree to do so?

Table 19 - Employer Requesting the Use of Unsafe Work Practice

	(N = 10)
Highly Agree	-
Agreed	-
Not Sure	-
Disagreed	-
Highly Disagreed	10

Middle managers need to continuously espouse the message that unsafe work practices will not be tolerated at any level.

4.4 SUMMARY

In this chapter a systematic analysis of the survey research findings is given. The findings may be grouped under three main headings which are as follows; Details of Respondents, Organisational Details and the Respondents Perception, Attitude and Behaviour in relation to the implications of the 2005 HSW at Work Act. The main findings themselves may be seen between tables one to eighteen.

Some of the highlights of the survey were as follows: The gender composition of the respondents was 8 males and 2 females. The average length of managerial experience of the respondents is 10 years. In relation to occupational safety training, 100% of the respondents indicated that they received occupational safety training within their organisation. In the past six months since the introduction of the 2005 HSW Act 12 accidents have happened in comparison to 20 for all department areas.

In regard to the Organisational Details Survey results, some of the main findings were as follows: 100% of the respondents did know what a safety statement is. In the reporting of accidents 100% of the respondents did know if all accidents were reported in their organisation. In relation to the respondents being knowledgeable of the 2005 Health Safety and Welfare at Work Act and in particular their duties under this Act, 40% of the respondents are not familiar with the 2005 Act and in particular what their duties are under that Act even though they have received training on same.

The research study in itself was conducted in a manner which exploited in-depth the key elements of occupational health and safety.

CHAPTER FIVE

**DISCUSSION, CONCLUSIONS
AND RECOMMENDATIONS**

5.0 INTRODUCTION

In the preceding chapter the survey findings were analysed. The findings of the survey analysis will now be discussed based on the three main areas covered under the research questionnaire. The objective being to determine the survey respondent's perception of hazard and risk as it applies in light of the 2005 HSW Act. From the discussion, conclusions and recommendations based on the research findings will be drawn with particular reference to how they apply in the effective implementation of health and safety policies and procedures in the workplace by middle managers within Deice Crystal.

5.1 RESPONDENT PROFILES

Where age and length of experience was combined, results showed that 80% of the respondents were over 35 years of age.

Middle managers experience has shown time and time again that adequate training provides the crucial link between an efficient and safety conscious managers compared to that of an inefficient and unsafe employee. It is essential that management should ensure by deeds and actions that occupational safety training for managers is an ongoing and dynamic process which will ensure that safety competency through training becomes part of the work ethic and safety climate with each organisation.

5.2 RESPONDENTS KNOWLEDGE OF ORGANISATIONAL DETAILS

The survey findings did raise responses which are quite negative in nature and which management need to urgently address in a positive manner. Areas of particular concerns were as follows:

- 40% of the respondents had no knowledge of the 2005 Health Safety and Welfare at Work Act. These findings are quite disturbing in that the 2005 Act is the cornerstone of the proactive approach to health, safety and welfare in the work environment.
- 20% of the respondents were unaware that the Health and Safety Authority Inspector had visited their respective site in the past 12 months. This lack of knowledge on behalf of the respondents demonstrates that management need to improve their safety communication network, whereby important matters relating to health and safety are communicated promptly and correctly to all concerned.
- 15% of the respondents were unaware of who carried out regular safety audits within their respective site. The audits in fact are carried out by the safety manager and safety representative together. Management and unions alike have an obligation to ensure that employees fully understand that safety audits are collectively carried out by a management and safety representative. It is important that all employees know this, because it demonstrates commitment to occupational safety by the organisation.

The three areas which generated sizeable negative responses from respondents described above have manifested itself through management's failure in terms of communicating successfully to all employees on important issues of health and safety. Middle management need to quickly address the inadequate safety communication process by devising and enacting dedicated communication channels to ensure that an efficient and effective occupational health and safety communication flow. The 2005 Act will be a catalyst in ensuring this happens in an efficient and effective manner.

5.3 INDIVIDUAL PERCEPTION OF HAZARD AND RISK AND ILLUSIONS OF CONTROL IN LIGHT OF THE 2005 HEALTH SAFETY AND WELFARE AT WORK ACT

In relation to whether the respondents perceived if hazard and risk was present in their organisation, the following emerged. 40% of the respondents agreed that risk was present. These findings demonstrated that "Illusions of Control" existed as described by McKenna (1993).

1. The over thirty five's may have a more realistic view of their limitations in assessing risk.
2. The under thirty five's may perceive themselves as better educated and therefore have a better understanding of their work environment.
3. The length of experience of each respondent may be a factor, where the over thirty five's may have increased ability in assessing risk more accurately.

It is conceivable to suggest that mature employees may be more suitable candidates in relating to the safety aspect of their job in the organisation, as they are unlikely to overestimate their ability in dealing with hazard and risk. Experience is always a great teacher in ones life.

90% of the respondents agreed with the statement that management alone should be responsible for health and safety within the workplace. This in itself has serious implications for management in that, it is correct to say that management are ultimately responsible for safety within the organisation - then the question must be asked, what involvement do the individuals have for their own personal safety whilst at work? It is extremely important in ensuring commitment and understanding to safety policies and procedures, that all employees be they management or workers recognise that what their role is in occupational safety within the workplace. In essence health and safety is everyone's concern.

Occupational health and safety as all managers should know, is an integral part of every employees work. Therefore, it is important that when selecting people for jobs, that an element of the screening process should involve identifying behavioural traits amongst the candidates which would help ensure a better person job fit. For example, if a job involves a high risk factor, it may not be wise to select an individual who displays traits of aggression or impatience.

The perception of the respondents were also probed to determine what attitudes were held by individuals in relation to safety within their organisation. The results were largely positive in that 60% of the respondents had a positive attitude towards safety

within their organisation. This high level of positive attitudes amongst the respondents needs to be built upon and utilised by management, by channelling this positivity in ensuring good safe working practices on the shop floor.

In relation to motivation for health and safety - the survey revealed that in general the respondents had a high level of motivation towards health and safety. For example, 100% of the respondents would want an accident that they were involved in reported to the Safety Department. Furthermore, 100% of the respondents indicated that they would be willing to participate in safety committees if required to do so. In essence, middle managers enthusiasm needs to be harnessed to its full potential.

5.4 LIMITATIONS OF RESEARCH

It is important to stress that there are limitations to the research conducted through a questionnaire survey. These limitations are as follows:

- It is possible that some of the respondents who completed the questionnaire, may not have fully understood the questions being asked of them. Any results due to this occurrence could distort somewhat the findings.
- There may have been respondents who were not convinced of the assurances of confidentiality. This may have resulted in replies which lacked the detail that the respondents would have liked to have given.
- There is the possibility that some of the respondents may have given replies based on what they believed the survey questionnaire author wanted to read.
- The sample size selected for this research could be a limiting factor in that it may not be truly representative of the population.
- Personal bias may have influenced the impartiality of the researcher in relation to ethnographic observation.

5.5 CONCLUSION

To conclude, the research findings highlighted the existence of a mindset amongst middle managers who have a genuine caring attitude to the well being of themselves, and that of teams which they lead. The research findings would also support the middle managers' concerns in regard to the training gaps which exist within their own competency level with regard to meeting the requirements of the 2005 Health Safety and Welfare at Work Act.

The reality of the situation is that as an organisation, Deice Crystal is continuously seeking more innovative and creative ways of maximising their market penetration in the crystal market place. This same level of enthusiasm exists amongst middle managers within the organisation in terms of their own commitment and drive to facilitate best practice with regard to all internal health and safety policies and procedures. Senior management need urgently to harness this desire and enthusiasm, as failure to do so will at best be ignorance on their behalf, at worst will be derogation of duty both under common and statute law. Furthermore, communication is the life blood of any organisation, Health and Safety communication to middle managers and from them must be ongoing and continuous in Deice Crystal's unrelentless drive to promote a positive safety culture and climate in light of the 2005 Health Safety and Welfare at Work Act.

5.6 RECOMMENDATIONS

The research showed that:

1. Specific training interventions are required to develop middle managers knowledge and skill base to ensure a competency level which will enable them to embrace health and safety challenges in a robust and rigorous manner, that will deliver best practice in terms of health and safety policies and procedures.
2. Regular communication audits should be conducted, to ensure that all middle managers are within the loop, when it comes to the ever changing world of Health and Safety legislation, approved codes of practice, European Directives, and Health and Safety Authority Guidelines. After all ignorance is not a defence when it comes to health and safety negligence.
3. Middle managers have a pivotal role to play in championing a positive health and safety culture and climate within Deice Crystal. An integral part of preparing middle managers for this role is to ensure that the practical realities of any new legislation is fully understood by all middle managers.
4. Middle managers have a pivotal role in ensuring that accident prevention is the driver of how they do business in their own respective departments. For this to happen it is imperative that all middle managers are fully aware of accident prevention strategies which are practically sound and theoretically implementable.

5. Middle managers need to be continuously vigilant in terms of ensuring that negative elements do not develop which may challenge or compromise Deice Crystal's way of doing business in light of the 2005 Health Safety and Welfare at Work Act.
6. Middle management have a responsibility to ensure that they continually promote good safety behaviour at every opportunity. This promotion is best delivered by giving praise and feedback to employees whenever possible in relation to Deice Crystal's occupational safety performance.
7. It is imperative that middle managers continually manage up the way in terms of ensuring that senior managers perceptions and understanding of Health and Safety are in alignment with that of middle managers through both deeds, words and actions.

APPENDIX 1

Dear Sir/Madam

I am currently studying for a B.A. (Hons) in Human Resources Management with the National College of Ireland. This primarily involves writing a dissertation which involves research work.

I am investigating the implications of the 2005 Health Safety and Welfare at Work Act on middle managers within the context of how these managers perceived their changing roles and responsibilities in light of this fundamental piece of Health and Safety legislation. I would be grateful if you would complete the questionnaire before 30th June 2006, and return it to Deice Crystal. Completion of this questionnaire is entirely voluntary.

Testing of the questionnaire suggests that it should take you less than 30 minutes to complete. In order to maintain anonymity you should not place your name on the questionnaire. No individual results will be included in the dissertation or in any reports of this research. Only overall and group results will be reported.

Finally, I thank you very much for taking the time to complete this questionnaire. I hope the findings will be useful to your own organisation and to myself.

Yours sincerely

Michael Ryan

QUESTIONNAIRE

SUBJECT: HEALTH AND SAFETY

**An Investigation to Assess the Implications of the 2005 Health Safety and Welfare Act
on Middle Managers within Deice Crystal**

Please tick where appropriate

Section 1 - Details of Respondents

1. Gender
Male Female
2. Age of Respondent years
3. Length of service within the organisation years
4. Work section within the organisation _____ department
5. Have you received training in health and safety within your organisation?
Yes No
6. How many time if any were you involved personally in occupational accidents within your organisation in the last two years?
Time
7. Have you ever been out of work due to an occupational injury?
Yes No

Section 2 - Organisational Details

	Yes	No	Don't Know
1. Does your organisation have a safety statement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Do you know what the purpose of a safety statement is?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does your organisation have departmental safety guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do you know where these safety guidelines are located in your own departments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does your organisation have a safety representative?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Are regular health and safety audits carried out within your organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Do you know who carried these audits out?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Do you know if there is a written statement of policy on health and safety within your organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Are all accidents reported within your organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Does the union take an active role in health and safety within your organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Are safety records kept within your organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Do you know the difference between a hazard and a risk within your own organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Does your organisation have a safety committee?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	Yes	No	Don't Know
14. Do you know who the health and safety authority is?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Does your organisation have employees trained in First Aid?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Are accident report forms available within your organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Do the union and management meet regularly on issues of health and safety within your organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Are you familiar with the 2005 Health Safety and Welfare at Work Act?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Do you know the location of the nearest First Aid Kit within your department?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Does your organisation conduct safety awareness campaigns?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Do you know if a Health and Safety Inspector has visited your organisation in the past 12 months?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Do you know the evacuation procedure if you hear the fire alarm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3 - Individual Perception of Health and Safety in Light of the 2005 Health Safety and Welfare at Work Act

	<i>Highly Agree</i>	<i>Agree</i>	<i>Not Sure</i>	<i>Disagree</i>	<i>Highly Disagree</i>
1. Our organisational culture is one that emphasises a high level of safety consciousness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Health and safety in the workplace concerns everyone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Too much emphasis is given to safety within the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Management have the full responsibility for safety management within the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The chances of an accident occurring in my workplace is slight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. My organisation is not a high risk company in health and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. On this site management are interested in safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. It is important that companies record accurate accident levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. All accidents are reported within the organisation using the correct procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	<i>Highly Agree</i>	<i>Agree</i>	<i>Not Sure</i>	<i>Disagree</i>	<i>Highly Disagree</i>
10. If I see a fellow employee using unsafe work practices, I would report it to the appropriate authority	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Employees should bear some of the work ensuring that the organisation is a safe place to work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. On this site, safety training is thorough efficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Employees who consistently fail to observe safety rules should be disciplined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. There is a positive attitude towards safety in my organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Getting the work done or achieving production targets is more important than observing safety rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Some employees are more accident prone than others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I would participate willingly to any training programme provided for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Better job descriptions would enable employees to know what is expected of them in terms of health & safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	<i>Highly Agree</i>	<i>Agree</i>	<i>Not Sure</i>	<i>Disagree</i>	<i>Highly Disagree</i>
19. The attitudes of employees towards safety is important in the prevention of accidents in the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. It is difficult to train employees in good housekeeping practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I would willingly involve myself in any safety committee if I were requested to do so	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Employees who consistently observe the safety rules and procedures of the organisation are conscious and loyal workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Employees should be given financial incentives to improve safety performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. There is a certain amount of risk involved in any job undertaken in the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. The chances of me being involved in an accident at work is minimal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. If my employer asked me to undertake work which involved unsafe work practices, I would always agreed to do so	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	<i>Highly Agree</i>	<i>Agree</i>	<i>Not Sure</i>	<i>Disagree</i>	<i>Highly Disagree</i>
27. I would consider myself more skilful than my fellow workers in assessing risk and danger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. All employees possess the ability to learn how to assess hazard and risk in the workplace	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Good safety management practices begin at home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Accident proneness is a significant factor in the cause of accidents in the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. If employees were given more autonomy of freedom in engaging in accident control less accidents would occur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. I would actively co-operate with my supervisor in investigating an accident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Work overload is a significant contributor to accidents in the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Safety rules and procedures can contribute to accidents at work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	<i>Highly Agree</i>	<i>Agree</i>	<i>Not Sure</i>	<i>Disagree</i>	<i>Highly Disagree</i>
35. Employees who consistently observe the organisations safety rules and procedures are considered “softies”	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. People who are impatient are much more likely to be involved in accidents in the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. People who are aggressive are much more likely to be involved in accidents in the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. People who are competitive are much more likely to be involved in accidents in the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. People who are ambitious are much more likely to be involved in accidents in the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. All accidents are preventable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. The chances of others being involved in accidents at work are minimal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. If I were involved in a notifiable accident, I would not want it reported to management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	<i>Highly Agree</i>	<i>Agree</i>	<i>Not Sure</i>	<i>Disagree</i>	<i>Highly Disagree</i>
43. It is important to complete accident forms as accurately as possible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. Understanding accident causation will help employees on accident prevention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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