DISABILITY AND SAFETY MANAGEMENT SYSTEMS, IN TQM AND NON-TQM ORGANISATIONS

This Thesis is prepared for submission to the University of Surrey for the award of

Doctor of Philosophy

by

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ABSTRACT

Historically society has, at various periods in time, protected the health, safety and welfare of those most disadvantaged by using socially based collective mechanisms. Within the United Kingdom the model used to achieve this collective protection has developed from proscription, under the Factories Acts, to a more self-regulatory and risk based approach advocated by Lord Robens under the Health and Safety at Work etc Act 1974 and its relevant statutory provisions. The body tasked with providing examples of good practice and regulating the provisions of the Act, The Health and Safety Executive, advocate a management-led model using the principles of total quality management (TQM). This model is one which purports to focus on a systematic and empowered approach by involving all staff in the evaluation and reduction of systematic error within processes throughout the whole organisation. It can be argued that the contemporary disadvantaged are no longer the children of the industrial revolution but are those members of society who seek employment yet are handicapped by society through disability or impairment - the paradigm of disability.

This study sought to explore this paradigm of disability and TQM within the context of two contrasting industrial sectors - the engineering and retail sectors. The study sought to break new ground by exploring whether the TQM model, which advocates system totality, reduction in variation and continuous improvement as fundamental principles, does in fact provide improved cognitive adequacy (a construct of institutional responsibility, communication and problem resolution) within the paradigm of disability.

The study used a triangulation methodology to collect qualitative data at the individual and institutional level. This involved a number of phases comprising group discussions, focus groups and self-completed questionnaires (n=1135) by economically active disabled, impaired and handicapped individuals and at the organisational level case study analysis (n=8) and self-completed questionnaires (n=2181) by institutional key players.

Although the construct of disability is multifaceted, the study concluded that at the individual level a number of factors were perceived to be ranked higher and as such more
important to disabled employees in maintaining their health, safety and welfare. These were further classified into 'software' and 'hardware' domains of a safety management system with institutional social support being most important. Social support comprised support, communication and trust and was perceived to be low at the organisational level. At the institutional or organisational level social support can be measured using the theory of cognitive adequacy comprising responsibility, communication and problem resolution. When measured at the organisational level, via the policy domain, cognitive adequacy was once more concluded to be low or absent. These results applied equally to individuals within both the retail and engineering sectors.

The study also concluded that, at the organisational level, safety systems which can be categorised as formal did not exist to meet the needs of the disabled within the organisations studied. This was particularly evident at the policy domain level where it was noted that few companies had included provisions for the allocation of specifically defined responsibility and control. However there existed many informal sub-systems which had developed through group dynamics and personal interrelations. In many cases those tasked with operational responsibility were unaware of such sub-systems. There also existed many barriers within the disability paradigm to both the duty holder and disabled employees meeting specific duties under the Health and Safety at Work etc. Act 1974. In particular communication, both verbal and non-verbal, presented the highest ranked barrier to organisations achieving a high cognitive adequacy condition.

Each construct was measured using contingency tables and log-linear analysis to determine any association between TQM and non-TQM organisations for the paradigm of disability. Significant differences in data acquisition, performance measurement and problem resolution existed between TQM and Non-TQM organisations. However in relation to the paradigm of disability, the study concluded that the data supported the null hypothesis that, in the context of the paradigm of disability, no significant differences were exhibited between the safety management systems (SMS) of organisations who had adopted TQM and those that had not. Holistically this study has provided a deeper understanding of the complexity of the disabled paradigm and safety provisions at work.
ACKNOWLEDGMENTS

The work described within this thesis was carried out on a collaborative basis with my previous employer The London Borough of Tower Hamlets and my present employer The Engineering Employers' Federation; to both I am grateful.

The work was supervised directly by Dr Leslie Hawkins of The Robens Centre for Occupational Health and Safety, Surrey University and throughout I was provided with assistance by the Staff of the Robens Centre. Without the collective support from the above this thesis would not have been possible.

The work was carried out with the assistance of the Engineering Employers Federation, in particular Stephen Walters, The British Retail Consortium and a number of disability organisations. These include the RNIB, RADAR, Employers Disability Forum and a number of regional employee associations. Their co-operation made the study of what is a difficult subject manageable.

Above all I am indebted to my family, Karen, Lauren and now Jonathan for their forbearance over the past three years.
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<td>APAU</td>
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<td>CA</td>
<td>Cognitive Adequacy</td>
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<td>CSF</td>
<td>Critical Success Factor</td>
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<td>CWQI</td>
<td>Company Wide Quality Initiative</td>
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<td>DDA</td>
<td>Disability Discrimination Act 1995</td>
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<td>EHO</td>
<td>Environmental Health Officer</td>
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<td>HSW</td>
<td>Health and Safety at Work</td>
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<td>HSW Act</td>
<td>Health and Safety at Work etc Act 1974</td>
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<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
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<td>KRA</td>
<td>Key Result Areas</td>
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<tr>
<td>PDCA</td>
<td>Plan, Do, Check and Action</td>
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<tr>
<td>SFRP</td>
<td>So Far as is Reasonably Practicable</td>
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<td>SME</td>
<td>Small to Medium Enterprise</td>
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<td>TQC</td>
<td>Total Quality Culture</td>
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<td>Total Quality Management</td>
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<td>QIP</td>
<td>Quality Improvement Programme</td>
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CHAPTER ONE
INTRODUCTION

'There must be a beginning of any great matter, but the continuing unto the end until it be thoroughly finished yields the true glory'

Sir Francis Drake 1587 (Source OLWP, 1981)
CHAPTER ONE

1.1 Introduction

Historically the necessity to protect the health, safety and welfare of individuals most disadvantaged in British Society has paralleled the growth of industrialisation in the 19th century (Foskett, et al., 1993). The fashion in which this protection has been afforded has evolved from a very proscriptive and prescriptive regime to one of organisational self regulation (DOEMP, 1972) and control systems based upon formalised management systems and assessment of risks (see Management of Health and Safety at Work Regulations 1992 (DOEMP, 1992a)). Although these developments have broadly led to improvement in the safety provisions for employees, for a minority this is not the case. Although today there exist no visible dark satanic mills, with children working eighteen hour days, there nevertheless remain elements of the labour force who are disadvantaged. It is merely the context in which they are disadvantaged which has changed. Illustrations of this dilemma may be seen through the work of Bone, (1991) and Friedman-Jimenez (1989) on ethnic minorities, Metcalf and Thompson, (1990) on ageism, and Barnes, (1991) on individuals with disabilities. This study concerns the latter.

Within the UK the disabled population has witnessed much societal intervention, and most, if not all, has been directed at improving access to employment by way of laws based upon anti-discrimination practices. In comparison, however, there is no evidence to suggest these legislative developments have extended to securing the health and safety of those disadvantaged once employment has been secured. Notwithstanding the absence of statutory case law, for some time now civil case law has recognised such individuals to have special needs if they are to enjoy a healthy life and to work safely without harm to themselves or others. To achieve this employers must adopt a philosophy of prudent avoidance. That is where there is a foreseeability of potential risk and that foreseeability is acted upon.
One example of where prudent avoidance, as a concept, was not followed and where consequently there was a failure in the principles of health and safety law was the case of the Hinkley Point disaster in 1989. During the evidence, subsequently, given at the trial it was concluded individuals who do not fit the anthropometric population mean (individuals with disabilities) may be so disadvantaged that their health, well being and even life may be directly affected (Preddy, 1989). In Preddy's evidence on the safety provisions in place prior to the Hinkley point disaster, he emphasised just some of the problems modern organisations may encounter when employing individuals with disabilities. He argued equally strongly that these problems, in many instances, were and are foreseeable - a test of legal defence - and as such under present legislation subject to control measures and ultimately preventable.

1.2 Regulatory Perspective

To prevent such harm to individuals under a contract of employment, employers have both a Statutory and Common Law duty to take reasonable precautions to ensure the health, safety and welfare of employees. In broad terms this establishes a precedent that under the doctrine of self regulation duty holders establish a systematic approach to managing the processes and elements which constitute the organisation's hazards, in a systematic manner. Accordingly duty holders must establish 'at risk' groups, determine likely hazards, assess the risk and then secure appropriate control measures. Under current UK legislation - the Health and Safety at Work etc. Act 1974 - there is a requirement for duty holders, who employ five or more, to put in place a policy document that outlines in broad terms the organisation's commitment to health and safety, the 'organisational' structure to support the commitment and arrangements for implementing both. This can be classified into three principal domains namely, policy, hazard and the monitoring domain (Amis & Booth, 1992). Collectively this philosophy attempts to construct what is termed a 'positive safety culture'. To achieve this the
regulating Health and Safety Executive\(^1\) and contemporary literature advocate that the duty holders adopt a formalised Safety Management System (SMS) that holistically develops each domain collectively and systematically. These were the principles promoted by the Robens committee (DOEMP, 1972) and authors such as Kahn-Freund (1972). Kahn-Freund supported the idea that collective protection involved three elements, 'Auxiliary', 'Regulatory' and 'Restrictive'. Within these classifications the Auxiliary function facilitates collective bargaining; the regulatory function provides supporting statutory minimum terms and conditions and the restrictive function provides the rules. Overall these functions provide accepted norms which facilitated the foundations for the construct of the 'safety culture' phenomena and an organisation's safety management system. Historically this regulatory system has been built on the premise of the two factor model with work and health in juxtaposition. Recent developments however suggested that there is a third factor that must also be considered, 'the organisation'.

1.3 Safety Management Systems

Considerable literature exists regarding safety management systems (SMS) (Bamber, 1994; Wright, 1994; Amis & Booth, 1992; Hale et al. 1991; Pidgeon et al 1991; HSE, 1991; Waring, 1989; Saunders & Wheeler, 1992; Hurst et al, 1989) and safety culture (CBI, 1990; HSE, 1991) both in the UK and abroad. Although much literature has evolved from the engineering and manufacturing industrial sectors, more recently it has been consolidated by the Nuclear Industry in attempts to placate public concerns after disasters such as Chernobyl and Sizewell (Bogard, 1989; ACSNI, 1993). The ACSNI (ACSNI, 1993; ACSNI, 1995) reports provide good examples of contemporary literature surrounding the subject. Although the terminology of SMS implies relevance to large complex organisations, small to medium sized enterprises (SME's) may also utilise the philosophies that underpin the diverse systems models advocated by the literature. In essence the Health and Safety Executive (HSE) define the 'systems

\(^1\) The HSE's role inter alia is to provide information on best practice.
approach' as 'the collective elements of a management system which are particularly concerned with health and safety performance and legal compliance, as well as loss control' (HSE, 1991). Others such as Wright (1994) consider a SMS to be the means by which organisations control risk through the management process and Krause, (1995) considers it an employee-driven approach based upon the foundations of a quality system. However it is recognised that any system must operate within the boundaries of capability of individuals (Hale & Hale, 1972) and the organisation (Cox & Cox, 1993; Cox & Cox, 1996). Therefore they can be termed cybernetic systems (Westrum, 1988) as they operate in a socio-organisational and socio-technical environment.

Ostensibly SMSs can be described as an open system comprising constructs made up of many elements or variables that functionally include organising, planning, measuring performance and auditing or reviewing. It is against these parameters that enforcement officers must base their judgments on legal compliance by the duty holder (HELA, 1995). Enforcement officers, be they Her Majesty's Inspector of Health and Safety or local government Environmental Health Officers (EHOs) are tasked with securing compliance with the Health and Safety at Work etc. Act 1974 (HSW Act) and its relevant statutory provisions by providing advice on best practice, relevant experience and where necessary the law itself. In the context of local authority enforcement officers and the paradigm of disability, contemporary literature provides no evidence of such 'best practice' or guidance on meeting statutory duties. Equally guidance is not easily available by which duty holders and regulators may determine what constitutes 'reasonably practicable' measures for securing the health, safety and welfare of disabled employees. The doctrine of 'so far as is reasonably practicable' (SFRP) is one of the most fundamental principles of the HSW Act. To summarise, the HSW Act is an enabling act which places a general duty on employers to ensure so far as is reasonably practicable the health, safety and welfare of all employees and others affected by the undertaking (section 2(1)). This general duty is underpinned by relevant statutory provisions in the way of regulations and codes of practice which have been approved by the Health and Safety Commission and guidance provided by the Health and Safety Executive. However the doctrine has been defined as:
"Reasonably practicable is a narrower term than physically possible and seems to me to imply a computation must be made by the owner in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) placed on the other and that, if it be shown that there is gross disproportion between them- the risk being insignificant in relation to the sacrifice - the defendants discharge the onus on them" from Edwards v. National Coal Board (1949).

Although the literature provides no specific evidence of guidance on how employers should meet this standard the more progressive and mature organisations may have well developed and formalised safety management systems (Scott & Bruce, 1987). Many of these have cultivated quality initiatives such as BS 4778, BS 5750 or ISO 9002 and Total Quality Management (TQM) as an integral part of their business improvement programme. These, it is postulated, effectively alter the organisation's culture and as such it has been speculated they may also be effective in improving the safety culture and safety performance of organisations (Redman et al., 1995).

This relationship between quality management and safety management (Deacon, 1994, Lascelles & Dale, 1991) is also recognised by the HSE as representing a model of best practice and is stated as such in its official guidance on managing health and safety, often referred to as HS(G) 65 (HSE, 1991). The problem, nonetheless, with such models is that they have not been properly evaluated to determine the magnitude, if any, of their effectiveness and their ability to meet the needs of both the employer and the labour force (Wright, 1994). There is also much criticisms of such models because for "systematic control " of safety management to be effective there remains an implicit reliance on organisations having the infrastructure necessary to adopt such a mechanism (Lammin, 1994), and many do not.

1.4 The disability paradigm

Although not all organisations employ disabled individuals and their activities may not affect other disabled individuals, the limited studies that have taken place it is suggested
the disabled account for nearly 7 Million of the total UK population. Of these 3.8 per cent are of working age, economically active and occupationally handicapped (Barnes, 1991; Prescott-Clark, 1990). In real terms this equates to approximately 1.2 million in employment\(^2\) (or 3.2 per cent of the working population). Natural demographic changes occurring by disabled individuals reaching working age; the impact of the 'Care in the Community Programme' and Governmental intentions to reduce its annual expenditure on occupational disability benefit\(^3\) will, it is suggested, have the combined effect of elevating the potential number of individuals who are disabled within the active labour market. Furthermore the new provisions under the Disability Discrimination Act 1995 (DDA), may provide increased access for more disabled individuals to the labour market. In addition the DDA provides that all employers will not discriminate as a result of disability and shall make reasonable adjustments to accommodate disabled employees. What is ultimately determined to constitute the term reasonable will inevitably have health and safety implications.

1.5 Operational Perspective

In the context of this study the disabled labour force can be described as the customer and the employing organisation as the contractor in a client/contractor relationship. Using this quality approach to safety, an organisation's safety performance can be classified into hardware and software provisions (Amis and Booth, 1992; Deacon, 1994). Hardware provisions are characterised by clearly defined structures and processes which are readily quantifiable. Consequently they have not, historically, presented safety professionals and regulators with significant problems. However, for the software aspects such as human systems, activities, attitudes and relationships (Waring, 1995) it has not

\(^2\)It is currently estimated that only 381,409 of these were registered disabled under the Government's 1944 Disabled Persons (employment) Act and in employment. Figures based on 12 April 1985. Source Labour Market Trends Feb 1996

\(^3\)Achieved by returning as many individuals, in receipt of benefit, back to employment (LINK, 1994) and altering the criteria of disability assessment tests (DSS, 1994)
been so easy. Furthermore the safety, health and welfare provision for individuals can be seen in terms of a three factor model (Cox & Cox, 1993) rather than the generally accepted two factor model. That is to say the organisation, work and health are part of the health effect model. It is widely accepted by organisations who follow quality improvement programmes that the ability to change software factors is fundamental to an organisation's development (Oakland, 1989). This can be referred to as the paradigm of organisational quality.

Deductively it therefore follows that if organisations who have adopted quality improvement programmes address fundamental principles such as changing their culture, adopt the principle of 'right first time', follow 'continuous improvement' and 'employee empowerment' this will also facilitate improvement in the well-being of the labour force. This will be to the extent that those who are normally disadvantaged by society may be afforded a system/process which assesses and controls the risks to their health, safety and welfare in a much more heuristic and holistic manner. Consequently it is hypothesized that those organisations that adopt a TQM philosophy demonstrate improved cybernetic systems of component elements of organisational SMSs for individuals with disabilities.

1.6 Rationale for the Study

The rational behind this study is to fill a void within the literature that will assist enforcement officers, industry and safety professionals in meeting the principles of the socio-legal system and assist employees with disabilities to maintain employment once they have secured it. Overall the objective is to explore both the normative cybernetic systems and non-cybernetic systems that operate within specified industrial sectors, explore 'best practice', and establish the foundations necessary to meet the doctrine of 'so far as is reasonably practicable'. In turn this will assist regulatory agencies determine good and poor practices and assist in reducing the confusion which currently surrounds the subject. Moreover this will also provide a foundation from which policies may be
developed and deployed. Principally this study is driven from the Environmental Health Officer's perspective but equally it has attempted, through comparative study, to gather information that will also be relevant to Her Majesty's Health and Safety Inspectorate.

1.7 The General Theoretical Construct of the Study

It is believed that knowledge should be understood within its social and historical context (Knorr-Cetina, 1981) and hence it is fundamental to an understanding of currently held paradigms that these aspects are reviewed within the historical developments of the field of study and against its current state. This study attempts to demonstrate from a management perspective how socially perceived paradigms of quality impact on safety culture and the needs and expectations of the disabled labour force. Furthermore it is intended to demonstrate how the Total Quality (TQ) paradigm and the phenomena of health and safety for the disabled paradigm represent a specific void in the theoretical development of safety management systems. To achieve this, the study will attempt to trace the development of safety management systems from a four stranded base of collective protection (health and safety), management theory, quality theory and the perceptions of the disabled labour market. Finally it is intended to synthesise those variables that are deemed important and to develop the methodological approach adopted in this study in exploring relationships and deducing the theory.

However, before embarking upon theoretical development it is considered useful to understand the background from which the theoretical construct is based (Pugh, 1984). Predominantly this study is reflective in that it attempts to examine the theory of quality against the constructs/phenomena of safety management systems and disability from a socio-legal/organisational perspective and in two contrasting industrial sectors. It is well known that there are two, if not more, contrasting and long standing debates as to the philosophical position from which methods of research should be derived. One is strongly in favour of the positivistic approach while in contrast the other favours the social
constructionalist approach. Having synthesised both theoretical approaches it was concluded that organisations are in fact socially constructed and given meaning by people (Bhaskar, 1978; Harre & Secord, 1973). Consequently the focus of this study is not merely dedicated to the gathering of facts and the measurement of how certain patterns occur. It is hoped an appreciation of the different constructs and a richer and deeper understanding of how organisations meet their statutory and moral duty to the disabled labour force will be gained. It will thus explain how and if quality does in fact provide benefits for the disabled labour force.

1.8 Research Design

This study followed a philosophical and socio-legal approach which is reflected in the study design. Within the literature surrounding research design much conflict exists as to which should come first, the theory or the data. However as Morgan and Smircich (1980) specify "the appropriateness of a research approach derives from the nature of the social phenomena to be explored". As this study was more exploratory and theory building than confirmatory it followed that the theory must be developed through comparative methods which eventually concluded in the development of substantive theory (Glaser & Strauss, 1967). Thus the current literature on the subject was explored while building a framework from which to identify the dependant and independent variables of interest.

1.9 Thesis development

The thesis will develop by analysing each domain in turn. The first domain explores the collectivist health protection models, the second focuses on the development of management theory and the third on quality. Finally each is tied together by an exploration of the domain of the disabled labour force and the significance of the problem. This thesis is structured so that Chapter Two provides a review of the literature, the historical perspective to the phenomena of collective health protection, safety management systems, and finally the paradigm of disability. Chapter Three
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attempts to determine the disabled community's perceptions and concerns regarding the phenomena of health and safety protection by using focus groups as primary sources of data collection. The emerging patterns and theory are then supported in Chapter four via self completed postal questionnaires. Chapter five explores by case study the normative cognitive adequacy of the cybernetic and non-cybernetic systems at the organisational level. Chapter six adds further support from data gathered by self completed questionnaires from a randomly selected sample of the population. These were then subjected to critical comparative analysis to prove or disprove the study hypothesis. Chapter seven draws on the previous chapters, the data collected and discusses the findings. Finally a conclusion to the study is drawn and suggestions made for further areas of research.
CHAPTER TWO
LITERATURE REVIEW
AND
HISTORICAL PERSPECTIVE

History offers a stimulus of imagination and understanding which can enrich a man's life by deeper insights into human behaviour. It is perhaps the greatest humanist medium of our time, educational and cultural.

CHAPTER TWO - HISTORICAL BACKGROUND AND REVIEW OF LITERATURE

2.1 Introduction

The theoretical constructs underpinning contemporary models of collective health protection for Britain's labour force emerged from a number of separate domains. They include Sociology, Industrial Relations, Human Resource Management, Medicine, Public Health, Engineering, Statistics and Management theory. At a more specific level the literature can be classified broadly into safety (Dawson et al., 1988; Heinrich, 1950; Bird & Loftus, 1976; Broadbent et al., 1986; Hale & Hale 1972), concerned with the act and consequence of accident causation, avoidance and regulatory mechanisms; occupational health (Schilling, 1984; Waldron, 1995; Harrington & Gill, 1992), dealing with the more chronic ill health effects of employment; and the socio-legal aspect which deals with the social interface of the regulatory regime (Hutter, 1988; Hutter, 1986; Djang, 1942; Howells, 1974 and Kahn-Freund, 1972).

This study sought to explore, from a socio-organisational perspective the paradigm of disability within the context of workplace safety management systems. It specifically sought to address the hypothesis that safety management systems (SMS) which are integrated within a Total Quality Management Culture (TQMC), positively affect the paradigm of disability at the organisational level. To address such a question it was first necessary to explore the paradigm of disability, develop a cognitive adequacy model for disabled employees and explore the cybernetic systems and sub-systems which constitute organisational safety management systems. It was subsequently necessary to compare the commonalities of the integrated and non-integrated models with that of the cognitive adequacy model (Westrum, 1988). However prior to embarking on the study proper there was a need to develop a greater understanding of the social, legal and theoretical background to the domains of disability, collective health protection, SMS and TQM. It
is the intention of this chapter to provide such an introduction to each of these domains while continually developing the theoretical concepts that underpin the study's hypothesis. It is presented in sections first of all considering the historical development of British society's social and philosophical foundations on which the modern regulatory model is founded (section 2.1.1-2.1.3). Following this is an outline of contemporary regulatory control theory, the European dimension and supporting evidence underpinning the need for health and safety to be effectively and systematically managed (section 2.1.4.- 2.1.8). Next follows a discussion on a deeper understanding of the paradigm of disability by exploring the concept of a disability continuum, evolving terminology, prevalence of disability in Britain and the employment issues surrounding disability and occupational health and safety management (section 2.2.1-2.2.16). This is followed by cultivation of the concept of Total Quality Management (TQM) in the context of Safety Management Systems (section 2.3.1-2.3.15). Finally the chapter concludes by drawing on the individual themes and identifying the void within the literature to which this study proposes to contribute (2.3.16).

2.1.1 The Constructs of occupational health and safety.

A formal collective and proactive mechanism to protect employees' health is, relatively speaking, a new phenomena within the UK. In the earliest records, around the second century AD, it was reported necessary for individuals to take ownership of their own health and develop their own coping strategies to protect themselves from the rigours of employment as best they could (Legge, 1934). Early examples of such attempts included practices such as miners cloaking themselves in sacks and rags to prevent ingesting dust known to cause disablement. During this period the dominant accepted theory was that 'the increasing risk of occupational disease and illness was a necessary and concomitant result of development' (from Agricola's *De Re Metallica*, 1494-1555 see Schilling, 1984; Waldron, 1995). Thankfully progress was made and a greater understanding of the

1 Translated in to English by Herbert Hoover an Engineer who eventually became President of the USA.
relationship between health and work emerged. One of the most prolific was Bernadino Ramazzini (1633-1714) who in his *DeMorbis Artificum Diatriba* (1713) published the first systematic study of diseases associated with trades and work. It was through such understanding that it became apparent that there was a social need to control workplace conditions and practices. This was particularly important as Schilling (1984) alluded to 'at the time no economic reason existed for them to protect the life and health of workers'.

However as time moved swiftly on the industrial revolution took hold and many of the labour force that had migrated from the rural countryside to the new factories became ill, disabled and a burden upon society. It has been argued that the rapid industrial growth that occurred, transformed the English labour force from a once thriving cottage industry, producing cotton, to one that has been described as an age of 'Dark Satanic Mills' (Daumas, 1962; Mercer, 1979). This reputation was acquired as a result of escalating levels of sickness, malnutrition, illiteracy and the resultant high incidence of disability and death from injury. A quote from Hammond & Hammond (1917) 'bare and desolate... without colour, air or laughter, where man, women and child ate slept and worked' illustrates the conditions many had to endure. Robert Roberts (1974) in his book 'The Classic Slum' provides an even more rigorous and deeper insight into the prevailing conditions of a typical early industrialised culture. It was however a combination of public opinion, economic necessity and the failure of the common law system to deal with these conditions- and secure the health of the young - that was the resultant driver behind the decision to adopt a punitive and regulatory approach to improving and maintaining workplace conditions.

The activists driving change during the early seventeenth and eighteenth century included a number of eminent Liberalists and Humanists such as Anthony Ashley Cooper (1801-1885), Sir Robert Peel, Robert Owen (1771-1858), Michael Sadler (1780-1833) and Edwin Chadwick (Frazer, 1950; Finer, 1956; Foskett et al., 1993). They, collectively, and despite much opposition from other industrialists and ultra right wing elements of Parliament successfully introduced collective protection via the first Factory Bill.
(Hutchinson & Harrison, 1911). This was a particularly significant example of social accountability. It is generally considered to mark the beginning of the principle of caring for the health, welfare and safety of those who cannot look after themselves i.e. the young, the old, the indigent and the sick or disabled (Howells, 1974). Subsequently the Bill was placed upon the statute book and entitled 'The 1802 Act for the Preservation of the Health and Morals of Apprentices and others employed in Cotton and other Mills'.

2.1.2 Social Accountability through a legal infrastructure

The Health and Morals of Apprentices Act, although a significant piece of social intervention, only set a minimal standard of protection. Furthermore it applied solely to one class of people, apprentices and only to those working in Mills. Being prescriptive in nature it placed a legal duty on owners to provide, for example, two clean washings of quicklime yearly, a supply of fresh air and suitable and sufficient clothing for apprentices. It also required that no night work should be carried out and that all apprentices should be instructed in reading and writing. Nevertheless it soon became apparent that its requirements were frequently evaded and the spiral of accidents, long term illness and resulting disabled children finishing life as beggars continued. Consequently attempts were made to fortify it in 1819, 1825 and 1831. Further attempts were made to secure the health of employees in 1833 by extending the requirements to young people in cotton mills and through the appointment of four government inspectors². Despite these improvements the majority of the labour force continued to be subjected to abhorrent conditions of employment, frequently on a par with slavery where it was not uncommon for cases of ill health, accidents and fatalities to be accepted as everyday occurrences. Those particularly at risk of harm were children and the infirm.

Children and the malnourished were particularly at risk as they met the anthropometric

²These inspectors were the first Factory inspectors from which developed the present day Health and Safety Executive Inspectors and Environmental Health Officers.
requirements necessary to clean excess twine from cotton bobs and were cheaper than
their parents to employ (Daumas, 1962). Although they potentially had speed and agility
there were occasions where they were not quick enough and heavy machinery closed in
on their fragile, tired and weak bodies. The weakness often reflected the excessively long
hours they, and women, were required to work to earn minimal pay (Frazer, 1950).
Unfortunately those who were not quick ended up disabled spending the remainder of
their short lives characterised as incomplete or defective human beings, subjected to
neglect, persecution and more often than not, death (Burgdorf & Burgdorf, 1975).
Similar treatment was bestowed on children who, due to malnutrition and contact
diseases such as syphilis, were born with deformities (Humphries & Gordon, 1992).
Holistically they were the most disadvantaged in society and the most abused by society.
To a degree this was capitalism without social controls or moral justice and the antithesis
of what is now termed the ergonomic approach (as advocated by Pheasant, 1992; Glendon
& Mckenna, 1994).

To reduce the economic implications of such disabling conditions, social accountability
saw further development in regulatory statutes. The introduction of the Factories Act
1844 was one of the prime movers in this development. With its introduction the
dominant philosophy of collective protection radically changed. It placed new duties
on employers to, for the first time, safeguard mill gearing and only allow cleaning of
machinery whilst not in motion. Dimensionally this was a move from welfare provisions
to safety provision and is commonly referred to as the 'Factory Act model' of regulation.
In its wake there followed, until 1856, a succession of seven factory statutes and
subordinate regulations each providing for the safety and welfare of children, young
persons and women. These included provisions for fencing of machinery, hours of work,
meal times, and rest periods. Overall therefore this period saw the realisation of an
increasing net of legal statutes to protect those most disadvantaged by the pervading
dominant workplace culture; firstly for health and welfare and then later for safety.

It was one that was to last for many years. In spite of the progress made, the ever
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spreading net of prescriptive regulation resulted in much confusion by regulators i.e. the Factory Inspectorate and those who were regulated i.e. Industry. An extract from Hutchinson's and Harrison's (1911) *A History of Factory Legislation* aptly illustrates this point:

'This century of experiment in factory legislation affords a typical example of English practical empiricism... Each successive statute aimed at remedying a single ascertained evil. It was in vain the objectors urged that other evils, no more defensible existed in other trades, or amongst other classes or persons of ages other than those to which a particular bill applied.

This confusion signalled the need for a radical restructuring and consolidation of the many statutory instruments that had evolved. This finally came about in 1972 through the setting up of a Commission chaired by Lord Robens to explore 'the provisions made for the safety and health of persons in the course of their employment and to consider whether any changes were needed'  

2.1.3 The Roben's Era of legislative control

The Roben's rationalisation is still considered to be the most comprehensive review of safety and health provisions for persons in the course of employment ever undertaken (Dawson et al.1988). It included widespread consultation and took over two years to complete. The commission evolved, as with its predecessors, against a background of increasing accidents and ill health at work, fraught industrial relations and a period of powerful Trade Union activity (Beaumont, 1983; Williams, 1960; Lockyer, 1974; Crighton & Gunningham, 1985). To resolve these problems Lord Robens remit was to develop a suitable and comprehensive regulatory model that would reduce accidents and ill health at work, yet not place an unnecessary burden on industry. In addition it should include provision for employees to be consulted on safety matters. The report contained a number of new and innovative principles. The main doctrine to emerge from the report is illustrated by the following extract:
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"The primary responsibility for doing something about the present levels of occupational accidents and disease lies with those who create the risks and those who work with them ... Our present system encourages rather too much reliance on state regulation and rather too little on responsibility and voluntary self generating effort... There is a role for government action. But those roles should be predominantly concerned with influencing attitudes and creating a framework for better health and safety organisation and action by industry itself" (Robens committee 1972)

The report concluded that there was a need for new and comprehensive provisions under an enabling Act. It stated:

The new Act should contain a clear statement of the basic principles of safety responsibility. It should be supported by regulations and by non-statutory codes of practice... The scope of the new legislation should cover all employers, employees and those self employed.

This was accomplished in the Health and Safety at Work etc. Act 1974 (HSW Act) which remains the contemporary model for regulating workplace health and safety in Britain. In comparison with the early collectivist models of the eighteenth and nineteenth century the 1974 HSW Act represented a considerable development in the manner collective accountability and protection was afforded to all classes of employees (Hepple, 1983). Components suggested by the report as fundamental to the success of any regulatory framework included that it should secure the Health, Safety and Welfare of all employees, and that it should consolidate what was then a diversified set of laws and enforcement mechanisms (Hepple, 1983). This was to be achieved through the application of the underlying principles of 'self regulation', 'workforce involvement', and the doctrine of 'reasonable practicability' (Rideout, 1979). Furthermore this objective was realised by placing the responsibility for health, safety and welfare firmly on employers, employees, suppliers and any other persons involved with the supply and provision of goods through work (Broadhurst, 1978). The Act also saw a change in the level of duty and consequently the burden of proof which must be sought for compliance.

No longer would there be absolute liability as with the Factory Act model, but the burden of proof would be based on Robens doctrine of so far as is reasonably practicable
The actual definition of *reasonably practicable* came some time later in the adversarial context of the judiciary. It contained interesting developments in the manner in which duty holders and regulators would base compliance with statutory duties under the HSW Act. In effect this clarified the position and subsequently set the benchmark for collective bargaining on the degree of protection afforded employees by employers. The true extent of this is illustrated in the definition placed on SFRP in the landmark case of *Edwards v NCB*:

"Reasonably practicable is a narrower term than physically possible and seems to me to imply a computation must be made by the owner in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) placed on the other and that, if it be shown that there is gross disproportion between them - the risk being insignificant in relation to the sacrifice - the defendants discharge the onus on them" from Edwards v. National Coal Board 1949.

From the above it can be observed that there is now an economic imperative in the form of a cost benefit analysis, or more recently termed cost benefit assessment, in the computation of the reasonableness of the preventative action. In effect this invites the consideration of expense and trouble in setting the standards of health, safety and welfare. It follows then that the more affluent the employer, the higher the standard would expected to be (Rideout 1979). This argument has been supported by the current Director General of the Health and Safety Commission, (Bacon, 1995).

Philosophically the Robens approach was to transcend the pure punitive model of the past, where employers and employees who did not observe prescriptive rules were punished, towards one which purported to foster improvement through self regulation (Dawson, et al. 1982). In the new approach industry was to accept and manage the risks within its own curtilage. This can be termed the internalisation of safety management.
Ostensibly Robens attempted to use the enabling regulatory system to alter the attitudes and culture of the workplace towards one that fostered safety, prevented ill health and reduced the need for external enforcement action. A better understanding of the reasoning behind the nature and distinction of this decision can be found in Kahn-Freund's (1972) book *Labour and the law*. In it he formulated the distinction between Auxiliary, Regulatory and Restrictive functions of the law. He perceived health and safety decisions being made against a background of industrial relations turmoil and strongly argued that the auxiliary function would support the autonomous collective bargaining system. He advocated this would be achieved by providing norms and sanctions, stimulating the bargaining process, facilitating Trade Union membership and thus collective bargaining. The regulatory function complemented this by introducing statutory minimum terms and conditions and the restrictive function provided the rules for the conflict that would occur in a collective bargaining scenario. However over the last decade there has been a recognisable reduction in Trade Union membership, resulting in low influence and thus reduced collective bargaining within the workplace (TUC, 1996). To a degree the collective bargaining element of the approach has recently been reinstated by the introduction of new regulations requiring employers to consult with employees who are not members of a recognised trade union (Health and Safety (Consultation With Employee) Regulations 1996 (DOEMP, 1996a)).

Operationally, to meet the HSW Act statutory duties, employers of five or more employees or duty holders are required to write a policy document outlining the duty holder's commitment, organisation and arrangements for health and safety, employ safety specialists and make provisions for employee representatives and committees. It was envisaged that by this action employers would identify hazards, make an assessment of the risks employees and others would be subjected to, and ensure commensurate control measures were put in place to deal with them. This was the internalisation of safety responsibility.
The success of this philosophy was however very much dependant on individual elements of the process being carried out. For instance the organisational communication process was something Robens saw as essential if the Act was to meet its objectives. He anticipated safety representatives and safety committees would, through the collective upward, downward and lateral communication links, fuse together the framework and structure of dialogue necessary for collective agreement to be achieved. This collective bargaining philosophy was not new. In fact historically there had been many unsuccessful attempts to legislate employee involvement in workplace safety. As early as 1927 there was a proposal from the Factory Inspectorate for compulsory safety committees in the iron and steel type industries (under section 29 of the Workman's Compensation Act 1923; Djang, 1942). Further attempts were also made in the guise of the Employment (Inspection and Safety Organisation) Bill in 1953, which yet again was unsuccessful.

The internalisation of HSW did not however, prove to be as successful as originally anticipated. Although the nomination of a safety representative, the setting up of a committee and the drawing up of a policy are all identifiable actions which a company can be measured against they are not ideal. They are in fact, only very general measures of an organisation's response to the regulatory framework and acknowledgment of their responsibility. They can be seen as imperfect measures because the setting up of a safety committee does not in itself mean there will be an improvement in real time safety. It has been argued that an organisation's safety policy presents similar limitations (Dawson, et al, 1982 and the HSE, 1976). This has been viewed as surprising as both the Robens committee and subsequently the Health and Safety Commission advocated this as the vehicle to effect the shift of emphasis from external to self regulation. As a result of Dawson et al's (1982) work, further research was carried out by the Accident Prevention Advisory Unit (APAU, 1980) who concluded an organisation's health and safety policy statement remained a vital part of the practical expression of self regulation that distinguished good and bad safety performance. Therefore an organisation with five or more employees must have a suitable policy document outlining its general statement, how it facilitates the policy objectives and the arrangements in place to achieve the
objectives of the health and safety policy.

2.1.5 The Regulatory Function

As described earlier the underlying principle is that the minimum level of health and safety performance must be inspected by an external body to ensure industry is regulating itself. This task falls to the modern day descendants of the first four government Labour inspectors (HSE, 1983). Their role, however, has changed somewhat from the original where spot checking individual pieces of machinery for guarding prevailed, and 'where workers' safety was viewed merely as a matter of discipline' (Howells, 1974), to one of systems auditor (HELA, 1995).

The HSW Act created the Health and Safety Commission (HSC) with the primary responsibility of administering the law and practice enshrined within the Act. In turn, the HSC established the Health and Safety Executive (HSE) as the executive arm of the Commission with responsibility for controlling the modern day Factory Inspectorate. However due to the nature of the Act and its embracement of all employees, actual enforcement responsibility is divided under the Enforcing Authority Regulations (DOEMP, 1989). The HSE and Local Authorities (LAs) share the responsibility, with Her Majesty's Health and Safety Inspectors and Environmental Health Officers (EHOs) tasked with the operational enforcement. Consequently the HSE are responsible for regulating 650,000 premises and 9 million employees (HSE, 1995) and local authorities 1.2 million premises and 15 million employees (Bacon, 1995).

An important addition established under the 1974 Act was the introduction of the Employment Medical Advisory Service. The specific role of EMAS is to 'identify health hazards related to employment... and advise on the medical aspects of any employment problems, particularly the employment of disabled people and rehabilitation...' It has

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3 In one form or another Factory doctors have been in existence since 1898
recently undergone downsizing and flattening to carry out this task but currently comprises approximately 108 Doctors, 64 nurses and around 450 officially appointed medical practitioners to carry out medical examinations (Carter, 1995).

In broad terms the role of the regulators is to visit the premises of duty holders and secure the prevention of harm by using information on good practice, the knowledge and experience of the inspector and where necessary the law. In carrying out this function they have traditionally followed the axiom of persuasion rather than punitive action as a matter of course. In response to a changing market there has been political pressure to decrease the burden on business, reduce the frequency of enforcement visits and statutory notices served (HSE, 1995). To meet this need the regulators have developed new risk based approaches to inspection and regulation, where they play more the role of arbitor than enforcer (Carson, 1970) and are more aware and concerned with the gross social cost benefits of punitive action (Bartrip & Fenn, 1980; Bartrip & Fenn, 1983).

Contemporary management techniques used by regulatory agencies are based upon a priority rating scheme where premises which present the highest order of risk to employees and others are inspected on a more frequent basis, while those which demonstrate commitment, good management and effective control strategies are inspected less often.

2.1.6 The systems model

The approach that has evolved, by the regulators and those who are regulated, to secure the health, safety and welfare of employees, can best be described as a systems model (Waring, 1991; Waring, 1995; Perrow, 1984). Organisations approach the phenomena by advocating a systematic methodology based on elements and components interacting with each other at different levels. Broadhurst, (1978) argues the process comprises of four elements arranged in a closed loop (see figure 2.1). The first relates to the foreseeing and planning process involving the identification of likely hazards and proposing
suitable procedures to be embodied as part of operations processes or plans. The second is the giving of orders in the light of that plan and the requirement for them to be implemented (action). The third is the control of the work which involves checking the results achieved. Finally the loop is closed by feeding the information back to the plan stage which in turn effects a modification of the plan.

![The Systems Model](Image)

Figure 2.1 The systems model (After Broadhurst, 1978)

It is recognised that systems are dynamic (Checkland, 1981; Waring, 1995), may be closed or open (Emery & Trist, 1981) and may be complex (Kauffman, 1992, Churchman, 1971; Howarth, 1995). As such intervention must take place within the boundaries of the system and its elements or components must be effectively controlled by senior and line management functions if the policy objectives are to be deployed. Although Lord Robens charges line management with the primary responsibility for ensuring safe working practices or as commonly termed safe systems of work this responsibility was not specifically included in the Act. This may possibly be as a realisation of the difficulties seen by some as a result of the conflict of interests. Nichols and Armstrong for instance in 1973 argued strongly that management's overriding concern for production lead to direct pressure on workers to take risks. Similar arguments were also put forward by Haraszt
(1977), Grunberg (1983) and Dwyer (1993). Nevertheless as with most statutes clarification came about as part of the judicial system where systems has been defined as:

'What is system and what falls short of system may be difficult to define ... but, broadly stated, the distinction is between the general and the particular, between the practice and method adopted in carrying on the master's business of which the master is presumed to be aware and the insufficiency of which he can guard against, and isolated from day to day acts of the servant of which the master is not presumed to be aware and which he cannot guard against; in short, it is the distinction between what is permanent or continuous on one hand and what is merely casual and emerges in the day's work on the other hand' (Lord Justice Clerk (Lord Aitcheson) in the court of session in English's case, 1936 SC 883 at 904.

To summarise the HSW Act is an enabling act which places a general duty on employers to ensure so far as is reasonably practicable the health, safety and welfare of all employees and others affected by the undertaking (section 2(1)). This general duty is underpinned by relevant statutory provisions in the way of regulations and codes of practice which have been approved by the Health and Safety Commission. Furthermore BS 8800 on 'Occupational health and safety Management systems' adds further support to the systematic approach to safety management. Although not certifiable by third part assessors it presents a realistic and operational model by suggesting approaches adopted in both HS(G) 65 'Successful Health and Safety Management' and ISO 14001 'Environmental Management Systems'.

2.1.7. European Intervention

There have been a number of recent changes to the U.K. relevant statutory provisions. Many have emerged as a result of the requirement to implement article 117 and 118A of the Treaty of Rome. A brief summary of the background to this element will now be given.

As European country borders diminished in importance and levels of industrial integration and community development increased, so, it was perceived did the need for effective
management of the labour force's occupational health, safety and welfare. The European Communities Act 1972 took the UK into membership of the European Community and committed it to the Treaty of Rome. Its primary objective was to attain free trade within the market without unfair trading at the expense of the workforce (Neal & Wright, 1992). Minimum health and safety standards were introduced by qualified majority voting, in contrast to unanimity, in order to prevent the unscrupulous from gaining market advantage through poor standards of employee protection. Article 100 and 100A of the treaty are important to health protection as they facilitate the "approximation of laws" by allowing harmonisation of working conditions. Under a subsequent amendment to the treaty (Single European Act 1986), article 118A provided a more focused concern for occupational health and safety (Barrett & Howells, 1993). Prior to 1987 only a handful of Directives exclusively concerned with health and safety had emerged. However due to a realisation of concerns in 1989 this changed with the introduction of the 1989 Framework Directive and the daughter directives on occupational health and safety at work. This was a further deviation from the pure economic rationale which the union originally set as its objective, to one that is referred to as the social dimension. This is also reflected in the Social Chapter and the Action Programme of 1989. The combined effects of these set the scene for the introduction of new regulations under the HSW Act, generically referred to as the 'six pack'. In terms of the actual protection of the disabled labour force, while at work, arguably the most important regulations to evolve from this are the Management of Health and Safety at Work Regulations 1992 (DOEMP, 1992a) and the Health and Safety (Workplace) Regulations 1992 (DOEMP, 1992b).

Under the framework directive there has also been a change in the philosophy of regulating health, safety and welfare standards. In contrast to the prescriptive regulatory regime of the pre Robens era, the new principles of regulatory action are firmly grounded in the philosophy of assessment of risk to individuals, groups and processes⁴. Although this can be seen as something already implicit within the HSW Act it has at the

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⁴ The Control of Substances Hazardous to Health regulations 1994 implicitly requires duty holders to assess the risks, control those significant risks, provide information to users and document them.
very least become more explicit and, it is suggested, (Pantry, 1995) forced a greater awareness on employers of their responsibilities to ensure a safe and healthy workplace, safe systems of work and improved risk management and assessment procedures. At the operational level this requires employers to identify hazards, carry out a suitable assessment of risks and then put in place effective control measures (Management of Health and Safety at Work Regulations 1992(DOEMP, 1992a)).

The philosophy of identifying hazards and assessing subsequent risk is similarly adopted by the regulatory bodies at national and local level to prioritise resources and action levels. These priorities are determined upon evidence collected under statute on accidents and dangerous occurrences that occur in the workplace environment. Such data are collected at the individual, organisational, industrial and national level (DOEMP, 1995; HSE, 1995) so that it can be analysed and used to prioritise hazards and estimate the risk to similar exposed employees. In fact, under the 1992, Management of Health and Safety at Work Regulations (DOEMP, 1992a) and the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) (DOEMP, 1995) it is a legal requirement for all employers to carry out such a generic assessment of their work activities and report to statutory bodies certain accidents and dangerous occurrences. However it should be considered at this juncture that in light of changing work patterns (Bacon, 1995), poor reporting (Hodgson, et al. 1993), and the adequacy of the statistics generated (Nichols & Guy, 1993; Tombs, 1992) there is much opposition to the appropriateness of this system of social protection. In particular this mechanism does not facilitate identification of trends in accidents to specific groups or sub-group. One pertinent example is that no data are currently available on the degree or extent that disabled individuals have accidents in the workplace.

2.1.8 The Summary

To draw the previous elements together, within the UK the contemporary methodology of securing the health and safety of individuals while at work is self regulation, monitored
by regulatory authorities whose dictum is to use advice on best practice and the doctrine of SFRP to secure legal compliance. At the organisational level this is secured by the duty placed upon employers to effectively manage their health and safety by the processes of planning, organising, measuring, auditing and reviewing. This is further underpinned by the necessity to carry out a generic risk assessment to identify hazards and subsequently formulate adequate control strategies via rule sets. In principle this necessitates organisations putting in place a safety management system which is a subsystem of the organisation's primary management systems. In turn this comprises elements or components which operate and integrate with the social domain within the boundaries of the organisation to form its 'safety culture'. Those organisations wishing to adopt a best practice model of a SMS are advised, in principle, by both the BS8800 and the HSE,(1991) to follow the principles advocated by organisations who have adopted a Total Quality Management programme.

This philosophy of social accountability through self regulation has its foundations in the need to protect those most disadvantaged and at risk within our society. As discussed earlier disadvantaged members of society remain, it is only their class that has altered. They tend not to be the sick, children and women, their place being firmly filled by those members of society who are physically, sensory or psychologically impaired or disabled. It is to this class of individual that this thesis now turns.

2.2 The Paradigm of Disability

*Disabled Citizens*

"The picture is a grim one. Mrs Clarke's account of the sufferings of the physically handicapped and the measures by which attempts are being made in different countries to deal with this problem, is not a pleasant or cheerful reading. It pictures something which no community claiming to be either Christian or civilized can shut its eyes."

Lord Beveridge 1951 (source OLWP, 1981)
2.2.1 *Introduction to the Paradigm of Disability*

Historically work, work organisations and health have been seen in juxtaposition, with employment as being detrimental to an individual's health (Watkins, et al, 1992). However, it may equally be argued that a person's health may adversely affect others health within the organisation (Baxter, 1991; Harrington, 1990). One example could be that of a high level crane driver who may not be able to continue in that occupation if suffering from blackouts, as injury may occur to the individual and others. Equally, not everyone has the same expectations or perceptions of what is meant by health. A person confined to a wheelchair, having been paralysed from the waist down, may be superbly fit, participate in the paraplegic Olympic games, and be able to gain meaningful employment. However just as to compete in the Olympics modifications would be required to the individual's wheelchair, so would certain modifications and adaptations be necessary at work (Edwards, et al, 1988; Buczek et al, 1990; Frazer & Pityn, 1994). This class of individual although considered healthy, remain in occupational health terms a vulnerable group (WHO, 1993). Emerging theories suggests they are the contemporary disadvantaged (Barnes, 1992) and as such classified as at risk.

2.2.2 *Disability - The contemporary disadvantaged*

Throughout history disabled people have experienced social discrimination, segregation and exclusion (Barnes, 1991; Oliver & Barnes, 1991; Berthoud et al, 1993; Doyle, 1995). They have been characterised as incomplete or defective human beings, subjected to neglect, persecution and death, and at the other extreme to charity, social welfare and paternalism (Burgdorf & Burgdorf, 1975). Whilst this might be the case in some instances it is also recognised that the common experience of most lies somewhere between these two poles (Doyle, 1995). Notwithstanding this centrality there is commensurately much evidence of the existence of cultural barriers that are interwoven within the society in
which we live and work (Oliver, 1985; Thompson et al., 1990; Barnes 1991; Barnes, 1992; Massie, 1994, Gooding, 1994; Liberty, 1994). This is particularly pertinent in the context of employment where disabled people are recognised as suffering significantly from discrimination and disadvantage. They can be further handicapped by ignorance, fear and prejudice of employers and fellow employees alike (Lyth, 1973; Walker, 1982; Stevens, 1986).

Humphries and Gordon (1992), in a historical study of disability in Britain, illustrate a vivid and damming account of how British society - one that is regarded as civilised- has treated its physically and mentally impaired members. The authors graphically depicts prejudices so strong that mothers felt the need to terminate the lives of their new born babies and others who, because they were considered evil, imprisoned their children for a significant period of their lives. Such practices were not, however isolated to Britain. The ancient Greeks were so obsessed by perfection they also prematurely ended the lives of their deformed children by drowning them (Goldenson, 1978). In fact Society's quandary over what to do with its members who deviate from the standard form has been deliberated over by many academics, politicians and extremists alike. The writings of Hitler, Marx, (1970) the Eugenics society and the development of the 'Genome project', (Wilkie, 1993) provide a formative illustration of the feelings surrounding the subject. As previously described the industrial revolution saw the emergence of long term illness and disability attributable to poor living and working conditions. It then followed the path of 'economic man' (Marx, 1970) where it was argued that to reduce the economic burden on the capitalistic industrial society, controls had to be exerted over the way in which the young, vulnerable and infirm developed through enforced institutionalisation. Ostensibly the dominant philosophy was to lock away individuals not perceived normal in hospitals, special care institutions or homes. This treatment in most cases resulted in their mental health being adversely effected (Humphries & Gordon, 1992; Topliss, 1974; Topliss, 1982).

Public opinion has nevertheless changed with the emergence of pressure groups who
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fought for the recognition of disabled people's rights and freedom from prejudice (Oliver, 1985). Many consider society has progressed in terms of social accountability, equality, and socio-technical progress to the degree that it is now possible and necessary for individuals with quite severe disabilities to seek employment in a variety of industrial situations (Oliver, 1990). In fact contemporary studies suggest that of the working population three percent or 1.2 million are disabled (OPCS, 1988; Prescott-Clark, 1990; Sly, 1996). Each month on average 760 disabled job seekers are employed through the job centre scheme (IRS, 1995) and that nearly 2000 disabled graduates will leave academia each year to seek employment in the open market (EFD, 1995).

Employment is in fact one of the fundamental human rights to have emerged from the hard work of campaigning and lobbying by supranational disability associations, international organisations such as the International Labour Organisation, United Nations and Brussels. Examples of measures include the International Labour Organisation's requirement for governments to formulate and implement policies for vocational rehabilitation and disabled employment while ensuring equal opportunities in open and competitive employment (ILO, 1983). The UN Declaration on the rights of Disabled persons expresses 'that they have the right to social and economic security and to a decent level of living, [and] according to their capabilities, to secure and retain employment or to engage in a useful, productive and remunerative occupation' (UN, 1975 & UN, 1993). Even at the European level there is a mandate that all member states 'take adequate... measures to encourage employers to admit disabled persons to employment'. Article 26 of the EC Charter of Fundamental Social Rights of Workers goes so far as to state that disabled persons, what ever the origin and nature of their disablement must be entitled to additional concrete measures aimed at improving their social and professional integration. These measures must concern, in particular, according to the capacities of the beneficiaries, vocational training, ergonomics, accessibility, mobility, and means of transport (EEC, 1986).

5The Disability Discrimination Act 1995 will or should improve access to different levels of employment over the next decade.
When combined with new legal rights that have been afforded individuals with disabilities, under the Disability Discrimination Act 1995 (DEESS, 1995), it is suggested this may increase potential opportunities, and improved access to regular employment in an open and competitive market. These developments it is claimed have also promoted a new confidence in many individuals with disabilities (Oliver, 1990; Finkelstein, 1991; Oliver & Barnes 1991; Barnes, 1992; Shakespeare, 1993). However as stated earlier it has taken many years to reach this stage. It is useful to explore the historical background to society's provisions for disabled individuals as it assists in the understanding of the issues faced by regulators, organisations and individuals when attempting to evaluate the boundaries of SFRP and best practice.

2.2.3 Historic perspective of disability

Disability within humans is as old as the human race itself. To some extent this preposition has gained support through the findings of archaeological researchers who unearthed clear evidence of disabling conditions such as osteoarthritis and tubular spine in Egyptian mummies dating back 5000 years. However as a minority group in any society collective provisions for these individuals has, relatively speaking, been a recent phenomena. Historically welfare, health and safety provisions for the disabled have their foundations in provisions for the poor and infirm and parallel the work of the early industrial philanthropists. This preposition stems, most probably, from the economic rationale (Topliss, 1978) that has paralleled industrial growth within our collectivist society. Acceptance of the economic rationale was first seen in the Elizabethan Poor Law of 1601 which focused on the belief that those who were unemployed were in such a position as a result of their own making (Vives, 1926). This belief persisted long into the industrial age of the nineteenth Century and was claimed to be the principal motivating

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6This model of social accountability has much in common with those of the 1973 Rehabilitation Act and the 1990 American's with Disabilities Act which have both achieved a much higher level of public awareness and appear to be effective.
factor behind Edwin Chadwick's (First EHO) Poor Law Amendment Act of 1834 (Finer, 1956). However this acceptance of individual culpability was soon to be challenged. Chadwick's own "Sanitation Report of 1842" discussed the multiplicity of Public Health factors that prevented full employment. The results of a study of 27,000 paupers by a Doctor Smith in 1850 he concluded that over half were unable to gain employment as a direct result of their disability, long term sickness and invalidity (Frazer, 1950). In effect this led the Poor Law Board to create the Public Health Boards in 1848 (Frazer, 1956). It was around this era that a change of thinking occurred. No longer was the emphasis placed on deterring pauperism, (unemployment) but instead emerged a shift of policy towards one of preventing ill health and disability in the first place. This was illustrated by several attempts to set up hospitals and dispensaries for the treatment of the sick and infirm; with a view to eventually enabling a return to employment. Such a change in policy, coupled with the emergence of the 'Education' era, saw the realisation that providing for the personal social welfare of individual members of society is often not only compatible but conducive to the economic and social well being of society (Swain, et al 1993).

In focusing particularly on provisions for disabled members of society, it can be argued that this resulted from government recognition that their needs are compatible with the needs of others in society (Topliss & Gould, 1993; Topliss, 1974; Swain, et al, 1993). This does not however necessarily mean the needs of both are similar or in parallel. Individuals with disabilities by virtue of their disability often have unique needs (Tennstedt, et al, 1994; Sirkjita et al. 1969; Cartmel & Bannister, 1969; Tichauer, 1970; Katz et al, 1978). Society, in order to address this, has attempted to identify those needs and provide services that will enable individuals with disabilities to become fully functional and economically active members of society (Pinker, 1971; Sleeman,1973; Sleeman, 1979).

2.2.4 Development of Legislative Provisions for the Disabled

Individuals with disabilities have an equivalent need for employment to any other member
of society and yet it is suggested that as a class of individual they are more disadvantaged than able bodied people in securing employment and maintaining it (Sly, 1996). The literature would suggest that such employment issues were first addressed in Britain after the Boer War, when public sympathy called for voluntary organisations such as the Lord Roberts Workshops to assist in providing employment for soldiers wounded in battle. Further provisions were not forthcoming until the second World war when the existence of a shortage of labour was realised. This concern resulted in Lord Tomlinson chairing a committee (1943) to consider the employment needs of the disabled and methodologies to integrate individuals into the labour force. Eventually this report was realised in the quota system of the 1944 Disabled Persons (Employment) Act 7(DOEMP, 1944). Unfortunately for Lord Tomlinson, through failing to consider evidence from outside bodies or independently review the needs of the disabled the committee findings received a considerable degree of criticism. In 1953-56 a second report was published by the Piercy Committee. This committee had been given the remit to review all aspects of the existing provisions for the rehabilitation, training and resettlement of persons with disabilities, (but with utmost regard to economy of the government's contribution). It concluded there was no need for further legislation but did, however point out that there was a severe lack of communication between the medical and industrial rehabilitation services. It recommended more comprehensive training centres for individuals with disabilities. Despite many criticisms of the report the majority of its recommendations were implemented in the form of Garston Manor in 1968 - some twelve years later. Two further reports which influenced the development of social provisions for individuals with disabilities were the 'Tunbridge Report' (1972) and the 'Mair Alex Report' (1972). Both were very critical of previous work, complaining that although much publicity surrounded the achievements, few of the recommendations of the Piercy report (1956) had ever truly been implemented.

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7This provides that all employing organisations with over 20 employees must employ 3% disabled persons. However as it has not been successful it was repealed under the Disability Discrimination Act 1995.
A significant contribution to securing provisions for the disabled was presented in Alfred Morris's Private members bill of 1970. This led to the implementation of the "The Chronically Sick and Disabled Persons Act" which placed a legal obligation on local authorities to monitor and maintain records of such individuals. Indirectly this led to the 1971 OPCS survey "Handicapped and Impaired in Great Britain" Part 1 HMSO London which was the first national survey of disability in Britain (Harris, et al 1971).

Contemporary provisions aimed at increasing the potential number of disabled individuals in employment saw in 1977 the introduction of the Positive Policies initiative aimed at persuading employers to develop enlightened policies on the employment of disabled workers, in 1979 the Fit for Work campaign and in 1991 the Two Ticks symbol campaign. The last of these initiatives entails employing organisations adopting and following the Department of Employment's Code of Good Practice on the Employment of Disabled People (DOEMP, 1990a).

Furthermore the popular services offered to disabled job seekers include a service which assesses the individual's capacity and employment potential, the provision of rehabilitation centres and many vocational courses. Examples of contemporary provisions to assist in employment come in the form of "Disabled Employment Advisors/Disability Resettlement Officers" and "Placing, Assessment and Counselling Teams" (PACT) which are accessed via the Department of Employment's Job Centres. Although PACTS represent a facility which purports to be accessible to all employees, their effectiveness has been much criticised (EFD, 1995). A recent report (DOEMP, 1990b) features many failings of the current provisions and provides a number of recommendations from some of the supranational disability groups such as RADAR, MENCAP, RNIB about making significant changes to the recently demised quota system. The report stressed also that

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8 1944 Disabled Persons (employment) Act (over 20 employees 3% to be disabled. Less than 5% public sector & 25% private sector comply).
mental illness should be considered a disability\(^9\) and concluded that in Sheltered Placement Schemes, individuals with mental health problems receive less consideration than those with more visible disabilities. To a degree many of these recommendations have been addressed in the Disability Discrimination Act 1995 and the formation of the Disability Commission. In broad terms this statutory instrument makes it an offence to discriminate on the grounds of a person's disability.

In reviewing and synthesising the literature it is apparent that most of the legislation arose from the recognition of the need to ensure equality of provisions, access to employment and anti-discrimination. In essence the focus has historically been pro-employment. Much literature also identifies equally significant problems with placing objective parameters around the terminology and signifiers that are used within the academic and operational world of disability. Therefore to gain a deeper more conceptual understanding the 'continuum of disability' will next be explored.

2.2.5 The continuum of disability

Although a simple enough term, 'disability' has many definitions, each addressing the subject from a slightly different perspective and each fitting its own label to people with impairments (Wood, 1980; Harris & Head, 1971; Harris, et al, 1971; Duckworth, 1982; Nagi, 1965; Nagi, 1969; Krause, 1976; Krause et al, 1993; Shearer, 1981). These definitions or labels are not discrete (Wood & Bradley, 1978) and vary greatly. Shearer (1981) identifies one dimension of social labelling that most readers will recognise. She eloquently highlights many of the perceptions that often commence during childhood, such as old people are always deaf; one armed people are villainous with a prothesis (Captain Hook in Peter Pan) and heroic without (Lord Nelson); that blind people are frightening (Treasure Island); that crutches mean poverty (Christmas carol) and that people with peg legs are not to be trusted (Long John Silver). Although this stigma

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\(^9\) Makes the point that mental illness should not be classified as a disability but emphasises that in 1989 there were over six million people diagnosed as having a mental illness. 10% of population. (MIND)
labelling is not acceptable in social terms it is even more unacceptable when there is a need to classify individuals for professional reasons, as is necessary with this study.

In both operational and theoretical terms it is necessary to establish terminology that reflects the views surrounding the subject or policy in hand (Tait, 1981) particularly for health related fields (Mitchell, 1973). However when considering the concept of disability the study of disabled people's terminology and signifiers is very problematic as there exists a wealth of opposing views to each of the terms. Doyle (1995) for example points out that one particular difficulty lies in the dictionary definitions of the three terms central to the study of disabled people, namely Impaired, Disabled and Handicapped, and their experience. He goes so far as to suggest that these terms cast only a little light upon their importance as conceptual signifiers. Burgdorf, (1980), Doyle, (1995) and Barnes (1992) each argue that the most controversial term however is 'handicap' as it signifies disadvantage or inferiority. Much of this perception stems from the origin of its use when it referred to a game 'Hand in Cap' and its later acceptance in the field of horse racing to mean:

'The extra weight or other condition imposed on a superior in favour of an inferior competitor in any athletic or other match; hence, any encumbrance or disability that weighs upon effort and makes success more difficult'

Consequently the term handicap is seen as derogatory and negative. In attempts to counteract this negativism over four hundred recognised disability groups have emerged within Britain (PSI, 1992) each placing sectarian like emphasis on the interpretation of individual terminology.

In 1973 Mitchell drew attention to some of the underlying reasons and the need for the development of proper terminology. The following quote illustrated the reasons for such change:

'Precision used in medical terms is sometimes disparaged as mere pedantry. Nevertheless it is important that words used by doctors [or other professionals] should be carefully defined, in order to allow intelligible
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communications with one another and with associated professions. Precise terminology is also necessary for efficient administration, as in identifying those who require help for specific purposes. A case in point is the family fund established by the British Government as direct aid to the families of children with very severe handicap of congenital origin. But what constitutes handicap, what is very severe and what does congenital mean? If these and other key words such as 'malformation, 'deformity' and 'disability' are not defined, money and services may not be directed where they are most needed and may be used for purposes for which they were not intended'. (Mitchell, 1973)

Notable authors such as Lees and Shaw, (1974); Krause, (1976) and in respect of planning and policy decisions Kelman, (1975) provide further support for the need of clarification. Attention has already been drawn to the three central terms through out the literature with each being used in a number of contexts to mean different things to different people (Nagi, 1969, Ogus & Barendt, 1978; Lees & Shaw, 1974). In an attempt to consolidate what was termed 'lumsy usage' Krause explored the terminology of health and its antonym disability and developed a useful distinction between several kinds of definition of disability. He relates the definition to the profession who it is used by. He further suggests that the concept of disability is best portrayed by three types of disability experience, namely Biopsychological, Social-role disability, and legal disability. Biopsychological disability is that given by those who are qualified to judge physical and mental functioning by generally accepted standards such as GPs. Social-role disability is where the disability is considered relative to the demands made by society, and finally 'legal disability' in which although the definitions may be based on medical and social criteria, have the force of law. Commonly accepted models of disability that may fit within this context include the medical model (WHO, 1980), the ergonomic or anthropometric model (Pheasant, 1982), the social model (Barnes, 1991; Burgdorf, 1980) and the legal model (DEESS, 1995; DOEMP, 1944; DOEMP, 1974). Although it could be argued that the rhetoric concerning which model best fits society is purely a question of semantics, in reality these factors cause practical problems. One such problem is encountered when attempting to make empirical comparisons between different studies carried out on the incidence of disability (to be discussed later). As a consequence of applying different definitions to categorise data it is not possible to compare like with like and therefore
provide a deeper understanding of the special needs of individuals with disabilities. To improve the contextual understanding of this dilemma it is necessary to appreciate the context in which the models are embedded. The following attempts to explore the key schemes of disability currently held.

2.2.6 Disability schemes

Each of the above models of disability attempts to determine distinct definitions between the concepts of disability without exploration of the relationships and ways in which these terms interact with each other. The first conceptual model which attempted to explore such theoretical concepts and how disability operates at the level of human experience was undertaken by Nagi (1965, 1969). This was closely followed by the work of Wan (1974), Williams et. al. (1976), Warren (1977) and Williams, (1979).

One of the most important models of disability was in fact that developed by Williams (1976). His conceptual model links the behaviour of a disabled person to a theory of how disability works to determine that behaviour. Wan (1974) went further and described his work in terms of an 'epidemiological model' of disability. As illustrated by figure 2.2 Wan's model places much emphasis on the significant role of environmental factors as a precondition to disability. This model has much relevance when applied in the context of

![Figure 2.2 - An epidemiological model of disability - Source: Wan, 1974](image-url)
health protection and is highlighted here for further clarification later.

A second model was developed by Warren (1977) who generated his model from a rehabilitation perspective. He used two headed arrows to demonstrate how the social and psychological factors interact with disease. See figure 2.3.

2.2.7 The Biopsychology Model of Disability

Though there are many theoretical models of 'disability' the foundations of defining the conceptual understanding were cultivated by the likes of Wood, (1975) and Taylor, (1977). The later work of Wood (1975) and Wood & Bradley (1978) set the foundations for the 'International Classification of Disease and Handicap' (WHO, 1980) which is recognised as the World authority on the classification of disability (Wood, 1980; WHO, 1980). Wood's draft of the classification, as elaborated by Taylor, (1977) illustrates the changing emphasis from pure health factors to functionality and activity restriction.
However as would be expected from a WHO classification scale it is very categorical in its function and defines the three elements of the continuum of disability in very functional terms. For clarity these are described below:

**Impairments**

The term impairment is generally concerned with the abnormalities of body structure and appearance and with organ or system function, which result from any cause. In principle impairment represents disturbance at organ level. In this context of health experience an impairment is any loss or abnormality of psychological, physiological or anatomical structure or function. This includes:

- Intellectual
- Other psychological
- Language
- Aural
- Ocular
- Visceral
- Skeletal
- Sensory

In reviewing the literature there is little academic debate over the terminology of impairment, possibly because much of it is a matter of clinical judgment.

**Disabilities**

The medical model defines the term disabilities as reflecting the consequence of impairment in terms of functional performance and activity by the individual;
disabilities thus represent disturbances at the function of the person. In effect it is any restriction or lack (resulting in an impairment) of ability to perform an activity in the manner or within the range considered normal for human beings. These can once more be divided into:

- Behaviour
- Communication
- Personal care
- Locomotor
- Body disposition
- Dexterity
- Situational
- Skill
- Activity

Handicap

The term handicap is concerned with the physical and mental disadvantages experienced by the individual as a result of impairment and disabilities; handicap therefore reflects the interaction and adaption to the individual's surroundings. It is a disadvantage for a given individual resulting from an impairment or a disability that limits or prevents the fulfilment of a role that is normal (depending on age, sex, social and cultural factors) for that individual. These can be divided into the following:

- Orientation
- Physical independence
- Mobility
- Occupational
- Social integration
- Economic self sufficiency

Although this classification focuses upon physical or mental impairment and its medical and functional consequences, it at least recognises that the disadvantage experienced by persons is the product of society's negative reaction - or failure to react in a positive manner- towards impairment and disability. The main shift in emphasis demonstrated in this model is one from pathology to consequence.

2.2.8 The ergonomic/anthropometric model

The ergonomic/anthropometric model can also be classified within the curtilage of the biopsychological model as it attempts to address the issue from an anthropometric perspective focusing on the differences disabled individuals exhibit in relation to normal
anthropometric values. The leading exponent of this approach is Pheasant, (1982) who defines disability as a relative term and as such considers all individuals to be disabled. It must therefore follow that to measure disability it must also be carried out in relative terms by comparison with some kind of average or norm or ideal state of health or functional competence (See figure 2.5). Logically speaking a disability is the absence of ability. However if we compare ourselves with Olympic athletes we are all disabled to a degree. The distinction between disability and handicapped is paramount if employers and regulators are to understand the statutory duty of ensuring safe systems and environments for disabled individuals to use and work in. This approach to disability and the work of Wood, (1975) and WHO, (1980) allowed Pheasant to develop the following semantic tree of disability (Figure 2.6):

<table>
<thead>
<tr>
<th>Disease, injury etc. may lead to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impairment - a disturbance of or interference with the normal anatomical, physiological or psychological conditions of the person may lead to</td>
</tr>
<tr>
<td>Disability - the absence of certain abilities which the majority of people posses. A limitation of which may lead to</td>
</tr>
<tr>
<td>Handicap - social disadvantage consequent upon the previous stages</td>
</tr>
</tbody>
</table>

Figure 2.6. The Semantic Tree of Disability (Source: Pheasant, 1982)
2.2.9 Social model of disability

Berthoud et al, (1993), Finkelstein, (1991), and Barnes, (1991), extended and added to the literature by defining the Social Model. Fundamentally they contrast the medical model by placing it in juxtaposition with a social model in which it is claimed that disability is society's failure to adapt to the individual differences and not the individuals problem with society.

In real terms this model has many advantages when attempting to relate the paradigm to organisations and individuals. Table 2.1 illustrates the basic components of this model. As previously illustrated disability is a continuum which can be either permanent or temporary and has many different definitions depending on which perspective is explored. The final model to be examined and the one which has most relevance to the objective of this study is the law based model.

<table>
<thead>
<tr>
<th>The Medical Model</th>
<th>The Social Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabilities are the direct result of an individual's physiological impairments, caused by disease, accidents, genetic causation or personal tragedies.</td>
<td>Disability is caused by society's failure to adapt itself to the different ways in which impaired people accomplish activities.</td>
</tr>
<tr>
<td>Disabilities are the property of individuals</td>
<td>Society in general (and the non-disabled majority in particular) bears the responsibility for disabling those people who are prevented from accomplishing activities in their own ways.</td>
</tr>
<tr>
<td>Disabilities are best overcome by medical or rehabilitative treatment of the individual</td>
<td>Disability can best be overcome by society learning to adapt to the variety of its citizens.</td>
</tr>
</tbody>
</table>

Table 2.1 The Medical and Social model of Disability in contrast -source: Berthoud et. al. 1993

2.2.10 The Law based model

In terms of those who have a duty under the HSW Act this model is perhaps most relevant. The law based model of disability was originally founded under the 1944 Act where the expression "disabled person" was defined to mean a:

"person who on account of injury, disease or congenital deformity, is substantially handicapped in obtaining or keeping employment, or in undertaking work on his own account, of a kind which apart from
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that injury, disease or deformity would be suited to his age, experience and qualifications ... The expression
disease shall be construed as including a physical or mental condition arising from imperfect development
of any organ".

This definition has undergone further development and refinement in the Disability
Discrimination Act 1995, where a person with a disability is defined as one who has:
'A physical or mental impairment which has a substantial and long-term adverse effect on a person's ability
to carry out normal day-to-day activities'

A very similar approach was adopted by Harris et al, (1971) in their study - Handicapped
and Impaired in Great Britain - where they defined a disabled person as:

'One who has sustained the loss or reduction of a functional ability is handicapped - who because of the loss
or reduction of a functional ability, is at a disadvantage with respect to his environment'.

Although most of these definitions broadly contain many similarities Burgdorf (1980) has,
in his definition, perhaps captured much of the operational and organisational reality of
the situation:

'One of the most important elements in delineating who is and who is not handicapped is a social judgement;
a person truly qualifies as handicapped only as a result of being so labelled by others. And the decision to
impose or not to impose the handicapped label is ultimately grounded upon perceptions of an individual's
role in society'

On reviewing and synthesising each model, it was concluded that contextually there
remain difficulties in adopting an operational definition of disability that would usefully
be employed by regulators and those who are regulated. As previously described there
are many differences between disability and handicap and yet in law they consistently
appear to be used interchangeably. Examples relevant to this study can be found within
the EEC framework directive 89/391/EEC (EEC, 1989a) which states under Article 6
'where he entrusts tasks to workers, take account the capabilities and, where appropriate,
the handicaps of the worker concerned as regards health and safety', article 15 which
refers to 'particularly sensitive groups must be protected' and Directive 89/654/EEC
(EEC, 1989b) which under article 6 annex 1/20 states 'Workplaces must be organised to take account of handicapped workers, if necessary. This provision applies in particular to the doors, passageways, staircases, showers, washbasins, lavatories and workstations used or occupied 'directly by handicapped persons'. However for the purpose of clarity it was concluded the most appropriate definition to adopt for the purpose of this study was one based on the Disability Discrimination Act 1995. This is required to reflect the limitations of the study, it being:

'A physical impairment which has a substantial and long-term adverse effect on a persons ability to carry out normal day-to-day occupational activities and that may affect the employer's and employees duty'

As considered earlier the problematic nature of terminology and classification of 'disability' has also placed operational constraints on attempts to identify a population statistic for the continuum of disability in Britain and much of the World. Nevertheless a number of studies have developed their own definitions to provide evidence of the extent of the disability phenomena for specific reasons (Harris, et al. 1971; Harris & Head, 1971; Martin et al. 1988; Martin, 1989; Prescott-Clark, 1990, UN 1990b, Wylie & White, 1964).

2.2.11 The Prevalence of disability, impairment and handicap

Over the past few decades there have been numerous attempts to determine the number of individuals who are disabled, impaired or handicapped particularly in Europe, the United States and the United Kingdom. Previous attempts to establish a population profile and the magnitude of that profile have encountered many difficulties due to the complexity of defining disability, impairments and handicap and the extent of the continuum. This empirical approach to the identification of need has produced different results for profiles of disability, impairment and handicap and consequently each has its own strengths and weaknesses. One example of such categorical survey data estimated the percentage of disabled persons in 55 countries ranged from 0.2 to 21 per cent (UN, 1990b). However there is much debate as to the validity of these figures. For instance
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Doyle (1995) suggests they were compiled from reliance on disparate age ranges, different definitions of disability and different methods of data collection. Before it is possible to determine policies and guidance on any subject it is necessary to understand the population which is being studied. The following therefore highlights the major studies in this field and some of the key results obtained.

The Harris Study

The first major work in this area in the UK was carried out in 1969 by Harris et al. (1971) where she utilised a postal questionnaire survey of 2.5 million households (General Household Survey) to determine a sample of people who considered themselves to be impaired. Once the target sample had been filtered each was interviewed. The results of the survey suggested that people with impairments account for approximately 6.9 million of the UK's population - at 1983 figures (Ramaprakash, 1984). This was followed in 1988 by a survey by the Office of Population Census and Surveys (OPCS) which focused on a profile of disability.

OPCS Survey

The OPCS study was carried out by Martin, et al. in 1988 with a remit of establishing an estimate of the prevalence of disability by severity and type. It concluded there were slightly less disabled with a figure of 6.2 million (at 1985 figures) people in Britain. These results suggested approximately 14 per cent of adults in the general population could be classified as disabled. It also found that 42 per cent of all disabled adults living in private households were aged 16-64 years, of which 31 per cent were aged 16-59 years, compared with 74 per cent of the general population (Martin et al, 1988). Further analysis of the OPCS data revealed that disabled people make up 6 per cent of the general population who are economically active. The results also suggest that approximately 60 per cent

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10 The General Household Survey asks identical questions about "long-standing illness, disability or illness.

2-48
of the disabled population are female. This study used tailor made definitions and as such no inference can be drawn as to the extent of comparisons with the study carried out by Amelia Harris et al (1971). It does however provide a gross empirical result of the number of individuals with disability in Britain. It is nevertheless more interesting and important to understand the distribution of disability in terms of the prevalence by age and severity of disability. Table 2.2 illustrates - according to the OPCS data - the distribution of disability by age category and illustrates that with increasing age there is an increase in the prevalence of disability, something that would not be unexpected. Later research by Prescott-Clark, (1990) suggests that in fact the level or degree of disability (or handicap as used in the report) increases with age up to the middle age years (35-45) and then levels off. As a result of the broad base of the study and the specific needs of the Department of Employment a further study was commissioned in 1989.

<table>
<thead>
<tr>
<th>Age</th>
<th>Number (thousands)</th>
<th>Proportion of age group (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-19</td>
<td>76</td>
<td>2.1</td>
</tr>
<tr>
<td>20-29</td>
<td>264</td>
<td>3.1</td>
</tr>
<tr>
<td>30-39</td>
<td>342</td>
<td>4.4</td>
</tr>
<tr>
<td>40-49</td>
<td>453</td>
<td>7.0</td>
</tr>
<tr>
<td>50-59</td>
<td>793</td>
<td>13.3</td>
</tr>
<tr>
<td>60-69</td>
<td>1334</td>
<td>24.0</td>
</tr>
<tr>
<td>70-79</td>
<td>1687</td>
<td>40.8</td>
</tr>
<tr>
<td>80+</td>
<td>1254</td>
<td>71.4</td>
</tr>
</tbody>
</table>

Table 2.2 Source: Prevalence of disability by age. OPCS Survey of disabled adults.

**SPCR Survey**

This subsequent study was carried out by Prescott-Clark, under the auspices of the Social Planning and Community Research (SPCR) and published in 1990. Its remit was to estimate the size and distribution of persons eligible for registration under the Disabled Persons (Employment) Act 1944. The results of the study would suggest that among adults of working age 22 per cent reported
a health problem or disability. This equated to 7.3 million adults, of which 8 per cent reported that they suffered an occupational handicap as a result of their disability or impairment. In operational terms the study concluded that persons who are occupationally disabled and economically active\textsuperscript{11} represent 4 per cent of the working age population of which 3 per cent are in work or on a government scheme. Therefore this study suggested 1.4 million adult persons were economically active and disabled in 1989.

The most recent estimates of the number of disabled people who are economically active and in employment is estimated to be 1.2 million (Sly, 1996), of an estimated population in the labour market of 24.8 million. Of the 1.2 million 0.9 million are in full time employment leaving 0.4 million working part time. This figure can be further broken down to show 1 million employees who are under a contract of employment, 0.2 million self-employed and 0.03 million in the employment of government agencies.\textsuperscript{12} Attempts have also been made to separate these into employment sectors and employment categories. The results suggest that of the total 1.2 million in all sectors 21 per cent were employed in the manufacturing sector and 19 per cent in the distribution, hotels and catering sector. This equates to approximately two hundred and sixty thousand employees in the manufacturing sector and two hundred and thirty five thousand in the distribution sector. In the two sub sectors of this study this reflects a population figure of fourteen thousand disabled employees in the engineering sector and eleven thousand in the retail sector (Sly, 1996; EEF, 1993; BRC, 1993).

\textsuperscript{11}Economically active means a person is engaged in self-employed activity or earns an income through employment as an employee or is seeking to enter work either in the present or in the near future.

\textsuperscript{12}The term disabled person was used to encompass all individuals questioned in the LFS who said they had a long term health problem or disability which affected the kind of paid work they could do.
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2.2.12 Severity of disabled adults

Table 2.2 provides an estimate of the proportion of prevalence of disability by age however it does not provide an indicator of where they lie on the continuum of disability. As discussed earlier individuals who have a disability are not equal in the debilitation that disability produces, and therefore it is necessary to understand if these individuals within work age are equally capable of open work. For this inter alia reason studies have shown that the variation of disability can best be illustrated by its pyramid distribution. Table 2.3 illustrates this distribution by categorising the severity of disability from one to ten and then ranking these by the degree of severity.

<table>
<thead>
<tr>
<th>Severity grade</th>
<th>Estimated number of disabled adults in Britain, at varying levels of severity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousands of adults in this category</td>
</tr>
<tr>
<td>Ten</td>
<td>210</td>
</tr>
<tr>
<td>Nine</td>
<td>365</td>
</tr>
<tr>
<td>Eight</td>
<td>396</td>
</tr>
<tr>
<td>Seven</td>
<td>486</td>
</tr>
<tr>
<td>Six</td>
<td>545</td>
</tr>
<tr>
<td>Five</td>
<td>708</td>
</tr>
<tr>
<td>Four</td>
<td>704</td>
</tr>
<tr>
<td>Three</td>
<td>750</td>
</tr>
<tr>
<td>Two</td>
<td>840</td>
</tr>
<tr>
<td>One</td>
<td>1,198</td>
</tr>
</tbody>
</table>

Table 2.3 Source OPCS survey of disabled adults (1988)

A ranking of ten represents those individuals with the most severe disability and a ranking of one represents those with the mildest. These figures are broadly supported by the findings of the data explored by Sly (1996)

2.2.13 Types of employment

Although the three main studies suggest different results the Labour Force Survey results, analysed by Sly in 1996, are perhaps most relevant to this study. These results would suggest that disabled people are employed within a similar range of jobs as non-disabled people, they are slightly more likely to be employed in non-manual occupations (49 per cent) than non-disabled people (40 per cent) and more likely to be employed in the manufacturing, distribution or public administration/health sectors. Proportionately more
males are in employment than females and geographical distribution was shown to suggest no significant difference.

Although results differ from one study to the other some general themes do emerge. Among people reporting a disability and an occupational handicap, in employment the SPCR survey found 12 per cent were in professional or managerial occupations compared with 21 per cent of the general population, 30 per cent were in other non-manual occupations (against 33 per cent), 26 per cent were classified as skilled manual (against 25 per cent), 25 per cent semi-skilled manual (against 16 per cent) and 6 per cent were unskilled workers (against 5 per cent) (Prescott-Clark, 1990). Occupationally handicapped employees are more likely to be employed in organisations employing more than 1000 employees (40 per cent). A very significant finding of previous research was that of the total population only 78 per cent of respondents reported that their employer knew of their disability. In terms of the statutory duties placed upon both employers and employees under the HSW Act this is considered significant. A further finding of interest was the smaller the organisation the less likely respondents were to inform the employer of the onset of the condition.

After the onset of the disabling condition it is interesting that approximately one-third of employees continued to be employed by the same employer, of which 14 per cent undertook an identical job to the one they were originally employed in, 7 per cent maintained the same job with accommodations, 10 per cent were employed in a different job and the remaining 3 per cent had been off work continuously. Research (Prescott-Clark, 1990) suggests as many as 40 per cent of employers' first reaction was that there were no problem in employing disabled people, however on prompting 91 per cent would perceive problems. The unsuitability of premises, jobs and difficulties regarding access to the place of work were cited as the main reasons. It thus followed that it was important to explore existing literature on the issues faced by disabled employees and employers.

2.2.14 Employment issues and safety and health

The effects of social attitudes and environmental barriers which disabled individuals must
tackle in becoming an active member of the economic labour force are great and for some too much. For those who do achieve a place in society's work force there remain many difficulties they must overcome. With the employment of any disabled person under the HSW Act comes a duty for both employers and employees to develop safe systems of work and ensure reasonable accommodations are in place to guarantee so far as is reasonably practicable the health safety and welfare of individuals (HSW Act section 2(1)). Although the Act does not refer specifically to disabled people it does include all employees regardless of their health status (Carter & Howard, 1995) and therefore, if necessary, special precautions must be taken to fulfill this duty. Equally there exists a duty under the HSW Act (section 7) upon the employee to 'take reasonable care' of his own health and safety and of other persons who may be affected by his act or omissions at work. To many these duties appear to present much more of a problem than should be the case. An example is illustrated by the following extract from Michael Floyd's (1995) paper on pre-employment screening and disabled people. 

*The possible consequence of this legislation [health and safety] for the employment of disabled people were dramatically highlighted by the case of an individual with multiple sclerosis, who was recruited to work as a secretary. Shortly after she had been taken on she was asked to go for a medical examination. The organisation's occupational health department was on the first floor of a building which had no lift and was physically inaccessible to the individual concerned. It was therefore necessary to assist her up the stairs. The medical officer undertaking the examination assumed that she also required assistance to get to her own office. This was not the case. The organisation's safety officer deemed this nonetheless unsatisfactory as she might have 'a turn' when on the stairs. Memos followed from both the safety officer and the Medical officer expressing their concern which were copied to the insurance company. Where upon they wrote indicating they would not insure against injury. It was therefore decided that the secretary should not enter the building until a more satisfactory situation had been arranged. It took over eighteen months to resolve'.

The extract is clear evidence of much confusion as to what constitutes SFRP and the measures necessary to meet the duty imposed. The phenomena of disability and health and safety is further complicated by evidence from studies that suggest disabled individuals of working age who are economically active remain significantly disadvantaged compared with the normal population (Barnes, 1991; Prescott-Clark, 1991; Goldsmith, 1976; GMB, 1994). In particular they are disadvantaged in terms of the provisions for their education, they are three times more likely to be out of work and unemployed for
longer periods than non-disabled people and when they finally find employment, they are normally in poorly paid and low skilled areas which typically are those most likely to witness poor health and safety compliance (HSE, 1995). In addition, problems of occupational socialisation may also result in disabled individuals having higher than normal (Dijkstra, 1986) rates of job turnover. Likewise the attitude, perceptions of individuals, organisational culture and external supporting agencies involved, (Hale & Hale, 1972, Goldsmith, 1976) may also add a further dimension to the management of the health risk to individuals with disabilities. Early research has already suggested that although not great alterations are necessary (Gooding, 1994) special provisions remain necessary in most cases of disability (Eitner, 1971; Tichauer, 1970; Cartmel & Bannister, 1969). In their own right these problems are significant but in combination they contribute to an increased probability of individuals suffering occupational injury or illness (Leigh, 1987).

2.2.15 Risk perception

Research has previously suggested that although many disabled people do not require vast 'special provisions' (Gooding, 1994) the working environment presents many hardware and software challenges for the disabled employee, their work colleagues and the employer. Hardware problems may best be described as those which are effected due to the physical environment comprising engineering systems and process plant. For example this may include problems associated with, inter alia, wheel chairs, the size of access to lifts (BS 5810), the design of accommodation (BS 5619) and the level of comfort provided by such wheel chairs (BS 6936). Although these British standards on wheel chair design exist, in evaluating them Haige, (1984) concluded that only 3 out of their 17 recommendations were based on anthropometric statistics. Similar work specific to disabled individuals has been carried out by Griew (1969) who cites numerous adaptions that are available to overcome many of the identified problems but which in many cases have not been adopted.

Guttman et al, (1966) pointed out some years ago that often it is not that the disabled
person needs something different, simply that able bodied people have reserves to tolerate the design problems and the disabled do not. Goldsmith (1976) addressed this design aspects by providing a compendium of design requirements for buildings. In addition there are many more hardware concerns that can be identified in providing for employees with disabilities (Shields, 1993) one such example includes means of escape in case of fire. One only has to ask a disabled employee whether they have a personal escape plan (PEP) to illustrate the context of the problem.

In contrast, software elements are the more esoteric management, control, social and human behaviour components which operate within the boundaries of the workplace. In analysing the findings of Prescott-Clark (1990) it soon becomes apparent that these software components of an organisation's SMS may present more of a control issue than generally accepted within the literature. Examples quoted include the need for more flexible work patterns and task reorganisation during periods of pain or the onset of fatigue. Further problems encountered by individuals with disabilities include the human behaviour, social interaction, control and integration issues. In the previous exploration of management theories it was illustrated that individuals need to feel part of organisations and the decision making process; something which is very difficult for those with sensory impairments.

Amongst employers there are also numerous prejudices and negative attitudes towards employing disabled people. Commonly expressed concerns, inter alia, have included poor work-capacity, high sickness absence rates and poor attitudes (House of Commons Employment committee Paper 35, 1990; Honey, et al. 1993: Morrel, 1990; Prescott-Clarke, 1990). To abate this argument however only two studies have been published. Melvin Kettle, in his two major publications, surveyed the association of disabled professionals (1979) and reviewed the performance of physically disabled people at work (1984). In his review he suggested that disabled individuals have improved accident rates. Furthermore sickness absence rates are equal to if not lower than able bodied employees. In his study however no recommendations were forthcoming as to the domains that
disabled perceived to be important in securing and maintaining their health, safety and welfare.

2.2.16 The Disabled employee's perception

A review of the literature suggests that there has been little research carried out to determine significant issues that disabled employees perceive to influence their level of satisfaction with health and safety arrangements, or to identify issues which are perceived by people with disabilities to be of importance to them. Work of a similar nature has been carried out by Ford et al (1996) on ethnic minorities and Rundmo (1994) on attitudes towards workplace safety in offshore oil rigs and manufacturing in British Steel (Donald & Canter, 1993). Some of the feelings evident within the disabled population have however been identified in part as a result of secondary questions asked of respondents to other surveys. Examples include studies by Harris et al, (1971); the Labour force Survey, (LFS, 1992 and Sly, 1996) and Prescott-Clark, (1990). For instance in Prescott-Clark's (1990) findings, the majority of disabled workers (68 per cent) thought that their disability had some effect upon their occupational status. In particular they felt it affected the type of work they could do, the conditions in which they could work, their hours of work and their attendance at work.

The SPCR study extended the literature some way by providing information on the effects of disability on employment, especially of the way in which health status or disability contributes to occupational handicap. It also highlighted a limited number of occupational concerns that exist such as physical limitations in undertaking manual work and fatigue. Furthermore, nearly 10 per cent of economically active disabled people report facing prejudice and ignorance among employers, 22 per cent admitted an incapacity to work a five day 30-40 hour week, and 20 per cent could not work a 7-8 hour day (Prescott-Clark, 1990). In addition the SPCR survey reported that on average non-disabled employees experience twenty one days annual restriction of normal activity due to illness/temporary disability whereas disabled individuals were found to take less than half this.
time off. Notwithstanding this fact, 28 per cent of respondents reported they had to take regular breaks or rests during the working day because of their disability. Furthermore, three in every ten reported they were unable to do some of the tasks that were normally part of their job because of their disability with about the same number stating they required some degree of assistance to complete their work activities (Prescott-Clark, 1990). Eight per cent indicated that they had a need for special equipment or aids to do the job and a similar number indicated difficulty gaining access to the workplace. In reviewing the UK literature, only a very few cases of disability-related judicial precedence could be found (Doyle, 1995). Nearly all cases were civil cases for compensation as a result of injury or ill health at work.

2.2.17 Legal status in Britain

There is limited information available on the duty of employers in relation to HSW and disabled employees. Two specific publications from the HSE exist in the form of MS 23 (HSE, 1989a) and MS 20 (HSE, 1982), there is limited industry specific guidance (CBI, 1987) and a small number of disability groups have published information (Kettle & Massie, 1986). In addition, there exist approved codes of practice on relevant statutory legislation. Interestingly, provisions for disabled individuals are specifically referred to by the European Commission's Action programme and in the subsequent European Framework directive on health and safety.

Health and safety legislation places a number of duties on employers and employees alike. As previously explained, the HSW Act places a general duty on employers to ensure, SFRP, the health, safety, and welfare of employees (section 2) and others affected by the work activity (section 3). For employers of disabled people, there appears to be a duty to consider the implications to the individual and the foreseeability of the impairment on the task involved. This duty was preempted in case law when Lord Denning provided a succinct and foresighted judgement in the case of Paris v Stepney Borough Council 1951. In this particular judgement, a task involving the potential for metal particles to strike the
operator's eye was being undertaken by an employee who only had use of one eye. A particle penetrated his eye and he successfully claimed compensation on the grounds that the consequence of the subsequent eye injury was more serious for him than it would have been for other workers. Denning held that the duty of care is to each employee as well as providing a basis for presumption that where there is a particular risk to an individual, extra precautions must be taken by the employer or duty holder. It can also be argued that the Paris judgement demonstrates a duty or need for employers to carefully consider routine health surveillance to ensure they are aware of individuals with disabilities.

Commensurate with the duty under the HSW Act is the duty under the Health and Safety (Workplace) Regulations 1992 (DOEMP, 1992b) to ensure aspects of the workplace are suitable and sufficient (reg 2 (3)) for use. This has an implied duty towards disabled employees in respect of traffic routes, doorways, facilities and workstations. This duty is clarified in the HSE's Approved Code of Practice to the regulations. Furthermore employers are required under the Management of Health and Safety at Work Regulations 1992 (DOEMP, 1992a) to carry out a suitable and sufficient assessment of the risks to employees and others so affected by their work. In addition there remains a duty on duty holders to ensure they consider the capability of any person they entrust tasks or operations to. In considering the Paris case it is also suggested that there is an inference that this should include disabled employees on an individual basis.

2.2.18 Contemporary Literature on SM and the paradigm of disability

The HSE provide advice to employers on the 'health aspects of job placement and rehabilitation' in the form of MS23 (HSE, 1989a). This document outlines only two categories where health requirements may be a consideration in employment terms. The first category cited as an example is under the Diving Operations at Work Regulations 1981 where divers are required to meet the standard of a medical. An example of the second category would be a person such as a lorry driver whose work is affected by a health condition which may cause injury to himself as well as others. The publication
makes many references to procedures that should be an integral part of an employer's
HSW policy as required by the Act. It does not however provide any guidance on how to
achieve this and the limitations and boundaries that exist in attempting to do so.

A useful publication on the subject is 'The Employers Guide to Disabilities' (Kettle &
Massie, 1986) which was commissioned by The Royal Association for Disability and
Rehabilitation (RADAR) for the International year of the Disabled. Its objectives were to
increase awareness of the needs, abilities and aspirations of the disabled, and promote
levels of integration and positive attitudes towards disability. The document considers
twenty four impairments such as arthritis, epilepsy, deafness, mental illness, respiratory
ailments and muscular dystrophy. It provides a description of each condition, the nature
and extent of the handicap and health and safety implications for employment. The
publication although useful is biased towards demonstrating relatively good sickness rates
of disabled people rather than addressing some of the more pertinent issues for employers.
This is however only to be expected when consideration is given to the financiers of the
document. There are also a number of disability groups that publish a limited amount of
literature. One example is the Centre for Accessible Environments. (CAE, 1996) which
produce very readable and easily understood recommendations on access provisions.

Other sources of literature and guidance include British Standards which are often used
as a form of best practice or benchmark by regulators in determining legal compliance.
There exist a number of British Standards for means of access for disabled people, (BS:
5810), tail lifts, mobile lifts and ramps (BS: 6109) and on the tactile danger warning
signs (BS: 7280) and finally Building regulations contain best practice guidance on for
example ablution facilities (BS: 4610). Furthermore limited literature also exists on the
environmental or hardware elements of means of escape for disabled people (Shields,
1993). However there is limited available literature to advise employers.

To summarise there are a great many disabled employees who are active within the labour
market whose health, safety and welfare needs must be considered by employing
organisations and fellow employees alike. Much literature suggests that this duty is primarily a management function and therefore an effective system should be put in place by the employing organisation to meet the needs of each individual within the workplace. Therefore as health and safety must be managed specific literature on the wider concept of management will now be considered so that a deeper understanding of the management imperative and its impact on safety and health can be developed.
2.3 Safety management systems

2.3.1 Introduction

On reviewing the literature on health and safety at work it emerges, that as illustrated in figure 2.7, there are many aspects to consider. However on synthesising the literature and in particularly the work carried out by the Accident Prevention Advisory Unit of the HSE it appears that the role of management in organisational health and safety is most important. In fact it was concluded that management are responsible for accidents in approximately 70-90 per cent of cases (HSE, 1985; Farnell, 1994; ACSNI, 1993; APAU,
The relevance of the management imperative has been further emphasised in many government and judicial reports on major disasters in which there has been significant loss to industry, individuals and society as a whole. Two examples of such incidents include the Zeebrugge Ferry disaster (DOT, 1987) when the whole organisation was criticised for 'having the endemic disease of sloppiness' and the King's Cross fire (DOT, 1988) where the presiding Queen's Counsel Desmond Fennel QC reported that 'financial performance was measured whereas safety performance was not - management were mistaken'. Although such workplaces are predominantly within the HSE enforced sector, there are equally sad and relevant examples within the local authority enforced sector. The Lyme Bay tragedy, the Hillsborough fire and the collapse of the Pink Floyd stadium are but three examples (EHN, 1996). One comment particularly pertinent to all these cases is that of Desmond Fennel, who concluded that 'if the internal audit was the yard stick for which financial performance was measured then the safety audit should become the yardstick by which safety was measured'.

In reviewing accident causation theory it is well understood that accidents are multicausal in that they are a result of a concatenation of many distinct causative factors, each one necessary but not sufficient to cause final breakdown (Reason, 1990). In fact Reason refers to 'latent' errors or decision failures attributed to management which do not become active until they combine with a local trigger. These latent errors can and do lay dormant within an organisation for many years (Reason, 1990). He uses the metaphor of the resident pathogen to illustrate latent failures as analogues to pathogens. The more pathogens in the system the more likely there will be of a trigger being present within a system and consequently result in the realisation of an active error or safety violation. This argument fits well within the framework of human error produced by Rasmmussen,(1980) which was set within the framework of the theory of 'Skills, Rules and Knowledge based errors'. In this framework the simplest error or safety violation is based upon a slip or lapse of a skill, the rule based error is where something is mis

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This causation and attribution factor is comparable to Deming's (1986) attribution theory that 90% of failure to conform to specification is due to management failure - the relevance of this will become apparent later.
classified or referred to as a violation if deliberate and the most complex is where 'knowledge' fails and a person does not produce a new rule to cope with a situation. Management's role is primarily to intervene and break this multi-causal process by preventing and detecting both latent and active potential within the organisation. Some argue this can be achieved by measuring and controlling the culture of the organisation.

2.3.2 Organisational culture

The word culture means many things to many people. However in operational terms it is a complex subject. So much so that even those well versed in its theory have referred to it as a 'Jungle' (see Kootz, 1994). Even its definition is problematic (Pidgeon, et al. 1991; Schien, 1985; Deal & Kennedy, 1982; Allaire & Firsirotu, 1984; Smirch, 1983). For example there are those who believe culture is behaviour based (see for instance Rohner, 1984) and in contrast theorists who hold that culture is a symbol of an existing rule based system or process within a population i.e. a system of meanings within the mind set of individuals in a population (Helman, 1990). The Anthropologist E.B. Tylor (1871) was most probably the first to define it within any real context. He saw it as:

'That complex whole which includes knowledge, belief, art, morals, law and customs and any other capabilities and habits acquired by man as a member of society'.

From this humble beginning it has received much attention in the academic world and been defined by many. The following are but a few of the common accepted definitions:

'Organisational culture has been variously defined as a philosophy that underlies an organisation's policy, the rules of the game for getting along, and the feeling or climate conveyed by the physical layout of the organisation' (Schien, 1985)

'To be a matter of organisational norms' (Kilmann, 1984)

'The shared values and norms that exist within an organisation and that are taught to incoming employees' (Vecchio, 1991)
'The way in which the organisation functions i.e. there are deep set beliefs on how work should be carried out, who influences the control mechanisms and who controls committees or individuals (management style). (Harrison, 1972)

The way we do things around here - health and safety is an integral part of our management culture - The aim is to maintain a sound corporate culture within which a good climate exists for betterment of safety; (CBI, 1990)

Finally, and the one which is the preferred definition and which fits well within the context of this study is that 'culture is a symbol of an existing systems model or mixture of processes that are accepted by the people within the organisation as normative and as such potentially influence the development of individual elements of the system' (Deal & Kennedy, 1982).

This fits well with the literature which suggests culture develops with and within an organisation and acts as a 'facilitating environment' (Winnicott, 1965). In fact organisations with a positive safety culture are characterised by communications founded in mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventative measures (ACSNI, 1993). In reviewing the literature it becomes apparent that although there are differences in the definitions of 'culture' all promulgate the idea that it is the collective census and that having identified norms is something that can be manipulated or changed by the management function (Smirch, 1983). Factors that influence the culture of an organisation include:

- History and ownership
- Size
- Technology
- Goals and objectives
- The environment industrial sector
- The people (disabled continuum)

2.3.3 The Cultural dimension of health and safety management systems

In drawing on the literature many factors emerge as possible determinants of a positive

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safety culture. According to Zohar, (1980) its dimensionality is made up of training, management attitude, effects of safe conditions, status of key players, perceived levels of risk and work priority. Brown and Holmes (1986) reduced it further to a three factor model, comprising of management concerns, activities and employee risk perception. While Dedobbeleer & Beland (1991) subsequently reduced it to a two dimensional model of management commitment and worker involvement.

It has already been suggested that a safety culture is holistic, impacts on all and affects both attitude and behaviour. Therefore being holistic, it is argued is not restricted by the boundaries of definition and as such transcends the elements of health, safety and welfare. Some would argue (Otway & Thomas, 1982) for instance that culture overrides risk. The authors argued that risk perception by its very nature implies some potential bias towards a pre-determined and objective standard. This in turn must then pose many questions that must be addressed at the organisational and individual level. This has particular relevance to the safety and health norms for employees with disabilities. For instance the conditional nature of risk assessment raises the question of which standard of risk should be acceptable and therefore this would reflect the level of bias to which humans must be calibrated within an organisational context.

It is further argued that if risk assessment, in its purest form, is used in isolation to ensure a healthy workplace it must be accepted that it can only provide for a partial view of true risk (Blockley, 1990) and therefore can never fully predict the true nature of the risk and hazards at organisational and individual levels. This has much relevance to people with disabilities.

This argument for a more holistic management approach is further supported by the three factor model of occupational health, safety and welfare (Cox & Cox, 1993). The traditional two factor model has developed around work and health (Cox & Cox, 1993) whereas the three factor model is more unimpeded in the definition of its boundaries and as such includes the 'Organisation' as the third factor (Cox & Howarth 1990; Cox, et al
1990). In health and safety terms this is seen as including the importance of the psychosocial sub-systems of the organisation's culture. An analogy can be made to the Chaos theory in that a small change in one element of the organisation will cause a change elsewhere. The results of such failings have been demonstrated in the reports on many of the major disasters such as Zeebrugge (DOT, 1987) and King's Cross (DOT, 1988) all of which have linked the psychosocial subsystem as an attributing factor to the breakdown of the organisational and human systems.

Therefore there must be a complimentary approach which will control those unforeseen hazards or risks which have not been identified within the current, socially biased, risk assessment model (Pidgeon, et al 1991). Such an approach must by definition be continually evolving and entail a degree of control. In this respect, it could be argued that adequate risk management is a matter of organising and maintaining a sufficient degree of control over a technological activity, rather than continually, or just once measuring accident probabilities. If this is the case more often than not acceptable risk means means sufficient control.

Therefore there is an overriding need for a cultural approach to safety and health which as Pidgeon et al (1991) points out may provide heuristic normative guidance for organisations and society in the quest for more probabilistic risk prediction. Such an approach tackles the subject from an organisational or corporate cultural perspective whereas in reality an organisation's health and safety culture is a sub-culture of the more holistic organisational or corporate culture (Adams & Ingersol, 1989; Turner, et al 1989). This sub culture has been explored and broad definitions produced by the CBI (1990), the HSE (1991) and Turner et al. (1989).

For example Turner et al. (1989) defines a safety sub culture as the set of beliefs, norms, attitudes, roles and social or technical practices that are concerned with minimizing the

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2 systems is defined by The Oxford Dictionary as "a complex whole, set of connected things or parts, an organised body of material or immaterial things"
exposure of employees and members of the public to conditions considered injurious. From this broad definition it can seen that the safety culture should cater for the mind set and physical dependencies of the disabled.

2.3.4 Cultural safety systems

As previously discussed an organisation's culture is a complex structure which acts as a 'facilitating environment'. In safety management terms this facilitating environment is composed of controlling systems, sub-systems, rule sets and processes. These constructs develop over time until they become accepted by new employees and become normative. Although it can be argued that systems cannot become normative as they do not exist (Fortune & Peters, 1995) they are in fact constructs of phenomena that exist at a time. As such they can be defined as an organised whole or a set of components that are interconnected. Vickers (1963) uses the term culture to describe what he calls an 'appreciative system' as a statement of readiness to distinguish some aspects of a situation or phenomena from others. Churchman, (1971) considers 'multiple Weltanschauungen' - world view - where the whole must be considered before the individual parts. Checkland (1981) delves further into the theoretical aspects of systems theory and suggests the term holism. However in safety management terms Waring (1991, 1995), has written widely about safety management systems (SMS) and recognises the different components of systems safety by following that advocated by Checkland (1981) in that:

'A system is a recognisable whole that consists of a number of parts (referred to in this thesis as elements) that are connected up in an organised way (i.e. the structure of the system); the elements interact so that a process is going on'

In this model it is assumed that the system's elements are relatively stable i.e. they represent the 'doers' and the 'done to' whereas the processes within the system are more transient and dynamic elements i.e. actions change the doing phase of the system. These can be further categorised into hard and soft systems. The hard systems are those characterised by well-defined structures and processes and readily quantifiable features,
whereas the soft systems are those concerned with the human factors such as attitudes and relationships. For the purpose of this thesis the term 'cybernetic systems' will be used as it illustrates the complex nature of both the hard and soft elements within an organisational safety management system and fits well with the cultural aspects of normative structures within the system.

2.3.5 Contemporary safety management models

In turn the literature has responded by providing systems models that provide a structure in which organisations can integrate their safety management. There are many off the shelf varieties with the more common ones including the HSE's Successful Health and Safety Management (HSE, 1991); The British Safety Council's Five Star System (BSC, 1994); The Chemical Industry Association's Responsible Care (CIA, 1995), SGS Yardsley's ISH 2000 (SGS, 1996); Behaviour Systems Management (Krause, 1995), RoSPA's QSA system (QSA, 1993); The International Safety Rating System (ISRS, 1994) and now the new British Standard on Integrated Occupational Health and Safety Management (BS 8800). Originally many of these were designed and aimed at the high risk industries such as the chemical industry and those who required a safety case including off shore industries. However the new generation is much more usable by small to medium sized enterprises (SMEs) and service sector organisations. In synthesising popular SMSs there appears little theoretical difference between each. This is demonstrated by comparing the International Safety Rating System, a tool for applying TQM to safety, and its principles of identification of work required, setting standards, monitoring performance, evaluating performance and correcting deviations, against the similar approach recommended in the HSE's guidance on safety management- HS(G)65 (figure 2.8) (HSE, 1991).

When examining the key elements of the HS(G) 65 (HSE, 1991) model in detail they also have much in common with Deming's "PDCA" model of quality improvement (figure

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3 This principle is followed in the British Standards Institute publication BS:8800 on Occupational, Health and Safety Management.
2.9). Once again it emphasises as its key elements planning, organising or doing, measuring or checking and finally acting:

Although the HS(G) 65 "Successful Health and Safety Management" (HSE, 1991) uses a quality driven approach, in terms of organisational management it is more 'top down' and as such places a significant degree of emphasis on identifying areas of performance with which to establish areas of management control. Figure 2.10 (next page) which is taken from HSG (65) demonstrates three stages of the systems approach to safety management. These include inputs to the organisation, work activities within the organisation and outputs from the organisation. It is interesting that human factors are identified as a significant part of the approach but are generally not appreciated by organisations when reviewing safety management issues.
Amis and Booth, (1992) in their analysis of this approach to safety management observed a paradox in that there has been a shift in ownership of safety and health provision within organisations. They claim that no longer do managers manage but that safety officers and inspectors do the job of safety management. This can in generic terms be described as a shift within the policy and culture domain of the organisation. If this is the case, then the Robens philosophy of self regulation and internalisation of responsibility, hazard identification and control has failed.

Therefore, in view of the importance of the management function in impacting upon the cultural, socio-technical and systems dimension of health, safety and welfare of employees, and thus meeting statutory duties, it is necessary to develop a deeper understanding of the background and theory, context in which it operated and its maturity as a science.

2.3.6 The Development of management theory

'Under any social order from now until utopia a management is indispensable and all-enduring ... The question is not "will there be a management elite? " but what sort of elite will it be'

Sidney Webb (source, OLWP,1981)
The term 'Management' has often been described as an adjective which defines the manager. Conversely the manager has been defined as the person who organises resources available to him/her which includes people, money and other assets such as land and equipment (Dale, 1975). Ostensibly contemporary management theory has developed to the point where there is much literature surrounding the subject both from a theoretical and operational perspective and much of it relevant to safety management. The threads which link general management principles and safety management can be drawn from the historic development of management theory. The fundamental principles were developed from one of the earliest theoreticians, Luther Gulick, who in 1930 fashioned a management theory by isolating the management function into its component parts. The distinct disciplines included: planning, organising, staffing, directing, co-ordinating, reporting and budgeting. Emanating from these was the acronym POSDCORB from the initial letters of the seven function of management (the O was only to help pronunciation).

The management theory which has subsequently derived can be described as a fragmented field of study that has developed its own sub-fields both in isolation and competition with each other (Astley, 1984; Stewart, 1984). This fragmentation has been the cause of much debate as to its validity as a field of 'scientific study'. Academics such as Redding (1984) argue for management theory to be separated into its component disciplines whereas in contrast there are strong arguments to define it as a single field of study in its own right (Easterby-Smith et al 1994). Substantial debate regarding this topic has taken place (Astley, 1984; Stewart, 1984; Whitley, 1984). Nevertheless one of the more persuasive arguments which places management theory in the scientific domain is that, if researched correctly using modern analytical techniques, it possesses all the attributes necessary for conceptual research with identifiable outcomes (Sekaran, 1992). Madge (1963) also highlighted these factors when discussing the requirements of management theory as a science:

'a mature science possesses refined and systematic methods of data collection, suitable analytic tools, and appropriate conceptual equipment ... looming beyond them is the systematic theory that is needed to guide and understand action' (Madge, 1963)
Commensurately, there has been much debate as to the methodological issues of data collection and analysis employed in the development of management theory (Whitley, 1984). One of the central features of this debate is the use of qualitative and quantitative research. On the one side there is a belief that empirical research provides only partial insights into social or management science, thus causing hypotheses to be narrow and its results representing only small fragmented particles of knowledge (Magee, 1973; Fineman & Mangham, 1983). In contrast there is now much support for qualitative analysis (Yin, 1984; Eisdenhart, 1989; Lincoln & Guba, 1986; Sekaran, 1992) where a richer more in depth understanding is required of the theory. This is particularly useful if concepts such as culture and sytsems are to be explored as it allows the richness of the data from all contributers to be drawn upon. Nevertheless which ever perspective is adopted management is now an accepted if not germane field of academic study and as such has its own terminology and structure.

2.3.7 Historical perspective of management practice

Management practice and associated theory has traditionally seen as its primary objective the improvement of organisational outputs - i.e. the physical transformation of raw materials by a process function to a finished product - to increase component profit and market share. The theory has grown in parallel with the manufacturing industry's development which has been described to have occurred in six distinct stages, namely:

Craft
Industrial revolution
Mass production
Scientific management
Dynamic process control and
Versatile Manufacturing

source: Arvill, 1983

Revision to the manufacturing process and the changing emphasis of human involvement

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in the process function resulted in management techniques altering to meet the dynamic needs of industry. Three focal strands emerged from the early twentieth century, including the scientific perspective (Taylor, 1947), the organisational perspective (Fayol, 1949) and the behavioural perspective (Mayo, 1960). These three classic writers characterise those schools each of whom had their foundations within the field of engineering (Fores & Glover, 1976).

2.3.8 The Development of modern management theory

You have to plan something, you have to organize something, you have to direct something. When you have to select your staff, you will have to determine what they will have to know in order to do it. Intimate knowledge of the subject matter...is indispensable to effective, intelligent administration


Over the last thirty years there have been many divergent models of management, each addressing distinct needs, within different organisations. In the main these have focused on gaining a competitive edge in the market place by efficiency and profitability improvements. In a holistic sense these are termed business improvement programmes or World Class Manufacturing. Contemporary models offered as de rigueur within the business literature are Benchmarking (Karlof & Ostblom, 1993), Business Process Re-Engineering (Homa, 1995), Empowerment and Total Quality Management (Dotchin & Oakland, 1989). However the model within the literature that draws on the assets of all others, in a contingency manner and addresses management from an holistic and culture building perspective is that of Total Quality Management (TQM) (Oakland 1989, Deming 1986; Logethetis, 1992; Sohal & Morrison, 1995; Hutchinson & Mcmanus, 1993; Johnson & Omachonu, 1995; HSE, 1991). Holism and culture are two elements of a management structure that are particularly important when applying management principles to safety systems in order to produce a positive 'safety culture' (CBI, 1990; Brown & Holmes, 1986; Zohar, 1980; Dedobbeleer & Beland 1991; ACSNI, 1993).
Chapter Two

2.3.9 Emergence of the Quality Revolution

'The World now, according to Phaedrus, was composed of three things: mind, matter and quality'

Pirsig (1974)

Quality has become the British 'management obsession' of the 1980s and 1990s, with quality initiatives being introduced in three quarters of organisations in the UK (Wilkinson & Wilmott, 1995). They are no longer confined to the private manufacturing sector; the language of quality has spread into the service sector, the public sector and even universities. However, organisational theorists have been slow to address, from a critical perspective, the TQM movement. One of the reasons could be that it was initially considered to be a short term management 'fad'. Therefore most writings on TQM have emanated from academics who have come from an operational management perspective and thus unequivocally positive about the theory of TQ philosophy and culture (SEPSU, 1994).

Before one can explore the totality of quality it is necessary to understand quality. The term 'Quality' has many different meanings and interpretations. To one person a Rolls Royce is synonymous with quality. However to a person in the centre of London who only has a parking space wide enough for a Mini, to them a Mini is a quality car in that it meets the desired need at that time (Juran, 1986). Some would argue however that quality is about zero defects (Crosby, 1980) others argue that it is about fitness for purpose (Juran & Gryna, 1980) judged by the user and others such as Crosby would define it as conformance to requirement (1980). Although there is no definitive definition of quality, in a commercial sense (Townsend & Gebhart, 1986) quality is seen to be about the culture of management and the relationship between the organisation meeting the customer's need for quality goods and maximisation of organisation profits (Flood, 1993; Rotherwait & Shell, 1995; Dotcin & Oakland, 1992). In broad terms management
of quality can best be described in terms of Quality Control\(^4\), Quality Assurance\(^5\), Company Wide Initiatives and Total Quality Management\(^6\). Throughout this paper these will be referred to generically as quality improvement programmes (QIP)\(\). The term quality is often seen as being synonymous with the formal quality assurance standards that have developed from both British, European and International standards organisations.

2.3.10 Quality Standards - BS 5750/ISO9000

Formal quality assurance was first adopted in Britain in the early 1960s as part of the Polaris programme (Spickernell, 1991) where a need existed for improvements in the precision, strength and tolerances of the materials and components used in its production. The need for a specification of quality standards was met shortly afterwards by the British Standards Institute in their development of BS 5750 parts 1-6, which was introduced in 1979 as a National Quality standard. It has since developed into an accepted International standard and forms the basis of the ISO 9000 series (adopted in 1987) and the European EN 29000:1987 standard (Voss & Blackmon, 1994; Durand, et al. 1993). These have become widely accepted measures of an organisation's demonstration to its customers that they are committed to Quality and are able to supply their customer's quality needs. This is illustrated by work carried out by Wilkinson et al. (1992) in their study of 880 companies where they found 66 per cent of UK companies had intentions of being certified by a third party. Furthermore the DTI register shows that between 1986 and 1993 the number of companies gaining third party registration leapt from 6,300 to 24,000.

\(^4\) Quality control: concerned with isolating and inspecting the product or service after it has been produced to eliminate those that fail to meet the specified standard.

\(^5\) Quality Assurance: Concerned with the supplying organisation developing the necessary management systems capable of delivering the required service to the specified standard.

\(^6\) CW & TQM are involved with continuous improvement within the organisation
Despite the widespread acceptance and the market drivers behind registration (Blackham, 1992; BDO Consultants, 1993; Abbott, 1993) especially in the public sector (Morgan & Murgatroyd, 1995; Seddon, 1994) there are major criticisms of the standard (Bachelor, 1993). It has a reputation for merely being a paper generating exercise and failing to improve business efficiency or market share. Anecdotal evidence would suggest most organisations fail because they do not understand the true place the standard has within an overall business improvement programme and as only part of a TQM programme. Subsequently they use it as a sole stand alone QIP.

2.3.11 Defining the TQM Philosophy

The TQM management philosophy is rooted in the research and teachings of American quality pioneers W. Edward Deming (1982), Joseph M. Juran (1980), and from Japan Karou Ishikawa (1985). Their findings and philosophies were so strong they provided the post war Japanese industrial sector with a vehicle from which they established global trade supremacy. This success heralded a further wave of TQM gurus such as Crosby, (1980) Taguchi (1986), Feigenbaum, (1983) and Shingo (1986), Oakland (1989) and Zairi (1994). The whole approach emerged from Deming's 'PDCA' cycle which constitutes a systematic approach to management in much the same way as Fayol. Ostensibly his 'systems' approach comprised four components: Plan, Do, to Check and to carry out Action. The first three elements would be carried out incrementally and on a small scale to ensure they were correct. Once a satisfactory level of quality was achieved the improvement would be carried out. Deming's work had its foundations in statistics, efficiency, economics and his recognition of the need to reduce variation within manufactured parts. In turn this reduced scrap, improved build quality and subsequently established competitive advantage over other suppliers. The principles underpinning this philosophy are illustrated in Deming's triangle which has been further developed by Oakland (1989)(Figure 2.11).
With the sudden growth in the quality revolution came a growth in the number of definitions of quality. Commensurately it became increasingly difficult to define TQM without resorting to lists. Each quality guru (Deming, 1986; Juran, 1986; Crosby, 1980; Taguchi, 1986; Oakland, 1989) has developed a list of principles that define the operational and theoretical components of their particular philosophical model. Deming (1986) listed his essential components to total quality management in fourteen points, (See Appendix A), Crosby produced a list of four absolute necessities for quality and surprisingly a further fourteen steps to achieving zero defects (Crosby, 1980). These he suggests should be supported by what he terms 'four pillars' comprising management participation, professional quality management, original programmes and recognition. However of these lists the one which appears to command most usage in Britain within the literature is Oakland's model list (1989). This comprises three soft elements, communication, commitment and culture, supported by three hard elements, systems, teams and tools. In broad terms Oakland's TQM model is that illustrated in figure 2.11.
Nevertheless on further synthesis there appears to be common threads which run through many of the definitions. This is illustrated by the following which are some of the more common definitions of TQM:

'management philosophy and company practices that aim to harness the human and material resources of an organisation in the most effective way to achieve the objectives of the organisation' (BS, 4778)

'TQM is a culture advocating a total commitment to customer satisfaction through continuous improvement and innovation in all aspects of the organisation' (Logothetis, 1992)

'TQM is an approach to improving the effectiveness and flexibility of business as a whole. It is essentially a way of organising and involving the whole organisation; every department; every activity; every single person at every level' (Oakland, 1989)

Although the above definitions are different key elements are included within the context of each. Moreover, on returning to the generic models of TQM advocated by authors such as Deming (1986), Ishikawa (1985), Juran (1986) and Crosby (1980) it becomes apparent that this diversification of model content runs throughout all models but all however contain many philosophical similarities. As a philosophy TQM builds upon the holistic dimension of an organisation and portrays a whole systems approach for quality management (Flood, 1993). It builds on the idea that an organisation is an interactive network of communications and controls that extend horizontally and laterally within the organisation, internally and externally. Both quality and total quality as philosophies have developed significantly. The shift has been particularly noticeable in the field of 'Quality Assurance'. In this field it is no longer acceptable to follow principles of 'Quality control', where detection of error prevails as a management philosophy. The current focus is towards a position where prevention of error prevails (Oakland, 1989). There is also an emerging emphasis on 'customer care' and the provision of quality in all areas of an organisation, not merely during the production process. Although TQM had its origins within the manufacturing industry it has now been adopted by many service industries (Butterfield, 1987; Hart et al, 1990; Adamson, 1993; Audit Commission, 1993).

2.3.12 Incidence of TQM in UK

The philosophy of total quality management has developed and received such corporate
attention that in 1993 the British Standards Institute introduced BS 4775 on the vocabulary of quality Management. The BS recognised within its framework that quality was very much concerned with people and the human behaviour aspect of organisational management, not merely the administrational, process and conformance aspects of an organisation. The philosophy has witnessed a growth in uptake within Britain. It has been suggested by results of survey data that up to half of the 31,000 organisations who have gained third party registration under BS5750/ISO9000 are also already involved in TQM or are in the process of developing a TQM culture (Binney, 1992). Studies in Scotland have found that 25 per cent of respondents already had TQM in place and a further 40 per cent had started down the line. It was also suggested that companies categorised small, public sector, or service organisations are as likely as larger manufacturing companies to be involved with TQM (Witcher, 1993).

The TQM model has been so successful that over the last decade many of the major companies have launched full-scale quality programmes which they have made their own (Bank, 1992). Examples of such 'Company Wide Initiatives' include:

- Leadership through Quality (Xerox)
- Quality the ICL Way (ICL)
- Quality Service programme (Nat West);
- Total Quality Culture (Texas Instruments);
- Total Quality Excellence (Ford)
- Quality Focuses on the Business Process (IBM)

The arguments for TQM are various, including customer demand, the boost to staff morale, product differentiation (Smith, 1988; Oakland, 1989), although mostly it is the promise of increased market share, long term business performance and profit that are the drivers (Peters, 1994). Wilkinson et al (1992) claim the major premise of TQM is that quality, when applying the definition given by Feigenbaum (1983) (*fitness for purpose*), is the key to business success in the 1990s and that this rather than price or delivery, is the key to competitive advantage. Moreover he argues that improved quality need not lead to increased costs; rather costs are likely to fall owing to a decline in failure rates, returned goods or services and a reduction in cost of detection. This argument is also
supported by Oakland (1989) who suggests up to one-third of an organisation's effort is spent dealing with errors and checks.

2.3.13 Operational Aspects of TQM

Within Britain the dominant emerging model of TQM is generally accepted to include leadership, people management, policies, strategies, resources and processes. These in turn lead to key results by way of increased levels of satisfaction. Figure 2.12 illustrates the infrastructure in which these aspects or elements are embedded. With the emerging philosophies and plethora of literature advocating commercial methodologies for implementing TQM a number of techniques and tools have been developed for doing so. Many of these are founded upon rigorous theoretical background and have been empirically proven to improve the systems, culture and processes within an organisation (for example of such tools see Shewhart, 1931, and Oakland and Followell, 1990). These can be termed hard and soft aspects of quality and include SPC, organisational structures and Kanban (stock control using a ticket system) on the hard side and Kizan (small improvement) on the soft side. Below is a list of tools used within quality to achieve process improvement.

Tools of quality

- Process Flow Charting *
- Tally Charts*
- Pareto Analysis*
- Scatter Plots*
- Histograms*
- Control Charts*
- Cause & Effect*
- Affinity diagrams+
- Interrelationship digraph+
- Tree diagram+
- Matrix Charting+
- Matrix data analysis+
- Process decision programme Chart+
- Arrow diagrams+

* for data interpretation + for design stage and termed Quality Function Deployment tools

In contrast to this very hard statistical and process orientation Wilkinson & Wilmott,
(1995) see the soft side of quality as more concerned with creating customer awareness within an organisation. In this context they refer to the internal, as opposed to the external customer. For instance in a manufacturing organisation the end product could and is often displayed to employees as the incentive while in service organisations 'customer care' programmes would be the improvement driver. It is internal customer focus which potentially may benefit disabled employees. As illustrated in figure 2.12 the UK model of TQM places a high degree of emphasis on people.
Figure 2.12 UK model of TQM (British Quality Foundation, 1994)

2.3.14 Organisational Philosophy of TQM

In general terms, as identified by Gabor, (1988), quality is holistic in that it can only be
conceived if it includes all the functions or elements within the organisation, all the people who work there and all the organisations supplying and receiving goods and services. Deming summarised this in 1982 when he described quality as a systems model (see Peter Senge in his book The Fifth Discipline which provides models that fit the theory 1990). Furthermore Carder (1994) perceived TQM to be about culture and commitment and Ragan & Carder, (1994), concluded that TQM provides for an environment where fear is eliminated, where all employees take pride in their work and where they feel respected and accepted as part of a team. Within this context organisations, adopting TQM, apply the concepts of commitment to never ending QIP, scientific knowledge and involvement for the social change as part of business culture.

In summary it becomes apparent that all authors emphasise constant improvement, planning and management of both hard and soft elements of the organisation. However on further synthesis of the models human factors and culture in one form or another are nearly always evident. Indeed in some, although not all, human factors are seen as a fundamental part of a quality programme (see table 2.4). The 'father' of modern quality improvement programmes (Deming, 1986) included it as one of the three factors that made up his quality triangle. The importance of the human element is generally not observed as part of the BS 5750/ISO 9000 approach to quality. This is not surprising as the BS and ISO standards are more orientated towards the systematic domain of policy and procedure, i.e. more in line with the Fayol, (1949) management theory than the culture of the organisation as defined by Mayo, (1960) But as argued in much of the human resource literature the human element of any organisation can be considered to be an important and expensive commodity. Doran, (1986) further emphasises the importance of the link between people and quality by going so far as to point out that the notion of quality is one that is universally accepted by people i.e. people always wish to achieve the best performance especially out of work (Juran & Gryna, 1980; Brache & Rummier, 1988) and therefore they should also wish to achieve the same at work. Motivational theories such as those suggested by Maslow, (1970), Hertzberg, (1968) and studies such as the Hawthorn experiment (Roethlisberger & Dickson, 1936) have provided a sound
understanding those factors that motivate individuals in a collective society (an organisation in this context). Much of this work also set the foundation from which contemporary health and safety determinants have evolved. The human factors of health and safety are in fact becoming more important than previously considered (Hale & Hale, 1972; Glendon & McKenna, 1994; HSE, 1989b; ACSNI, 1993) and are now being recognised as possibly more important than other aspects by regulators and those who are regulated.

Notwithstanding this perspective many of the quality theorists advocate that if people are to be a part of a quality culture they must be empowered by the organisation. They must feel they have an important role within the organisation and its culture. This includes knowing what is expected and having confidence that it can be achieved in the time and with the resources provided, (Juran & Gryna, 1980; Ishikawa, 1985). In the industrial society in which we live it is generally accepted that tools to achieve this essential component include training, information and education. This is mirrored by the statutory requirement under the HSW Act. The emphasis on the human aspect or factors of an
organisation can be termed software provisions. Oakland (1989) in his book on TQM emphasises in particular that it is concerned with the software aspects (see table 2.4) by moving the focus of control from outside the individual to within. The objective is to make every one accountable for their own performance, and to obtain commitment to attaining quality in a highly motivated fashion. The same has also been said of improvements in safety culture. The assumptions a director or manager must make in order to move in this direction are simply that people do not need to be coerced to perform well, and that people want to achieve, accomplish, influence activity and challenge their abilities. The relevance of this will be discussed in detail later. However in practice this is not always the case. Seddon, (1994) argues that too much emphasis has historically been placed by management on the hardware aspects and not enough on the software elements that contribute to the culture of the organisation.

2.3.15 TQM and SMS

The post war management philosophy of TQM, being based on continuous improvement, reduction in variation and meeting the needs of the customer was soon seen as having parallels with those systems which were readily being adopted by many of the major chemical and nuclear blue chip organisations to manage their accidents and safety procedures. Over the past twenty years TQM and safety have been developed to the extent that they have been referred to as opposite sides of the same coin (Krause & Finney, 1993). Although the UK has been slow to realise the potential relationship and subsequent benefits that may be gained from the integration of such a management philosophy, in the USA there is much literature on the development and relevance of TQM. It is not surprising then that those organisations who have been successful in this marriage have predominantly been American. Examples of success stories can be seen

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7 The opposite would be Hardware which can best be described as the tools of Quality. These include Process flow charting, Tally Charts, Pareto Analysis, Scatter diagrams, Histograms, cause and effect analysis and control charts (Wilkinson et al 1992)

8 In TQM terms the customer is both internal and external and as such in safety terms the customer is the employee or other so affected by the hazards produced by the employer
with IBM, EXON and Dupont. The literature is varied, some containing research findings and much individual opinion as to the benefits of integrating SMS and TQM. Examples of such work in the USA can be found in the works of Krause (1995) who advocates human behaviour aspects of safety management; Zelinski, (1991) who advocates a customer driven approach; Bond (1990) who concentrates on loss control; Petersen (1994) on the tools of TQM and safety; Lischied (1994) who provides an overview of TQM/SMS and Hansen (1994) on the need to integrate safety with an ISO 9000 systems approach. Similar literature is emerging from other countries such as Canada where Wayne Pardy (1991) advocates a similar approach by adopting a focus upon integrating SMS with Juran's model of TQM and Germany with DuPont (1990) extolling the virtues of integration.

In Britain the literature is also developing but at a slower pace. Examples include the manufacturing sector work by Warner (1991) who presents an argument for TQM and its potential links with quantified risk assessment (QRA), and Cutler & James (1994) who draw much from the work of Davis and Teasdale (1994) on accident investigations and TQM as an approach. Other literature includes work by Donald and Canter (1993) on attitudes as part of British Steel's TQ philosophy, Tower (1994) who reviews TQM and sickness absence at work and Deacon (1994) who draws much from the HSE's 'Successful health and Safety Management' (HSE, 1991) in advocating an integrated approach to TQM and SMSs.

From this background it is now possible to develop the case further and relate it to disabled employees and the effect the three factor model of health has on organisational safety provisions for individuals with disabilities.

2.3.16 Argument for the significance of the problem to be considered.

During this chapter it has been demonstrated that there has been a radical shift in the

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manner in which society protects the health, safety and welfare of employees in the labour market. As a result of a combination of research and public pressure the responsibility for safety has been determined to be a management function. To deploy this functional management theory and the HSE adopt a 'systems' approach to break the accident causation chain. Its intention is to proactively identify hazards, determine risk and put in place commensurate control loops as well as proactively and continuously monitor for latent errors, that may act as triggers for safety violations. More holistically this systems model is used to promote an underlying positive safety culture that transcends the lateral and horizontal interfaces throughout the organisation. The model advocated by much of the literature and the HSE is one of TQM because it can and does alter the very culture of an organisation and advocates many of the characteristics which are required for a positive safety culture. These include communications founded upon mutual trust, shared perceptions of the importance of safety and confidence in the efficacy of preventative measures.

In theoretical terms such an organisational culture presents many positive characteristics for those employees who are disabled or impaired. This integrated approach of TQM and SMS it would appear offers a more comprehensive, empowered and holistic framework covering many of the software and hardware elements relevant to this group. Moreover if this were to be the case it would have positive benefits for regulators and those who were regulated under the HSW Act. In fact within the paradigm of disability and SMS a void exists within the literature. Currently no guidance exists as to what constitutes 'reasonably practicable' for both regulators and those who are regulated. This is problematic for both parties and it is suggested has led indirectly to many individuals who are disabled being refused employment under health and safety grounds. Therefore this study seeks to explore whether organisations who have adopted a TQM culture are able to demonstrate improvements within the dimension of a positive safety culture for disabled employees. The null hypothesis to be explored is therefore:

'Organisations who have adopted an integrated TQM/SMS display no better cybernetic
Chapter Two

systems for disabled employees than similar organisations within the engineering and retail sector who have not adopted a TQM/SMS'

However before it was possible to answer this question at the organisational level it was concluded necessary to determine a number of characteristics of the disabled population within the two sectors of the study. Chapter three explores these characteristics by way of group and individual interviews.
CHAPTER THREE
QUALITATIVE STUDY
BY
GROUP DISCUSSIONS,
FOCUS GROUPS AND INTERVIEWS

'I tell the tale that I heard told ... my pleasures are plenty. But oh, my two troubles'
A.E. Housemay 1859-1936 (source OLWP, 1981)
CHAPTER THREE- GROUP DISCUSSIONS AND PERSONAL INTERVIEWS

3.1 Introduction

Chapter two drew together the literature surrounding the paradigm of disability, the phenomena of workplace health and safety and the management principles surrounding the subject. After reviewing the limited socio-legal literature available (Paris v Stepney BC, 1951; HSE, 1989a; Kettle, 1979, Kettle, 1984) it was concluded that in the context of legal compliance and workplace health, safety and welfare individuals with disabilities and impairments should be considered a special class of employee. This is because as illustrated in chapter two they exhibit different needs to non-disabled individuals. Consequently organisations employing individuals with disabilities have a statutory and common law duty to take all reasonable precautions to fulfill their responsibility under the HSW Act and its relevant statutory provisions. As described in chapter two this is predominantly achieved within the context of the 'policy', 'hazard' and 'monitoring' domains (Amis & Booth, 1992). To reflect more appropriately the special needs of the target group this can be further categorised into what Westrum (1988) calls a 'cognitive adequacy model'. Cognitive adequacy focuses on three main areas namely, responsibility, communication and problem resolution. In considering the disability paradigm this is particularly useful as it considers the relationship between a system and the environment and is subsequently concerned with an organisation's ability to respond to observed hazards. Within the context of this study it also allowed determination of the special needs of individuals. Therefore to bring this into the context of the organisational and compliance domains, guidance on safety cultures (Pidgeon, et al. 1991), literature on worker participation (Glendon & Booth, 1982), industrial accident research (Hale & Hale 1972; Reason, 1990) and studies on attitudes and behaviour (Fishbein & Ajzen, 1975; Donald & Canter, 1993) were reviewed. From this it was concluded that following a 'cognitive adequacy model' would allow a form of priori to be established which would
constitute the characteristics of a systems model at the individual and organisational level. Subsequently this would facilitate iterative theory development from a standpoint of knowledge rather than supposition, as has traditionally been the case for some regulatory agencies (Williams, 1994).

From a methodological perspective it can be concluded from the literature that there is a strong need to actively involve members of any population in formulating any policy that may influence work practices or methods (Glendon & Booth, 1982). In fact, some (Finkelstein, 1991; Barnes, 1991; Oliver, 1990) would argue that in this particular instance the disabled are the only competent persons to determine those processes and functions within an organisation that may affect their health, safety and welfare at the individual level. Not to include representation from such a diverse class of individuals would, it is suggested, be a failure within the study by not utilising a rich and valuable source of qualitative data. Commensurately by failing to explore the true nature and characteristics of the needs of individuals with disabilities the author would have been guilty of studying the subject at a stage too far advanced for the level of contemporary understanding.

Consequently wishing to utilise as much data as possible it was the intention of this study to approach the subject from a theory building perspective. This element of the study had three primary research objectives 1) To determine those significant problems, dilemmas and barriers encountered by disabled employees in the subject industrial sectors; 2) To ascertain coping strategies and management control techniques used to overcome these barriers; 3) To determine a profile of cognitive adequacy as perceived by the study group. This was achieved by a two phased approach. Phase one consisted of primary data grouping through group interviews, focus groups and pattern coding to develop the emerging constructs. Phase two comprised of cross case analysis of individual data sources via personal interviews to provide further information. Finally the data from both phases were grouped to determine any commonalities, contrasting themes or constructs.
Chapter Three

3.2 A Grounded Theory approach

In attempting to develop a theoretical basis for a systems model for the disability paradigm the extensive literature review revealed limited information. Information was particularly lacking relating to the perspective of individuals and their perceptions of the social and organisational phenomena relevant to the constructs of a model. This was in contrast to the abundance of literature that sought to identify access to work programmes and the discrimination that disabled members of society were subjected to. Furthermore much work has, and is, emerging on the subject of safety cultures and management systems and it is from this literature that the 'priori' constructs of the cognitive adequacy and the cybernetic systems were developed. From this standpoint it was possible to explore and determine any common perceptions and underlying needs of the disabled in employment within the study population.

However prior to embarking further it is important for the reader to understand the author's perspective on the phenomena of the study, as it aids interpretation of both the study methodology and the findings. In theoretical terms the author believes that social phenomena exist not only in the mind of individuals but also in the objective world within which we work and live. Bhaskar (1978), Harre & Secord, (1973) argue from an equivalent standpoint and suggest that within these social phenomena there exist stable relationships. It is from linking these relationships together that other phenomena emerge and from these patterns we can develop underlying constructs of social and individual life. This chapter is concerned with understanding those constructs that underlie the individual shared perceptions regarding occupational health and safety provisions during work activities. As the literature review failed to identify previous work in this field it was hoped this study would fill an important void within that literature. It was concluded that due to the maturity of the subject it was necessary to adopt a grounded theory approach (Glaser & Strauss, 1967). This would identify the structure and extent that disabled employees were satisfied or otherwise and how they ranked provisions in place.
within the target industrial classifications.

3.3 Study methodology

The focus of this chapter is the inductive and deductive theoretical exploration of the paradigm of disability and its relationship with the phenomena of occupational health and safety provisions at the individual level. As a research topic this presented some difficulty as only limited literature existed on disability and occupational safety (Kettle, 1979, Kettle, 1984) and much of that focuses on the sickness absence profiles of disabled employees compared with non-disabled. Therefore it was necessary to draw on previous literature on occupational health and safety and the previous literature on disability discrimination to refine further the priori constructs of interest and from these develop the framework for the study. This approach has been followed by others in similar studies (see for example Woolcott, 1982). As the study sought to identify the more natural attitudes, shared values and phenomena relevant to HSW provisions for disabled employees it was concluded the study should follow a developmental approach to data collection. This comprised initially of qualitative data collection followed by quantitative data collection as part of the validation process. Therefore the study was completed in three phases. Phase one involved group discussions and focus groups, phase two personal interviews and phase three questionnaire development. Phase three entailed partial validation with supporting evidence provided by self completed questionnaires from a representative sample of the sub-population.

3.3.1 Methodological approach

It was felt that this particular study, which sought to define relationships in broad terms and cover contextual conditions fitted well with previous individual and group case study methodologies (Chen & Rossi, 1992) and theory development methodologies advocated by others (Glaser & Strauss, 1967). Further support for adopting this approach was provided after the initial literature review provided a deeper understanding as to the
Qualitative data has many advantages, in particular as pointed out by Van Mannen et al (1982), it allows emphasis to be placed upon peoples' lived experiences and is therefore well suited for locating the meaning people place on the events, processes and strictures of their lives as well as their prejudgments, presumptions, perceptions and assumptions. To reach this level of understanding it was concluded this phase of the study would necessitate initial adoption of a loosely bounded approach. A more structured approach would inductively develop as the concepts and constructs of interest emerged (see Marshall & Rossman, 1990 and Mishler, 1990 for examples of similar approaches).

At the operational level this involved initial group discussions with disabled employee groups whereby it was hoped a conceptual framework would emerge. This was followed by personal interviews with screened individuals employed within the engineering and retail sectors. On completion of phase one and two a postal questionnaire was developed and forwarded to a representative sample of the target population in order to validate and provide supporting evidence of the group and individual findings. The results of this questionnaire are discussed in chapter four.

### 3.3.2 Sampling unit selection

In any research involving groups a major hurdle has always been recognised as gaining permission to carry out such a study and coax respondents to participate (Hedrick, et al. 1993; Maruyama & Deno, 1992). In this particular case, sample unit selection presented many more problems than suggested by the more common literature on survey research. Similar problems have also been experienced by other researchers attempting to study phenomena related to people with disabilities (Maclean & Genn, 1979). From a research perspective the ideal would have been readily available access to a population list of all people with disabilities, categorised by employment sector. This was however not the case. In the first instance there were problems defining such a population (Merton et al...
Chapter Three

1956; Warren, 1976) and secondly, similar difficulties arose in selecting individuals who were disabled and in employment within the two sectors. Further difficulties also became evident in ensuring a fully representative sample of the population profile which would allow further work in determining construct validity (see Cronbach et al 1963; Oppenheim, 1992) of the resulting postal questionnaire.

3.3.3 Sample unit options

Although work has been carried out to establish a profile of the disabled population (i.e Harris & Head, 1971; Prescott - Clark, 1990) each had its own definition of disability and as such no comparison could be drawn. Therefore it was necessary to draw from the number of recognised options open to achieve a representative sample from either a finite or infinite population for the different phases of the study (Kish, 1965; Kruskal & Mostler, 1981; Yates, 1981).

It has been broadly estimated that disabled people make up 3 per cent of the working population. Sub-population lists were available from a number of sources such as the Department of Social Security, Local authorities, Disabled employer’s groups, groups representing people with disabilities etc. On exploring the theoretical and practical options available many issues arose. Some were ethical, in that organisations or groups did not wish to release details of individuals without their express consent. Some were political in that corporate head offices preempted the results of such a survey and felt that once individualised, at the local level, they might present problems for safety officers and managers. All groups contacted were exceptionally helpful but much centred around the politicisation which the disability paradigm has received. To an extent there appeared to be much apprehension surrounding disability and occupational health and safety.

Due to the nature of the study, political issues and the social infrastructures involved, it was not possible to identify a single population list of individuals or organisations that
would meet the criteria of the study, allow a researcher access to individual sample unit data and provide interview facilities. Therefore a composite population frame was developed which, it was postulated, was reasonably representative of the target group. On reviewing the theoretical and practical aspects of the sample frame it was concluded, although not ideal, the most appropriate methodology to use was information gathered from as wide a sample as possible; within the constraints of the study. This would narrow and focus more on the target groups as more defined constructs emerged. Therefore for phase one - group discussions, focus groups and interviews - a composite sample theory was adopted. This included use of sub-sample lists provided by disability groups, a sub-population list provided by the PSI publication and local authority data. The population list of disability groups was obtained from the results of a study undertaken by the PSI who publish a comprehensive list of information and advice providers to the disabled community (PSI, 1992). This is divided into county districts similar to those adopted by the EEF and the British Retail Consortium from which the samples of organisations were taken (see Chapter 5). The second phase of sample units was provided by local authorities from information gathered as part of the duty under the 1944 Act to maintain a register of disabled people. There were certain limitations to this approach in terms of sampling theory and representation of the sample. However all attempts were made to reduce sampling error. It is believed that all reasonable attempts were made to secure a representative sample of employees with disabilities who work within the retail and engineering sectors within such a politically constrained climate. Although at the early qualitative stages it was not necessary to establish a comprehensive population sample, attempts were made to improve the reproducibility of the study by structuring the methodology in such a manner as to enable a composite sample to be developed for the quantitative validation phase of the study (see Chapter 4).

3.3.4 Sample Procedure

Qualitative sampling which was used for phase one is purposive and representative rather than random and as such very much theory driven (Kuzel, 1992; Morse, 1989). From
465 organisations originally identified, 321 organisations remained within the selection criteria after the filter process. The screening process was carried out by elaboration of the theoretical construct of the study which in total resulted in 22 group study units and 56 personal interviews. On completion of the composite population list it was necessary to determine the actual sample units to be used in the study. To achieve this a filter procedure was applied to the population frame. Only those groups which represented or consisted of disabled individuals who were economically active and who were, or had been in employment within the last two years were selected. Initially it was hoped to carry out group interviews separately by specific target groups, engineering and retail. This however was not entirely possible due to the infrastructure and profile of the target groups and therefore a degree of integration took place at the initial stages. This emerged as a positive aspect as it allowed a wide collection of competing views to be illuminated in a mixed sectoral group. It is not felt by the author that bias occurred resulting directly from the mixed group discussions due to high-low risk perceptions.

From the population list 22 disabled employee groups were selected to represent as wide a spectrum as possible and requested, initially by letter (see appendix B), to assist in the study. Of these six agreed directly, 14 replied within two weeks and the remaining participants consulted with members and replied before the cut off date of two months. In total all twenty two groups agreed to participate in the study at this stage. Following the agreed collaboration a date and venue were arranged for each of the group discussions. The groups included people with physical and sensory disabilities and included amongst others paraplegics, partially sighted, partial hearing/deaf, diabetics, epileptics and arthritis sufferers.

To disseminate the information to members, most groups had a newsletter in one form or another in which a short abstract of the study was included and the incentive of a free glass of wine offered to all attendees. Those that did not have a newsletter tended to hold regular meetings and the same information was provided. This approach appeared to be effective as each group discussion was reasonably well attended.
Group discussions and focus groups were timetabled to last approximately 90 minutes and conducted in a private hall/room regularly used by the members. Prior to each discussion contact was made with the groups' key players to identify the most appropriate means by which to communicate according to the type and extent of disability group members had. Communication barriers were in the main overcome by the provision of local authority translators and the use of both verbal and visual aids. Respondents at the discussion groups could either respond verbally or in writing to each question. This in effect extended the anticipated time of a number of the discussions to well over three hours as a number found the latter method preferable. At each of the sessions an introduction was given and subjects were asked for their permission to record the interview. Although consent was generally given, this caused concern for some individuals and in one case permission was refused outright.

3.4 Group discussion

As previously remarked upon, group discussions were selected as the initial means of data collection in order to provide qualitative information relating to perceived problems, dilemmas and barriers, coping strategies and aspects of cognitive adequacy in securing health, safety and welfare. Group discussions also allowed the researcher to observe interactive communication over a range of topics and more specifically to observe how individuals tended to react to others disagreeing with their views (Kitzinger, 1994). Moreover, an advantage of using the group discussion methodology was that it allowed individuals the opportunity of overcoming their embarrassment over certain issues due to feeling a sense of identity with other peer group members. Research has demonstrated that on hearing others being open and frank an individual is more likely to do the same, provided they are confident of being in a supportive arena (Hoinville & Jowell, 1978). Furthermore, in addition to providing information used in the structuring of individual interviews, it was felt the dynamics of the group facilitated the expression of a wide variety of views. Commensurately, given many of the social and logistical difficulties presented by interviewing the same number of subjects individually, i.e., 35 subjects at 1.5
hours each, the group work was more acceptable to some individuals. Finally whilst the group interviews were not completely unstructured this methodology did allow the stakeholders and individual key players most directly involved to define and identify the issues of importance, rather than the researcher imposing an artificial structure on the data collection.

3.4.1 Group discussion framework

During the group discussions the first ten minutes were spent identifying and validating work groups represented and the degree of disability generally present in the group. Table 3.1 illustrates the make up and attendance figures for each of the group discussions. After introductions the group discussions covered the following broad areas:

Which problems, dilemmas and barriers exist to securing good health and safety while engaged in work activities e.g.:

**Problems:**
- perceived potential sources of injury at work
- perceived potential sources of ill health
- perceived levels of social support

**Dilemmas:**
- perceived attitudes towards disability
  - by peer group
  - by senior management staff
  - by line management
  - by professional staff - safety officers/personnel

**Barriers:**
- Individual barriers
- Organisational barriers

**Problem resolution:**
- Individual coping strategies
- Organisational coping strategies
- Key player interactional effect
## Chapter Three

### Table 3.1 Composition of group discussion

<table>
<thead>
<tr>
<th>Area</th>
<th>Group</th>
<th>No. of attendees</th>
<th>Estimated gp. membership</th>
<th>Job range</th>
<th>Industrial sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW</td>
<td>Disabled workers group</td>
<td>25</td>
<td>230</td>
<td>Office/ machinist/ manual labour</td>
<td>Engineering</td>
</tr>
<tr>
<td>NE</td>
<td>Workers with Disabilities</td>
<td>39</td>
<td>320</td>
<td>Office/ Manual</td>
<td>Engineering</td>
</tr>
<tr>
<td>S</td>
<td>RADAR</td>
<td>53</td>
<td>2500</td>
<td>Office/ Mgt/ Man/ Sup</td>
<td>Man/Retail</td>
</tr>
<tr>
<td>Sct</td>
<td>Employees Forum</td>
<td>34</td>
<td>372</td>
<td>Office/ Manual</td>
<td>Mixed</td>
</tr>
<tr>
<td>SW</td>
<td>Breakthrough</td>
<td>54</td>
<td>500+</td>
<td>Mgt/ Office/ Man/ Sup</td>
<td>Mixed</td>
</tr>
<tr>
<td>S</td>
<td>Disability Association</td>
<td>76</td>
<td>500+</td>
<td>Mgt/ Sup/ Off/ Man</td>
<td>Mixed</td>
</tr>
<tr>
<td>SW</td>
<td>Havering Assn for the Handicapped</td>
<td>12</td>
<td>&lt;50</td>
<td>Man/ Sup</td>
<td>Engineering</td>
</tr>
<tr>
<td>Mid</td>
<td>Midlands sports employees (disabled)</td>
<td>4</td>
<td>500+</td>
<td>Engi/ Off/ Man</td>
<td>Mixed</td>
</tr>
<tr>
<td>Mid</td>
<td>Shropshire Disability Consortium</td>
<td>45</td>
<td>147</td>
<td>Off/ Man/ Sup/</td>
<td>Mixed</td>
</tr>
<tr>
<td>S</td>
<td>Disablement association Barking &amp; Dagenham</td>
<td>73</td>
<td>350</td>
<td>Off/ Man/ Mgt/ Sup</td>
<td>Engineering</td>
</tr>
<tr>
<td>NW</td>
<td>National league of the blind and Disabled</td>
<td>32</td>
<td>500+</td>
<td>Off/ Man/ Mgt/ Sup</td>
<td>Mixed</td>
</tr>
<tr>
<td>S</td>
<td>Association of Visually Handicapped</td>
<td>86</td>
<td>500+</td>
<td>Off/ Man/ Mgt/ Sup</td>
<td>Mixed</td>
</tr>
<tr>
<td>SW</td>
<td>Choice Technology for the disabled</td>
<td>69</td>
<td>500+</td>
<td>Off/ Man/ Mgt/ Sup</td>
<td>Mixed</td>
</tr>
<tr>
<td>SE</td>
<td>Portsmouth craft &amp; Engineering group</td>
<td>38</td>
<td>100</td>
<td>Off/ Man/ Mgt/ Sup</td>
<td>Engineering</td>
</tr>
<tr>
<td>SE</td>
<td>William Merritt Disabled</td>
<td>86</td>
<td>500+</td>
<td>Off/ Man/ Mgt/ Sup</td>
<td>Mixed</td>
</tr>
<tr>
<td>S</td>
<td>GLAD</td>
<td>78</td>
<td>500+</td>
<td>Off/ Man/ Mgt/ Sup</td>
<td>Mixed</td>
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3-100
3.5 Results

3.5.1 General emerging themes

Interestingly, of all questions generated from the groups discussions, the most frequently emerging question related to the author. As a person who is not visibly disabled, many made enquiries as to the reasons and qualifications to undertake a study into the disabled community. This attitude was generally evident in most groups throughout the initial stages. Nevertheless after initial discussions surrounding personal reasons for undertaking such a study, many barriers to effective communication were broken down. This allowed themes to emerge from the discussions which initially were very diverse as was the level of understanding of the subject and the education levels of those attending. However, as discussions progressed in each case certain key elements and constructs consistently emerged. The first construct of the cognitive adequacy model to be discussed was the problems the target group face.

3.5.2 Problems

This part of the discussion addressed the perceived problems individuals with disabilities perceive to have while engaged in work activities and covered perceptions of potential injuries, sources of ill health and social support.

Although the initial design was based upon a loosely bounded approach, a priori structure included the question:

'Has any individual had an accident while engaged in workplace activities?'

As illustrated by figure 3.1 on page 104 this question evoked mixed reactions. Initial responses were dominated by respondents debating the extent of what constituted an accident. However from the pattern of responses it was concluded that most had been involved in some form of accident while engaged in work activity. These ranged from minor injuries such as trapped fingers in doors and furniture to more severe slips and trips.
resulting in injuries that would have warranted reporting under RIDDOR (DOEMP, 1995). The data drawn from the group discussions suggested that the type of disability slightly influenced the frequency and type of injury that occurred. For example amongst the physically disabled a pattern emerged where there was an increased prevalence of slips and trips, while for those with sensory impairments knocks and injuries to extremities such as fingers and hands were reported to be more prevalent. Interestingly although many had had accidents, nearly all respondents reported a reluctance to report such incidents. When probed further it was established that this reluctance was in part due to some of the blame being placed upon the individual concerned and a fear of the resultant loss of opportunity or job. This was the first evidence of the existence of a perceived blame culture and the potential for the development of barriers within organisations.

A distinct phenomena soon began to emerge from the discussions that the reluctance to report such activities was part of the cultural make up of organisations in which they were employed and was in some way associated with the degree of social support provided by the management. This is illustrated in the following quotes, typical of the views of many participants;

"If I report an accident to the Safety Officer it will inevitably be used against me in the future. It is hard enough trying to keep a job never mind making it even more difficult"

"Safety Officers are there to protect the company from the factory inspector not help me. If I tell him about an accident it will be my fault"

"I don't see that telling others about your mistakes is a good idea, do you?"

"We don't have a safety officer as such. If you have an accident you are supposed to report it to the supervisor. No one does though because you get in to trouble"

"In my company it is the personnel officer's job to monitor sickness and accidents. I have had three accidents since I have been at this company. Once when I slipped on the stairs, once when I slipped on the shop floor and once when the barrier hit me because I was too slow. Never have I reported them. They would just get rid of me." [amputated leg]

One of the most consistent issues to arise from the group discussions was the lack of perceived support exhibited by line managers and supervisory staff. This was particularly
evident in certain groups and individuals where reference was consistently made to the 'driving force' being production. The following statements are clear examples of the individuals' perceptions of the dominant culture that often exists within groups:

'I couldn't trust my supervisor'

'Production is the only thing that is important around my company. No one gives a dam about health and safety unless the Factory Inspector comes. So why should my particular problems be any more important than others? My supervisor would set me up if I complained about the standards of Health and Safety. (the reference to being set up was discussed to infer make redundant because of his disability)

'I wouldn't feel comfortable talking to my manager or the safety officer about the problems I have at work.'

'If I went to talk to my line manager about my problems he would not be interested unless it improved production. Oh yes they say my door is always open but it's not really'

In broad terms, when groups contained individuals from both the engineering and retail sectors the retail sector employees generally supported their organisation's attempts to communicate with employees. Some even saw their companies as progressive and open minded. That is not to say all. The following illustrates the contrast in some of the respondents organisations:

'My employer accepts my disability and I can talk to my manager about any subject relevant to my work'

'I have had accidents at work but I have never reported them because they are so minor. I know the company is very hot on safety, especially of the public... My job is not dangerous but I can always talk to my manager or supervisor if I have a major problem'

'My company are good at safety. I have never had an accident as a result of work. Well maybe when I first started but once the company got to know me and I knew who I could trust things have been fine'
As illustrated in Figure 3.1 a number of patterns consistently emerged at both the group discussion and focus group level. From these patterns it was deduced that most had been involved in an accident while engaged in work activity. They had not reported this incident for a number of reasons. These included the perceived existence of a blame culture, absence of knowledge of rule sets, failure of management to manage. One consistent pattern to emerge was those employees who had been employed by their organisation for a longer period of time appeared to demonstrate a more open and communicative approach to their employer. The length of time an individual had been employed with the organisation appeared to influence the likelihood of an individual having been involved in an accident and being dissatisfied with the organisation's processes and provisions for their health and safety. Reasons given for not reporting the incidents included aspects of a 'blame culture' being evident, loss of job security, perceived value of safety officer's role.
in terms of role ambiguity, and the feeling of futility. Comments included 'keep a low profile' and 'make no fuss'.

Respondents were also requested to outline which area of their organisation they considered provided added value in the context of workplace safety. In the majority of cases there emerged a number of constructs which appeared with regularity. The construct which emerged to be reported as most important was that of communication. A dominant pattern emerged within groups of the perception that access to proper information was most important if they were to have adequate provisions made for their health and safety. However many felt they were denied access to such information for a number of reasons. This was closely followed by the need to be involved with the decision making process via attendance at safety committee meetings. A further criterion that emerged was the perceived need for employees who were non-disabled and in positions of power or control to be provided with training on the needs and norms of individuals with disabilities. This however caused mixed emotions with a proportion of the group members. Some commented that although it was felt necessary to provide such training they questioned at what stage it should be provided and by whom. Finally on what can be categorised as the 'software' domain elements there was an overriding need felt to alter the negative attitudes of many employers and employees towards disabled employees.

On the hardware side those elements perceived to be important to the subject group included access to WC facilities and welfare provisions such as refreshment areas. It was not uncommon for individuals with disabilities to be less mobile and thus take longer to reach the canteen or coffee bar. However as a result of time restrictions many reported they would not utilise their breaks at all. Workstation design and floor surfaces were also felt to be of importance to the groups. Although many individuals appeared to have specific areas they wished to discuss the above are those elements which consistently emerged and formed a regular pattern at each of the group discussions.
The next broad-based question involved the identification of any ill health effects the stakeholders perceived had occurred as a direct result of work activities. They were asked, 'While engaged in a work activity have any of you felt it has had a negative effect on your health?'

After initial discussions regarding the extent of the definition of health many responses although surprising fitted well with developing health and safety literature. The criterion that emerged as a dominant theme through out the group discussions centred around occupational stressors and ergonomic issues. These included feelings of general tiredness, role ambiguity and peaks and troughs of work loads due directly to the impairment or disability. This was followed closely by more personal concerns such as pressure sores amongst wheelchair users and repetitive stress injuries from individuals over compensating for their physical disability. Furthermore many reported lower back pains which they attributed to work activity and over compensation.

Other elements that were discussed included the missing of lunch breaks amongst individuals who were insulin dependant, general frustrations about carrying out work activities, options for promotion and common attitudes of employees towards disabled individuals. This criterion was discussed later in other groups. When respondents were asked to describe reasons for missing lunch breaks etc. the answers tended to focus either upon catching up on work missed or not wishing to appear out of the ordinary. One such example includes a male who had recently started a job with a new company. Although he was diabetic and sugar dependant he missed lunch because he went out on a visit with his new manager - who did not as a rule stop for lunch. He did not feel it appropriate to request a lunch break and subsequently collapsed. Additional comments that were noted as important to the study were the stakeholders' perceptions that there was much confusion regarding existing levels of knowledge amongst peers. The diabetic scenario was cited on many occasions where for example it was not generally known what action should be taken if an insulin dependant diabetic collapsed. It appeared that some would administer insulin while others would attempt to increase sugar levels. In addition much emphasis was placed on the differences between rehabilitation and normal work.
protection. The following outline some of the more pertinent comments illustrating many of the consistent patterns within the discussions:

'Management in my company don't really like having to employ a person like myself. I think they only do so because of the law.'

'I am not really wanted in my company. They just like having a disabled person on the reception desk as it is good PR.'

'My employer thinks that every time I feel tired I am just shirking. I am not, I genuinely get very tired during the day. I sometimes don't comment but I am probably so tired that I could cause an accident to others.'

One very pertinent statement included the following:

'You are all talking about health and how work affects it but I would definitely be less healthy if I didn't have a job'

Figure 3.2 illustrates the health criteria that emerged from respondents during the group discussion phase of the study.

Figure 3.2 Health criteria reported
Groups were asked their opinions on the degree of social support they felt they received from different levels within and outside their organisations. Social support can be described of comprising support at the individual and institutional level, communication and individual trust. Broadly it emerged that respondents within the groups felt they received low levels of support. Many reported that they felt management were least able to offer support as they were always too busy to be interested in issues that were very individual. Patterns of responses also emerged both within groups and across groups. Although the level of support was reported to be low many reported gaining support from different key players within organisations. Most feelings however are illustrated by the following comments:

'I feel most of my support in times of difficulty comes from outside the company. Some though does come from my work colleagues'

'I feel I don't get much support from any one at work. Anyway I would never ask'

'We all need some help at times during our life but it wouldn't be to work that I would look'

In terms of trust it appeared that management were perceived to be trustable with certain information about health but were not perceived to be able to communicate with the respondents.

Equally there appeared to be a differential in the overall degree of support provided to individuals in each of the sectors. The results suggested that the dominant culture of organisations within the engineering sector was one of productivity as the first priority. Consequently there was noticeably less time or commitment to address the more social aspects of organisational activity. Despite this, in nearly all groups it emerged as a consistent pattern that elevated levels of social support within their companies was needed. Much debate ensued around the type of social support needed and the level to which it should be provided. In broad terms it was felt that companies should and could provide facilities and/or mechanisms that would enable improved support. But most felt that due to the increased work pressure for all this would not be a realistic option for
Encouragingly a number of individuals from the retail sector indicated that their companies had positively addressed this issue. Some had set up disability employment groups and allotted time periods for meetings where disabled individuals could discuss matters in an open and frank manner. These were reported to have been very successful particularly in improving the morale of disabled employees. They were however reported not to improve individual trust, communication or support with any one else but those involved in the group. This generally did not include management.

Communication generally was deemed very poor within employing organisations, especially regarding health and safety issues. Many individuals felt that even though their employers advocated some form of consultation process in nearly all cases they were barred from attending through elements that were 'ingrained in the way things were at that site'. Much concern also existed regarding the manner in which consultation tended not to occur at an individual level. This was perceived to be very important as the stakeholders felt they were the only ones who really understood their own limitations and strengths. On the few occasions when employees with disabilities were specifically consulted it was perceived to be as an afterthought rather than strategically planned as part of a structured programme or process. This appeared to engender a high degree of resentment and emotive feelings of isolation within certain groups. Many of their problems or dilemmas appeared to be related to the degree of support provided by key players.

3.5.4 Perceived key players by respondents

There were a number of individuals who could be termed key players within the paradigm of disability. The literature review identified a number of such players which included safety officers, personnel officers, line management, senior management, EHOs, HSE inspectors and DEA/PACT advisors. Groups were asked to identify which of these ranked highest in terms of support and assistance in securing their health and safety at work.
Surprisingly most felt that their line manager was the person who was best placed to provide assistance but who in most cases was the one least adept to do so. This view was reinforced by the discussions on social support. Furthermore strong feelings of resentment emerged regarding company safety officers. The dominant feeling was that they were not working in the interests of disabled employees and that their primary concern was to protect management from prosecution by regulatory authorities. Much concern was also expressed at the relatively low levels of knowledge safety officers exhibited relative to the paradigm of disability, at an organisational level, and therefore they were not perceived as players who were in a position to provide much assistance. In contrast the role of the medical profession was very much supported as playing an active and key role in securing their health, safety and welfare while at work. However it was reported that both medical practitioners and occupational health nurses were becoming less evident in the workplace. Not all respondents or groups were able to comment on this aspect as not all organisations employed occupational health professionals. However most groups were familiar with medical representatives in the non work environment but reported increasing barriers to accessing their assistance in maintaining gainful employment.

Other key players identified by both the literature and interview groups included the government employed Disabled Employment Advisors (DEAs) and the Placement and Assessment Counselling Teams (PACT). Of these groups there was much reported criticism of their role in the employment of people with disabilities. Most concern regarded their ability to objectively assist disabled employees once they had been found employment. It was also reported to be common practice to evade issues regarding safety as it was not in the interest of the DEAs.

During the discussions other key players emerged that were not identified within literature surrounding the subject. One of the most interesting aspects was the strong reported reliance on external groups as a source of information and dialogue. Many individuals felt these were far more important to them as individuals for social support than the institutional key players. In fact groups reported that they would seek information on
health and safety issues from other disabled individuals within their social network rather than approach any work colleague.

In following the provision of support for HSW information a number of external agencies were also relevant to the paradigm, including HSE inspectors, and EHOs. Once again however although they would trust them with certain categories of information they reported many problems with using regulators. Such issues included trust in terms of maintaining anonymity and support in terms of 'what will happen to my job'.

Figure 3.3 (see following page) illustrates key players within the paradigm at the institutional level and those external but who have a significant role to play within the cybernetic system of the organisational SMS. The figure is two dimensional with height indicating relative importance and width communicative accessibility to the player. This illustrates the emerging differential between those individuals who are perceived more valuable and the degree to which they are able to communicate with that player.

3.5.5 Problem resolution - Coping Strategies

The next stage of the group discussions was to explore the methods used by individuals to overcome the problems, dilemmas and barriers identified. These are termed coping strategies. To explore these coping strategies groups were posed with the question:

'What mechanisms do you use to cope with the problems and barriers that you meet while engaged in work activities?'

Responses to the question were very mixed and included some very elaborate methods. However from group discussions and the focus groups a dominant pattern emerged. Data collected from these discussions suggested that the dominant coping strategies
included individual isolation mechanisms, barrier development, aggression and the 'play on sympathy'. Individuals reported that they would often isolate themselves from other groups and individuals as this made it easier to evade probing questions and prevented other people from being embarrassed. Equally problematic was the reported development
of barriers within group dynamics. It was consistently reported that the social isolation many felt at work acted as a barrier to effective communication. It was also admitted that on occasions, when it was felt necessary, the play on emotions would be used to develop a feeling of sympathy. This emerged at an early stage of the group discussions and was further explored in future groups by way of open and closed probing questions. Interestingly there was much heated discussion between certain groups as to the relevance of this as a question set. The following extracts from respondents succinctly illustrate concepts that emerged as dominant themes from groups and individuals:

'I respond to people in the way they respond to me. If they treat me like a cripple I act like one. Whereas if they treat me OK I react normally'

Other common views are illustrated by the following range of quotations:

'I will always act as the aggressive one in a work type situation because then people leave me alone'

'In that way I can't be disappointed if it does not come. What is really annoying is that if you ask for help once they think you need it all the time, and I do not' 

'I approach my job very professionally and I expect people to do the same to me'. [authoritarian type manager]

'At first I never spoke to the people at work as I always felt they were embarrassed by my looks. After a year or so I became good friends with one of the other people in the office and now I am accepted just like everyone else'.

'At work I make people feel guilty if they don't help me. All you have to do is say it out loud'.

'I change my wheelchair once I am in the building. This helps me cope with all the narrow doors and means the company do not have to spend loads of money changing them. The company bought the chair for me'.

Overall the theme that emerged was coping strategies used by individuals altered according to the situation and the problem they needed to cope with. Problems varied and included both hardware and software factors. In organisational terms the emerging problems, dilemmas, barriers and resulting coping strategies presented particular barriers in terms of organisational cybernetic systems. On drawing on existing HSW literature and group results, of particular importance was the effect on group dynamics and the communication process. Individuals reported to filtering information to key players within organisations, withholding certain information and actively avoiding certain situations. See figure 3.4.
The next stage was to gain a deeper understanding and insight into the emerging findings by isolating and focusing on certain developing constructs via individual interviews.

3.6 Individual interviews

3.6.1 Introduction

The exploratory group and focus discussions were followed by a series of semi-structured individual interviews. A priori set of questions were developed from the emerging themes of the group discussion phase. The objective of individual interviews was to develop a deeper understanding of the constructs in a more isolated and tightly bounded situation. This was felt to be particularly relevant where individuals might not wish to discuss personal problems in front of other individuals and would allow a more
personal approach to data collection. It was also hoped that by interviewing individuals new data would emerge that may have been masked by the group situation (Kitzinger, 1994). On completion of this phase the data collected was summed with the group data and compared to determine whether any significant new findings had emerged and then used as the foundation for the questionnaire development in the validation phase.

3.6.2 Methodology

The sampling units were selected from the original population profile using a comparative and contrast logic resulting in a sample size of 56. Individuals who had attended the group interviews were not included in this phase. Each individual was written to or telephoned and asked if they would be prepared to be interviewed regarding their perceptions on safety and health at work.

Once individuals agreed to the interview they were contacted either directly or via an advocate from the local disability group. Prior arrangements included a schedule of topic to be covered and details of the preferred medium in which the questions would be discussed. On a number of occasions an interpreter was used. On 48 out of the 56 occasions interviews were taped. On eight occasions the interviewees were reluctant to have a tape recording of the interview made. Reasons given ranged from personal preference to fear of the tape being made available to employers. Content analysis was used as the 'diagnostic tool' of choice for this qualitative data analysis. The overall purpose of the content analysis was to extract phrases representative of the perceived levels of satisfaction with the provisions put in place by employing organisations and the value criteria placed upon identified elements of a systems model for the work place environment.

A more closely bounded interview protocol was developed for this stage which was piloted on a representative sample of the target group. On completion of the pilot a number of amendments were made on ethical grounds (see Black, 1984; Seedhouse, 1986 for further information).
In order to convert the raw material into item categories for the development of the questionnaire, the verbatim quotations provided by the transcripts were re-written onto separate cards and subjected to scrutiny, to determine any regularities. More specifically, situations reported by the subjects which conveyed the same meaning were grouped and compressed into a single more general statement. This procedure was undertaken twice to eliminate repetitive statements or situations, and at the same time reduce numbers.

Once these had been sorted they were coded by following the undermentioned steps:

- Identification and listing of statements onto separate cards
- Reduction of items into more general statements
- Classification of statements into categories by two independent judges
- Further reduction of items within each category into more general statements

Percentage agreement on item category was carried out by two independent judges. Each read through the transcripts of both the group discussion and the individual interviews and identified those common factors which have now been grouped and categorised. The results of the two judges were analysed for agreement where Kappa = 86.45 per cent indicating a good level of agreement between the judges on the commonality of constructs between transcripts. The following results include the data gathered as part of the qualitative group individual interview stage of the study.

3.7 Results of individual interviews and group discussion

3.7.1 Introduction to results

During this phase many situations had been identified which were potential sources of concern for individuals with disabilities or impairments. In addition to the data gathered by the group and individual interviews a theoretical basis was also provided by the literature review to develop each item for the validation questionnaire. A list of these categories is provided below:
Chapter Three

Group and personal interview data

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The inductive rationale for these constructs will be discussed as follows:

3.7.2 Inductive rational - social support

One group of items to emerge from the transcripts seem best to describe perceptions that refer to the need for social support and the fact that this was generally lacking in the employment situation. Many disabled individuals felt isolated when they were at work which led to them becoming more insular and therefore paying little or no attention to others. When questioned on matters of the effect on safety a typical and recurring response is illustrated below:

'Well once when I first started work in my present company I didn’t talk to anyone for nearly two months. I think they were afraid to say anything in case they said something wrong. It got so difficult that I felt I couldn’t even ask where the toilet was until I had wet myself.' (Physical Disabled)

'We had a fire drill when I started in my first job, but as I worked in the packing room I didn’t hear it and didn’t know until they all came back.' (sensory-deaf)

This linked with emerging findings of the constructs surrounding key players and the degree of communication provided. Communication was equally highlighted as being of much importance to individuals. Using content analysis it was found that over 80 per cent of respondents to the individual interview stage considered that to ensure their health, safety and welfare they perceived communication to be of the ‘up most importance’ or
'mostly important'. The following illustrate emerging patterns:

'I think we just don’t talk to each other enough'

'If I could communicate effectively with people at work I would not be perceived as a safety problem'

'Talking to people is the most important thing to my safety and health'

Most don't think of me as a safety risk once I am at work but I often get annoyed with people who treat me differently and purposefully do something that may be dangerous. It's peoples' attitudes that cause the problem. I am just as capable as everyone else. Why don't people just let me get on with my life.

The following questions received the following typical responses:

Q. Who do you feel you get most support from at work?
A. My line manager should be the one person at work I can really talk to. He is quite young but I think he wouldn't understand the way I feel sometimes ... Being in a wheel chair is no fun and sometimes I get a bit off with people, especially when the company organised a health work week all around sports I couldn't play.

Q. Are there any times at work when you feel uncomfortable telling people about your disability?
A. The problem with telling people about your disability is that they always treat you differently. I know what I can do and what I can't.
A. If I can get away without telling people at work about my problem then I will. I can do this most days because I use a proper seat as opposed to my wheel chair once at work.
A. I really dislike having to tell everyone at work that I have epilepsy. It is no one's business but mine. All they do is use it against me when it comes to promotion and courses.
A. I have the opposite problem. Generally people don't know I only have one real leg as my prosthetic is very good and most people think I just move very slowly. Even my senior manager didn't realise for over a year.

Q. Have you had much involvement with your company's Health and Safety Advisor?
A. All Safety Officers are interested in is how much of an insurance liability I am. I wish I had never told the company about my diabetes.
A. Ever since I told them about my epilepsy he has done nothing but ask about whether I should be working in an engineering industry... He wants me to take a pay cut and work behind a desk where I can be monitored for my own safety.
A. My safety officer is quite good he always gives me proper notice of the exact time and date of fire checks (fire drills), so I can make sure I am on the ground floor (office in a basement)
The environmental or hardware aspects were also considered. Respondents were requested to answer the following question related to the environmental conditions in which they worked:

Q. Do you think the environment you work in is satisfactory for you as an individual?

A. There are no induction loops in any of the buildings where I work.
A. I have little problems while doing my job, it’s just getting to the loo and going for a coffee break. I generally remain at my desk for the whole day because its easier.
A. The company only have one disabled toilet and it is situated where the public can get access to it but not me. I use the normal one which is quite difficult if I can’t hold it until the end of the day.

As can be demonstrated by the above extracts there are a number of elements which affect respondents and which continue to be recounted as problematic by respondents. Overall it emerged that many of the problems identified by the target group were either directly or indirectly related to the level of social support provided by the institution via the key players.

3.8 Discussion

It was felt that this phase of the study revealed a great mass of data much of which was rich in content and very specific to the target population. This was probably the hardest part of the study due to its nature, the politicisation of the disabled movement and the lack of awareness of many non-disabled individuals. However it was probably the most worthwhile and interesting. It is considered that many of the underlying problems faced by disabled individuals would not have been revealed had a strict priori set of theoretical constructs been adopted. A number of constructs continually emerged as being perceived important; these included social support, software provisions and barrier reduction. Research has demonstrated poor social relations at work are associated with job stress, role ambiguity and job dissatisfaction (Davidson & Cooper, 1981). In contrast good relationships at work, which is part of social support from management, supervisors and
peer group, have been related to decreased levels of perceived levels of work stress (Sutherland & Cooper, 1986). Social support is seen as a function of organisational culture and thus is important in terms of the elements of the cognitive adequacy model. In fact Landy & Trumbio, (1980) suggest that the organisational climate or culture may be seen in terms of four factors. That is autonomy, structure, reward and consideration orientation and is related to the dimension of satisfaction and dissatisfaction. They go further and suggest that employees' perceptions of the culture, customs and climate of an organisation are relevant and necessary to understanding the potential sources of stress and ill health in the organisation.

Furthermore they suggest that the concept of social support is associated with the concepts of participation and a sense of belonging. This argument is further extended by distinguishing between what they term interpersonal support i.e. from individual relationships and institutional support from the general social and communal systems. It is evident from the qualitative data that there is some concern over the level of institutional support provided by key players. It also emerged that those individuals whose role it should be to ensure a supportive culture for disabled employees are not necessarily those that actually do. It would appear that there is also a differentiation in the level of social support provided within the engineering sector and the retail sector. Those who are employed within the retail sector emerged as more likely to receive elevated levels of social support than those employed within the engineering sector. Poor social support has been found to be detrimental to the health and welfare of employees in a number of studies (Karasek, 1979). Karasek, (1979) found lack of organisational participation and job autonomy to directly result in an increase in depression, exhaustion, sickness rates and pill consumption. Friedlander & Greenburg, (1971) also found individuals who have a low perceived level of support in an organisation fared significantly less well in training programmes - something which directly impacts on the safety of individuals at work. A number of studies such as Caplan et al. (1975) have also found low participation in workplace activities was related to poor moods, escapist drinking and increased levels of smoking. In contrast Margolis et al. (1974) demonstrated that increased opportunity to
participate resulted in improved levels of physical and mental health.

The responses that emerged from the sample appear to suggest that a disabled person's response can perhaps be represented by four main domains of dissatisfaction. (1) the general lack of effective communication systems at all levels, (2) the lack of participation in policy development and operational activity (3) lack of institutional and interpersonal support, (4) lack of understanding by all tiers of the organisation.

The general profile of respondents to both the group discussions and the individual interview questions, it is believed, set a framework of cognitive adequacy for organisations to meet the specific needs of the disabled community within the engineering and retail sector. At the operational level respondents rated questions on the 'provision of specific information on health and safety' as being the highest priority. This was closely followed by 'Access to safety meetings and consultation with employers and 'training of other employees on the safety issues relevant to disabled employees'; both being deemed as important constructs to the target population. Factors such as the 'attitudes towards disabled employees safety and health' and 'access to WC facilities' were also considered important. Surprisingly all but the WC facilities were considered to be the 'software' elements of a safety management system. On the 'hardware' side of the systems model those constructs deemed important include 'workstation design' and 'access to welfare provisions' such as tea/coffee making facilities and rest rooms., suitability of floor surfaces, suitability of safety signs and 'means of escape in case of fire'. Furthermore the overall results of the group discussions would suggest that a great deal of importance is placed on the degree of support provided by the organisation and that those in the retail sector were more likely to receive more social support then those in the engineering sector.

Holistically this suggests software elements of organisational SMS are ranked higher than hardware elements by the group. It would also suggest that respondents find institutional support low. Of those key players within organisations work colleagues were
Chapter Three

perceived to provide most support, followed by supervisors and lastly line management.

3.9 Conclusion

Overall it was deduced that a number of problems exist for disabled employees. Those emerging as critical factors include institutional support and interpersonal support from both internal and external key players. However on further probing it emerged that low levels of institutional and individual support were exhibited by many organisations. It further emerged that communication - part of the support mechanism, access to specific channels of communication and the resolution of problems were also perceived to be low. Other interesting facts to emerge from the discussion phase included the lack of access to welfare provisions, the strength of reported barriers to securing health and safety provisions, on both the employee and employers side, and the negativity of the perceived attitudes of key players. These can all be measured in terms of an organisations cognitive adequacy condition - as perceived by the target group.

The next stage in this study is to determine by self completed questionnaire if data collected from a representative sample of the population supports the findings of this chapter.
CHAPTER FOUR
SUPPORTING EVIDENCE OF THE
DISABILITY PARADIGM

Questionnaire

'Man is an embodied paradox, bundle of contradictions'

Charles Colt 1780-1832 (source, OWLP, 1981)
Chapter Four

CHAPTER FOUR-SUPPORTING EVIDENCE OF THE PARADIGM OF DISABILITY

4.1 Introduction

The purpose of this chapter is to provide supporting evidence of the constructs and phenomena emerging from the qualitative study, as reported in chapter three. In order to provide such evidence it was necessary to test the emerging theories within a representative and random sample of disabled employees using a probabilistic methodology. This was carried out utilising a measuring instrument comprising a self completed postal questionnaire. The instrument was developed from the emerging findings of the qualitative study and a pilot trial of a sample of respondents. This chapter is divided into firstly the background and methodology; secondly analysis of responses to question sets on 'hardware' and 'software' elements of a safety management system (SMS) and thirdly the determination of difference between perceived 'degrees of individual importance' and 'institutional commitment'. This is followed by an exploration of the relationship between cognitive adequacy (CA) and industrial sector and the degree of social support. Finally the results are discussed and a conclusion drawn.

4.2 Background

Chapter two outlined previous work, developed the context in which the study is embedded and formulated the overall hypothesis. Based upon this hypothesis chapter three explored, at the individual level, the component elements of a cognitive adequacy (CA) model - as related to the policy, hazard and monitoring domains of HSW performance - by means of group discussions and personal interviews with disabled individuals. Emerging findings were subsequently subjected to an inductive and deductive logic to develop individual question items for validation and confirmation. The results of chapter three suggest there exists a difference between the degree of
importance disabled employees place on key constructs and the degree of institutional commitment provided by employers to those constructs. Equally many of these constructs, perceptually, appear to be ranked more important at the individual level with regard to health, safety and welfare. This has implications for employing organisations in meeting their statutory duties under the HSW Act and relevant statutory provisions. Emerging findings also suggest a difference between the degree of social support provided by key players and that cognitive adequacy - related to HSW compliance - is related to sectoral differences. Furthermore this chapter explores the interdependence of potential influencing relationships between demographic criterions such as gender, category of disability, employment category and institutional cognitive adequacy.

Therefore it was concluded that to provide supporting evidence of emerging themes they must be subjected to a test of significance via a randomly selected and representative group of disabled employees. As such this chapter attempts to answer a number of research questions namely:

Are organisational hardware elements of a SMS ranked less important than software elements?

Does a significant difference exist between individual levels of importance and institutional commitment to key constructs relevant to HSW compliance?

Do differences exist in the degree of perceived cognitive adequacy between sectors?

Are disabled employees more likely to receive social support - related to HSW - from their peer group than institutional providers.

These research hypotheses were all tested by applying the test of \( H_0: \mu_1 = \mu_2 \) for each of the criterion measures and its equivalent median value where appropriate.

4.3 Methodology

4.3.1 Research design

The research design for this stage can be considered socio-technical in its function. That is to say it was not possible to follow the strict "Classical research design" as advocated
by Ronald A. Fisher (1971). In fact it has been argued that although the classical design has many advantages for laboratory based research, on leaving this secure environment and entering the world of social and individual constructs, it becomes restrictive and may lose much of its power and reliability (Robson, 1993). In this real world there is in effect a trade-off between the reliability and validity of the research findings and the practicality of the research design. That is not to say that real world research is not valid. Recent developments in social science methodologies have now made it possible to control variables at the post-test stage rather than the pre-test stage as has been commonly accepted for many years (Campbell & Stanley, 1966).

In the social science model of research, data is collected by observing the phenomena being studied (Moser & Kalton, 1984). Generally this can be carried out via either observational methods, survey research, secondary data analysis or qualitative research - as utilised in Chapter three. However not all phenomena can be directly observed and therefore it is sometimes necessary to elicit information on the phenomena by asking people who have been subjected to the phenomena (Howell, 1992; Moser & Kalton, 1984, Likert, 1932). This can, with care, be carried out via survey methodology appropriately advocated in the literature by W. Edward Deming (1950) in his book *Some Theory of Sampling*, and others (see for example Reuben Cohen, 1979). Within the context of occupational health and safety management similar methodologies have previously been utilised in this type of study - for example Rundmo, (1994) and Brown and Holmes (1986). The literature was further reviewed in an attempt to reduce error factors of internal and external validity (Robson, 1993; Maclean & Genn, 1979; Frankfort-Nachmias & Nachmias, 1994) and it was concluded that the most appropriate design to follow would be a variation of the 'post test only control group' design (see Frankfort-Nachmias & Nachmias, 1994). This is a variation on the likes of the Solomon four-group design and the classical design in that it allows random assignment to either the

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1 Whereas in the laboratory it is possible to manipulate the variables so as to establish the time sequence - thus obtaining evidence of whether the independent variable precedes the dependant variable or vice versa- in the real world of sociology and organisational processes or systems this is not generally possible.
experimental or control group and measurements can be taken either during or after the introduction of the independent variable.

4.3.2 Measurement Indicators

Although the literature contains a number of studies on the function of attitudes (Katz, 1960), safety attitudes (Donald & Canter, 1993; Glendon, 1991), attitudes and behaviour (Fishbein & Ajzen, 1975; Kleinke, 1984) and how to change behaviour (Becker, 1974; Becker & Rosenstock, 1987) an instrument did not exist which would measure the emerging findings of Chapter three. In response therefore it was necessary to develop a measuring instrument from first principles. Various authoritative texts on the subject were consulted prior to and during the development phase. These included Oppenheim, (1992); Cronbach, et al (1963); Blalock, (1982); Bradburn & Sudman, (1974) and Heise, (1970). The literature concludes that it is not possible to detect peoples feelings or attitudes, or measure directly their intensity. Therefore an assumption is made (Bock & Kolakowski, 1973) that individuals express these attitudes and feelings by means of observable behaviour such as reactions to words and phrases interpretable in the framework of a given language and in a socio-historical and cultural context (Przeworski & Teune, 1970). Many studies have been carried out as to the relevance of this assumption and to the design of unidimensional and summative scaling techniques. Examples include Heise, (1970) and Likert, (1932) which attempt to measure these ideological constructs. Miller (1977) provides further support for the use of such scales by arguing that they are based upon the ideology of everyday perceptions and not theoretical constructed observation. The fact that they are extracted from everyday perception and from members of the population makes them even more valid as indicators of the populations ideologies and values. It is these values that are so important if organisations are truly going to provide proactive health and safety management.
4.3.3 Methodology of Questionnaire Construction

In this phase of the study a self completed postal questionnaire was used as the main instrument for collecting data on the phenomena of interest. Thus the main focus of the questionnaire was the question to be answered by the study. As such, a major consideration was to ensure when formulating question content, structure, format and sequence that all married to guide the respondent to answering those questions most important to the study. The actual content of the questions was mixed, many factual, others opinion, and some were attitudinal. The factual questions presented limited problems when it came to validity as they were factual dichotomous responses. The attitudinal questions however were scalar or ordinal and as such more problematic. Consequently further reference was made to existing literature on questionnaire design and statistical analysis. The literature revealed that much work had been carried out and broadly concluded single item questions to be inefficient (Eysenck & Eysenck 1985) to measure constructs such as attitudes. Thus it was concluded important to generate multi-scale item patterns which addressed the problems of reliability, unidimensionality and word bias.

Following the suggestions of Oppenheim & Agresti (1990) on improving internal validity and reliability, the scales were constructed by following the methodology advocated by Likert (1932), using a summative scaling procedure. Each test item was designed to be an emphatic statement of opinion which had been generated from the statements made by typical respondents in the qualitative phase of the study (Chapter 3).

To ensure the validity and reproducibility of the measurement instrument it was felt necessary to pilot the questionnaire and each battery of single items on a representative sample of the target group prior to dissemination. An additional objective of piloting the measurement instrument was to provide further evidence in support of using the component items and as such develop a more reliable and valid measurement instrument.

To achieve the above and reduce the number of items within the questionnaire, data
collected as part of the secondary pilot was subjected to 'Principle Component Analysis', (PCA) as part of data reduction, and Cronbach et al. (1963) alpha coefficient for reliability. The principal component analysis was used to examine the resultant structure of the pilot measures and determine non-reliable tested criterion measures. Following the principles of Nurusis, (1994) PCA was capable of determining the minimum number of components that were needed to account for the maximum percentage of the variance within an item set. Ostensibly this allowed determination of the dimensionality of the data set and any underlying dimensions that may have influenced the final analysis. Furthermore it allowed data reduction by providing a benchmark for cut off via correlation co-efficiency.

Individual items were extracted in such a way that there was an adequate fit without loss of parsimony. In the first instance Cattell's Scree test (1966) was used to eliminate all eigen values below 1. The resultant factors were rotated by using Varimax rotation to identify any underlying dimensions that may exist and further categorise the constructs of interest.

The second stage included a pilot of proposed questions to representative respondents. The sum of each test item was correlated with the total summative score and those which demonstrated a high enough correlation coefficient were retained, all others were rejected. This methodology has been described by Lemon (1973) as appropriate for such unidimensional scale development. Cronbach alpha coefficients were calculated for all attitudinal questions by using sample respondents and then re-sampling. After eliminating those questions which did not attain an alpha co-efficient of 0.6 and once questions were either altered for political correctness or removed for reasons of internal validity the questionnaire was ready for use.

4.3.4 Data Collection

After deciding 'what' and the 'how' of the study it was now necessary to proceed to the
data collection phase. However, while using a postal questionnaire it was acknowledged that it would have its own internal disadvantages. The first being that the questions would need to be very simple and free - as much as possible - from jargonism. Questionnaires are also subject to a degree of bias through response rates. That is to say there is generally a low response rate to postal questionnaires, and that the non-responses also produce an effect on the results and thus the generalisation of the study findings. The first problem was dealt with by piloting the questionnaire repeatedly, including a stamped addressed envelope (Dillman & Moore, 1983), addressing the questionnaire to a specific person and telephoning (Nederhof, 1988) and writing to non respondents (Miller, 1977). The use of registered post was considered however this was dismissed due to cost implications and research which indicated this may have a negative effect on response rates (Nederhof, 1988). As the questionnaire was being forwarded on 'The Robens Institute' headed paper and signed by a Doctor, the questionnaire had an increased legitimacy. The second point required more detailed analysis of the population frame and comparing the respondents and non-respondents by geographical location and type of disability.

4.4 Operational Research Issues

This particular study presented many difficulties in determining the best medium in which to provide the questionnaire to respondents for completion. Particular difficulties were envisaged with the size of print, for individuals with impaired vision, reading provisions for those who were blind and responding for those who suffered from impaired dexterity. Therefore after consulting with a number of disability organisations such as RADAR, MIND and ReHab, the questionnaire was developed and formatted in such a way as to be easy to comprehend and as free as possible from health and safety jargon. This was not possible in all instances but in nearly all cases it was kept to a minimum. The questionnaire consisted of six pages which was reduced from eleven as it was felt to be too long by consultees who were part of the target population. The questionnaire was produced in black and white text with large print, brail and a small number were put on tape. Attached
to all questionnaires was a covering letter requesting assistance, informing participants of total confidentiality and a description of who had provided their details and what the information would be used for. A further paragraph included information should the respondent wish the questionnaire to be completed with a researcher.

Evidence was provided as part of the consultation process and the group discussion phase that concluded a considerable proportion of economically active people with sensory impairments do in fact have regular access to support for reading mail etc and could, if so inclined be used to read and interpret the contents of the questionnaire. The questionnaire is included at Appendix C in small font format.

4.4.1 Sample Frame

From the literature review it was determined that the estimated population of economically active disabled employees within UK was 1.2 millions. Within the engineering and retail sector there were estimated to be 260,000 and 235,000 employees respectively. However within the two Standard Industrial Classifications of the study, there were estimated population figures of 14,000 and 11,000 respectively. These are distributed as 58 per cent male and 42 per cent female with a range of between 5 and 31 per cent difference between class of employment groups. To achieve the correct profile of sampling units within a 95% confidence interval the following recommended (Pearson & Turton, 1993) calculation was made:

\[ n = \frac{1.96^2pq}{D^2} \]

Where 'n' equals number of sampling units, \( p \) is the proportion of the population containing the attribute, where \( q \) is equal to \( (100-p) \) and \( D \) is the level of accuracy required. In order to reduce type i and type ii errors this resulted in a minimum sample size of 553 females and 289 males. As such it was concluded to compensate for low response rates that 2500 questionnaires would be forwarded to a stratified sample. To
account for the difference in the population of gender, sector and work activity a disproportionate stratified sample was used.

The population of disabled individuals initially included those individuals who classified themselves as having the following disabilities:

<table>
<thead>
<tr>
<th>Handicaps</th>
<th>Handicap components</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Locomotor</td>
<td>impaired mobility in environment</td>
</tr>
<tr>
<td></td>
<td>impaired postural mobility</td>
</tr>
<tr>
<td></td>
<td>impaired manual dexterity</td>
</tr>
<tr>
<td></td>
<td>reduced exercise tolerance</td>
</tr>
<tr>
<td>2. Visual</td>
<td>total loss of sight</td>
</tr>
<tr>
<td></td>
<td>impaired visual acuity (uncorrectable)</td>
</tr>
<tr>
<td></td>
<td>impaired visual field</td>
</tr>
<tr>
<td></td>
<td>perceptual defect</td>
</tr>
<tr>
<td>3. Communication</td>
<td>impaired hearing</td>
</tr>
<tr>
<td></td>
<td>impaired talking</td>
</tr>
<tr>
<td></td>
<td>impaired reading</td>
</tr>
<tr>
<td></td>
<td>impaired writing</td>
</tr>
<tr>
<td>4. Invisible</td>
<td>metabolic disorders on permanent therapy (e.g. diabetes, cystic fibrosis)</td>
</tr>
<tr>
<td></td>
<td>epilepsy and other unpredictable losses of consciousness</td>
</tr>
<tr>
<td></td>
<td>intermittent prostration (e.g. vertigo, migraine, asthma)</td>
</tr>
<tr>
<td>others which were purposely rejected from the study included:</td>
<td></td>
</tr>
<tr>
<td>Visceral</td>
<td>disorders of the ingestion</td>
</tr>
<tr>
<td></td>
<td>disorders of excretion</td>
</tr>
<tr>
<td></td>
<td>artificial openings</td>
</tr>
<tr>
<td>Intellectual</td>
<td>mental retardation (congenital)</td>
</tr>
<tr>
<td></td>
<td>mental retardation (acquired)</td>
</tr>
<tr>
<td></td>
<td>loss of learned skills</td>
</tr>
<tr>
<td></td>
<td>impaired learning ability</td>
</tr>
<tr>
<td></td>
<td>impaired memory</td>
</tr>
<tr>
<td></td>
<td>impaired orientation in space or time</td>
</tr>
<tr>
<td></td>
<td>impaired consciousness</td>
</tr>
<tr>
<td>Emotional</td>
<td>psychoses</td>
</tr>
<tr>
<td></td>
<td>neuroses</td>
</tr>
<tr>
<td></td>
<td>behavioural disorders</td>
</tr>
<tr>
<td></td>
<td>drug disorders</td>
</tr>
<tr>
<td></td>
<td>antisocial disorders</td>
</tr>
<tr>
<td>Senescence</td>
<td>slowing of physical or mental function</td>
</tr>
<tr>
<td>(ageing)</td>
<td>reduced recuperative powers</td>
</tr>
</tbody>
</table>

4.4.2 Method of data Analysis

Since data obtained in the survey questionnaire was a mixture of categorical, ordinal and interval, both parametric and non-parametric statistical tests were used. In describing the
demographic characteristics of the population and the sample, frequency distribution and percentages were used. In comparing the subgroups Chi-square test was used. The Chi-square test assesses the degree of correspondence between observed and expected observations in each category and allows the probability of the observed frequencies to be tested.

Where assumptions of homogeneity of variance allowed, to test the difference between the means of the summed scores, the parametric one way ANOVA was used. Where there were breaches of the parametric criteria, the rank ordering Wilcoxon-Mann-Whitney test for two independent samples and the Kruskal-Wallis one-way analysis of variance for K independent subgroups were used. The Wilcoxon-Mann-Whitney test may be used to test whether two groups have been drawn from the same population and is reported to be one of the most powerful of the non-parametric tests (Siegal, 1988). The Kruskal-Wallis one way analysis of variance by ranks is an extremely useful test for deciding whether K independent samples are from different populations. That is they facilitate the testing of whether differences among the sample signify genuine population differences or whether they merely represent the kind of variation that are expected among random samples from the same position. The Kruskal-Wallis technique tests the null hypothesis that the K samples come from the same population or from an identical population with the same median. To test the significance of correspondence between multivariate contingency tables a Log-linear model was used using $\chi^2$ Likelihood ratio as a goodness of fit test statistic. All data was subjected to exploratory data analysis (EDA) and tests of distribution prior to analysis.

### 4.4.3 Limitations of the research

The research has three limitations. Firstly, the validity of the measuring instrument was not tested as rigorously as would have been ideal. Tests of internal validity and consistency have demonstrated a reasonable level of acceptance, however it was not possible to measure the correlation coefficients with an established measure.
Notwithstanding this limitation all efforts were made to ensure the measuring instrument was as valid as possible. Secondly a control group was not used. As an alternative, the study sample frame was divided into sub-groupings and findings between sub-groupings compared for reliability against marginal values.

Finally the response rate to the questionnaire is relatively low at 47 per cent and as such this has been accounted for in the discussion of the results. This has been a problem for similar researchers in the field of disability and is one which is a field of study all on its own.

4.5 Results

4.5.1 Questionnaire Response Rate

Of the 2500 questionnaires forwarded to individual sampling units and following the protocol set out in the methodology section, 1183 questionnaires were returned, representing a response rate of 47.3 per cent. Of these, a small number, 48 were deemed to have been completed in a manner not appropriate for further consideration, 25 indicated that they considered themselves to be outside the study boundaries and 23 questionnaires had been defaced to the extent as to be not usable. Overall 1135 completed questionnaires were included for further analysis. After initial EDA and data screening the first area to be analysed was the sample respondents' demographic parameter profiles. Table 4.2 illustrates the frequency rate of respondents by categorised self reported disability. The categories in Table 4.3 were transformed to give a two dimension pattern of disability, namely physical and sensory. Mental disability and impairment were not included as part of the survey strategy as it was outside the limitations of the study.

4.5.2 Disability

The following findings are based on information supplied by the respondents. As described in table 4.2 of the respondents 69 per cent described themselves as being
physically impaired and 31 per cent as sensory impaired.

Table 4.2 Respondents by category of disability/impairment

<table>
<thead>
<tr>
<th>Category</th>
<th>Observed</th>
<th>Expected</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physically impaired</td>
<td>785</td>
<td>567.50</td>
<td>217.50</td>
</tr>
<tr>
<td>Sensory impaired</td>
<td>350</td>
<td>567.50</td>
<td>-217.50</td>
</tr>
<tr>
<td>Total</td>
<td>1135</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$x^2=166.7181, 2$ D.F., $P<0.05$

Further exploration of the data revealed respondents encompassed the following breakdown of disabling conditions:

Table 4.3 Respondents by specific type of disability/impairment

<table>
<thead>
<tr>
<th>Impairments</th>
<th>%</th>
<th>components</th>
<th>response rate</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Locomotor (56.9)</td>
<td></td>
<td>impaired mobility in environment</td>
<td>292</td>
<td>25.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impaired postural mobility</td>
<td>87</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impaired manual dexterity</td>
<td>255</td>
<td>22.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>reduced exercise tolerance</td>
<td>12</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>2. Visual (13.6)</td>
<td></td>
<td>Total loss of sight</td>
<td>21</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impaired visual acuity (uncorrectable)</td>
<td>49</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impaired visual field</td>
<td>48</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>perceptual defect</td>
<td>36</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>3. Communication (14.3)</td>
<td></td>
<td>impaired hearing</td>
<td>104</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impaired talking</td>
<td>23</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impaired reading</td>
<td>11</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impaired writing</td>
<td>24</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>4. Invisible (15.2)</td>
<td></td>
<td>metabolic disorders on permanent therapy (e.g. diabetes,)</td>
<td>86</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>cystic fibrosis epilepsy and other unpredictable losses of consciousness intermittent prostration (e.g. vertigo, migraine, asthma)</td>
<td>75</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>

4.5.3 Gender

Respondents' gender by category consisted of 39 per cent male and 61 per cent female (3.1 per cent of respondents failed to identify their gender). These figures were further analysed using contingency tables to elicit data on the breakdown of gender by type of disability. When gender is cross tabulated with type of disability (see table 4.4) a fairly
equal response was received from sensory disabled individuals 166:184 with females being the higher proportion. However, on examining the response rate for physically disabled employees it was nearly twice as high for females as it was for males.

Table 4.4 Respondents by gender/disability

<table>
<thead>
<tr>
<th></th>
<th>Physical</th>
<th>Sensory</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>274</td>
<td>166</td>
<td>440</td>
<td>38.8</td>
</tr>
<tr>
<td>Expected</td>
<td>304.3</td>
<td>135.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>511</td>
<td>184</td>
<td>695</td>
<td>61.2</td>
</tr>
<tr>
<td>Expected</td>
<td>480.7</td>
<td>214.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Column 785 350 1135
Total 69.2% 30.8% 100.0

\[ \chi^2 = 308.55810, 2 \text{ D.F., } P < 0.05 \]

4.5.4 Age distribution

The questionnaire requested respondents to indicate their age in broad categories. The following table (4.5) illustrates the distribution of age within the responding groups.

Table 4.5 Respondents by age distribution

<table>
<thead>
<tr>
<th>Age (Grouped)</th>
<th>Observed</th>
<th>Expected</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-20</td>
<td>30</td>
<td>141.88</td>
<td>-111.88</td>
</tr>
<tr>
<td>21-25</td>
<td>31</td>
<td>141.88</td>
<td>-110.88</td>
</tr>
<tr>
<td>26-30</td>
<td>174</td>
<td>141.88</td>
<td>32.13</td>
</tr>
<tr>
<td>31-35</td>
<td>253</td>
<td>141.88</td>
<td>111.13</td>
</tr>
<tr>
<td>36-40</td>
<td>249</td>
<td>141.88</td>
<td>107.13</td>
</tr>
<tr>
<td>41-45</td>
<td>181</td>
<td>141.88</td>
<td>39.13</td>
</tr>
<tr>
<td>46-50</td>
<td>148</td>
<td>141.88</td>
<td>6.13</td>
</tr>
<tr>
<td>&gt;51</td>
<td>69</td>
<td>141.88</td>
<td>-72.88</td>
</tr>
</tbody>
</table>

Total 1135

\[ \chi^2 = 398.5542, 7 \text{ D.F., } P < 0.05 \]

4.5.5. Nature of employment

Respondents were asked to describe, as best they could, the sector they were employed
within. The nature of the employment refers to the individual's primary function within the organisation. Fifty one per cent classified themselves as working within the retail sector and 48.1 per cent in the engineering sector (Chi-Square 4.9068, D.F., 1 P < 0.5 (n= 1135). Furthermore respondents were requested to describe the type of work they carried out. This was categorised into manual activities, outdoor activities, office activities and management and supervisory activities. Table 4.6 illustrates responses made:

<table>
<thead>
<tr>
<th>Category</th>
<th>Observed</th>
<th>Expected</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
<td>1.00</td>
<td>227.00</td>
<td>228.00</td>
</tr>
<tr>
<td>Office work</td>
<td>2.00</td>
<td>227.00</td>
<td>237.00</td>
</tr>
<tr>
<td>Outdoor work</td>
<td>3.00</td>
<td>227.00</td>
<td>-207.00</td>
</tr>
<tr>
<td>Management</td>
<td>4.00</td>
<td>227.00</td>
<td>-187.00</td>
</tr>
<tr>
<td>Supervisory</td>
<td>5.00</td>
<td>227.00</td>
<td>-71.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1135</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 841.4625, \text{ D.F., } P < 0.05 \]

In using contingency tables it was also possible to establish a profile of work activities correlated with respondent's gender. As illustrated by table 4.7, of female respondents there was an equal split between the two most popular forms of employment - manual and office work, suggesting that both manual and office work were equally represented in the study sample. For the male respondents there were slight differences with proportionately fewer males employed in manual labour than office work. However, surprisingly, within the sample there were in total more disabled females in employment than males. Population wise this figure is reversed with proportionately more males in employment than females (Sly, 1996). This may reflect differences in the industrial sectors targeted during this study.
The next element of response addressed was the distribution of gender within the two industrial groups. As demonstrated by table 4.8 males working within the engineering sector were under represented within the study.

In terms of representation this was controlled for in the results and accounted for in the discussion.

4.5.6. Length of employment

Questions were also posed to respondents on the length of time in employment and the time spent with their present employer. For the question on length of time in employment the responses ranged from a minimum of 1 year to a maximum of 32 years with a mean value of 8.4 years (standard error 0.123 and variance 17.23). Of these 22 per cent were
found to have worked less than 5 years, 54 per cent were found to have worked between 5 to 10 years, 22 per cent between 10 to 20 years and 2 per cent had worked for over 20 years. The average time spent in employment by the sample (eight years) is consistent with previous research on the topic (for example Prescott-Clark, 1990). See figure 4.1.

For the 'length of time with current employer. Respondents ranged from less than 1 year through to a maximum of 21 years with a mean value of 5.4 years. Of these 46 per cent were found to have worked for their present employer for less than 5 years, 44 per cent between 5 and 10 years, 9 per cent between 10 and 20 years and 1 per cent over 20 years. See figure 4.2.

4.5.7 Level of educational attainment

Respondents were asked to identify levels of qualifications held. Of respondents who answered this question 12 per cent were found to have attained a degree level of education - however they were not fully utilising the education - 41 per cent were found to be non-graduates while the remainder were untrained academically. All had however been provided with some training for their job or task.
4.5.8 Regional distribution of respondents

Respondents were requested to identify the geographical area they worked in (See table 4.9). The results would suggest significant difference between the distribution of disabled individuals in the two employment sectors. The highest response was attained in the Midlands closely followed by the South East of England. In the North East of England there was also a significant response to the questionnaire. The North West, Wales and Scotland were not so well represented. Nationally across 'all age groups' the South East has the largest population of disabled employees (Sly, 1996) followed by the Midlands. The distribution of the respondents, it is suspected, reflected the industrial sectors represented within the study.

<table>
<thead>
<tr>
<th>Geographical Area</th>
<th>Observed</th>
<th>Expected</th>
<th>Residual</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>North West England</td>
<td>91</td>
<td>162.14</td>
<td>-71.14</td>
<td>8.0</td>
</tr>
<tr>
<td>North East England</td>
<td>177</td>
<td>162.14</td>
<td>14.86</td>
<td>16.0</td>
</tr>
<tr>
<td>Midlands</td>
<td>462</td>
<td>162.14</td>
<td>299.86</td>
<td>41.0</td>
</tr>
<tr>
<td>SW England</td>
<td>25</td>
<td>162.14</td>
<td>-137.14</td>
<td>2.2</td>
</tr>
<tr>
<td>SE England</td>
<td>345</td>
<td>162.14</td>
<td>182.86</td>
<td>30.4</td>
</tr>
<tr>
<td>Wales</td>
<td>5</td>
<td>162.14</td>
<td>-157.14</td>
<td>0.4</td>
</tr>
<tr>
<td>Scotland</td>
<td>30</td>
<td>162.14</td>
<td>-132.14</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1135</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 1169.3198, \ 6 \ DF, P = <0.5 \]

Although the sampling frame was small compared to the total population statistic, 1135, it was felt to be representative of the target group within the study population. Non-responses were analysed to determine any emerging pattern where it was found that, apart from males in the manufacturing sector, most just were not inclined to fill in a questionnaire or politically did not wish to. A limited number indicated that they could not complete the questionnaire due to their disability. Although no significant pattern was concluded it is felt that the response rate influences, slightly, the results and as such is accounted for in the discussion of the results.
The next phase of this chapter analyses the critical aspects of the software and hardware dimension of safety.

4.5.9 Problems associated with the disabled employee

Questions focused upon the problems that disabled employees encounter and the emerging domains that were ranked high in terms of individual importance. These were categorised in to software and hardware domains in the context of organisational SMS. The results from chapter three suggest in broad terms a differential exists between certain key elements of a management systems which are perceived relatively more important than others by the target population. To measure these elements it was concluded necessary to identify individual statements and map these onto a Likert type scale. The Likert scale was constructed to elicit perceptions of individual importance within the target population and allowed respondents to answer a range of questions on an ordinal scale ranging from 'Not important, a little important, of some importance, much important and very much important'. Each construct had been developed from emerging themes from the group discussion and individual interviews and related to statutory duties placed upon employers under the HSW Act.

The results of the question matrix can be seen in Table 4.10 which illustrates the general profile of respondents to the questions. As illustrated in table 4.10 respondents rated questions on the 'provision of specific information on health and safety' (mean value= 4.614) as having the highest priority in terms of individual importance. This was closely followed by 'access to safety meetings and consultation with employers' (mean value=4.604) and 'training of other employees on the safety issues relevant to disabled employees' (mean value= 4.542); both being deemed as important constructs to the target population. Following these, factors such as the 'attitudes towards disabled employees safety and health' (mean value= 4.528) and 'access to WC facilities' (mean

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2 These scores although developed through ordinal data structures demonstrated reasonable gaussian curves and standard distributions. They were checked by subjecting median values to non-parametric tests.
### Chapter Four

#### Table 4.10 Importance vs Commitment

<table>
<thead>
<tr>
<th>Question set</th>
<th>Importance</th>
<th>Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Awareness training for other staff</td>
<td>4.542</td>
<td>0.64</td>
</tr>
<tr>
<td>Attitudes of employees to the disabled</td>
<td>4.528</td>
<td>0.635</td>
</tr>
<tr>
<td>Provision of specific safety information</td>
<td>4.614</td>
<td>0.498</td>
</tr>
<tr>
<td>Access to safety meetings (committee)</td>
<td>4.604</td>
<td>0.498</td>
</tr>
<tr>
<td>Suitability of workplace layout</td>
<td>4.23</td>
<td>0.801</td>
</tr>
<tr>
<td>Risk assessment at the Individual Job/task level</td>
<td>3.924</td>
<td>0.808</td>
</tr>
<tr>
<td>Suitability of floor surfaces</td>
<td>3.987</td>
<td>0.959</td>
</tr>
<tr>
<td>Workstation design</td>
<td>4.398</td>
<td>0.700</td>
</tr>
<tr>
<td>Rehabilitation facilities</td>
<td>3.802</td>
<td>1.153</td>
</tr>
<tr>
<td>Workplace Counselling facilities</td>
<td>3.831</td>
<td>1.108</td>
</tr>
<tr>
<td>Provision of suitable WC facilities</td>
<td>4.457</td>
<td>0.843</td>
</tr>
<tr>
<td>Health Surveillance</td>
<td>3.698</td>
<td>1.066</td>
</tr>
<tr>
<td>Specialist equipment</td>
<td>3.546</td>
<td>1.152</td>
</tr>
<tr>
<td>Means of escape in case of fire</td>
<td>3.846</td>
<td>1.022</td>
</tr>
<tr>
<td>Pre-Emp. Screening</td>
<td>3.150</td>
<td>1.556</td>
</tr>
<tr>
<td>Access to welfare facilities i.e. tea/coffee making</td>
<td>4.229</td>
<td>1.121</td>
</tr>
<tr>
<td>Suitability of Safety signs around the buildings</td>
<td>4.076</td>
<td>.997</td>
</tr>
<tr>
<td>Personal Training</td>
<td>4.006</td>
<td>1.04</td>
</tr>
</tbody>
</table>
value= 4.457) were considered important. In support of the initial findings all but the WC facilities are considered to be the 'software' elements of a safety management system. On the 'hardware' side of the systems model those constructs deemed important included 'workstation design' (mean value=4.398), 'access to welfare provisions' such as tea/coffee making facilities, rest rooms (mean value=4.229), 'suitability of workstation design' (mean value=3.987), 'suitability of safety signs' (mean value=4.076) and 'means of escape in case of fire' (mean value=3.846). Those that scored relatively low included, pre-employment screening, rehabilitation, health surveillance, specialist equipment and workplace counselling. It would appear that each of these involves a degree of individual intrusion which may be a reflection of personal privacy.

Individual cases were transposed and scores summed for both hardware and software elements. These were then ranked and subsequently subjected to the Wilcoxon paired data test for significance. As demonstrated below the results of the Wilcoxon test support the hypothesis that software elements are rated higher by the target group than hardware elements.

<table>
<thead>
<tr>
<th>Mean Rank</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>434.42</td>
<td>346 - Ranks (SW LT HW)</td>
</tr>
<tr>
<td>473.89</td>
<td>571 + Ranks (SW GT HW)</td>
</tr>
<tr>
<td></td>
<td>218 Ties (SW EQ HW)</td>
</tr>
<tr>
<td></td>
<td>1135 Total</td>
</tr>
</tbody>
</table>

\[ Z = -7.4966 \quad 2\text{-Tailed } P = .00005 \]

SW = Software    HW = Hardware

After individual elements had been ranked it was then possible to compare individual importance against institutional commitment.

4.5.10 Individual importance v institutional commitment

At this juncture although it was possible to rank key elements which were considered important to disabled employees with regards to their HSW, in legal compliance terms it was also useful to compare the degree of importance against the perceived degree of
commitment or attention placed upon these key elements by employing organisations. This relative difference between individual importance and institutional commitment being the domain of latent errors (Reason, 1990). Therefore the next question to be answered was 'In terms of individual perception does a difference exist between individual importance and institutional commitment for key constructs regarding HSW compliance for disabled employees'.

4.5.11 Mean level of individual importance / Institutional commitment

Once again the questionnaire requested respondents to rate a Likert type scale on the degree of 'Institutional commitment' they felt the same constructs rated in their workplace. The scale allowed respondents to answer a range of questions on an ordinal scale ranging from 'Not at all, A Little, Quite a Bit, Quite a Lot and Extremely'.

Respondents ranked 'personal training' (mean value 1.907), 'means of escape in cases of emergency' (mean value=1.909) and 'workplace counselling' (mean value=1.971) as the constructs their employers were least committed to providing for. This was followed closely by 'provision of specialist equipment' (mean value 2.090), 'health surveillance' (mean value=2.181), 'workstation design' (mean value=2.215) and 'suitability of floor surfaces' (mean value=2.225) as constructs which employers were particularly less committed to. Equally 'rehabilitation facilities' (mean value=2.401) scored less favourably. Those considered more favourable included 'Pre-employment screening' (mean value=2.635), 'awareness training for other staff' (mean value=2.638), 'provision of specific information' (mean value=2.681), access to safety meetings (mean value=2.771), provisions of a suitable WC facility (mean value=2.804) and 'individual risk assessment' (mean value=2.82). Those which were perceived to be adequately provided for included 'workstation design' (mean value=2.999), 'access to welfare facilities' (mean value=3.457) and 'suitability of safety signs' (mean value=3.533) which scored well in terms of perceived institutional commitment. These results would further suggest in broad terms that once again it is in fact the more soft elements of the legal system requirements that
are perceptually ranked as being less important by employers.

However of equal interest and importance within the context of this study was the differential between the mean scores for level of perceived individual importance and perceived levels of institutional commitment. Those elements displaying a greater differential would, it is suggested, be those elements warranting additional exploration at the institutional or organisational level. Legally it is these constructs that may, in compliance terms, be those considered most important as they may constitute latent errors leading to active errors should an appropriate trigger be present.

In broad terms Figure 4.3/4.4 and Table 4.11 support the assumption that there exist differences between perceived levels of importance the target group place upon specified constructs and perceived levels of institutional commitment in respect of that construct. To test the likelihood of such a difference being due to chance the data was subjected to the two tailed Wilcoxon test. Table 4.12 represents the results from the comparison test for each of the constructs. As demonstrated those with the greatest mean difference included 'the attitudes of employers towards disabled employees safety', closely followed by 'means of escape in case of fire' and awareness training for other staff. In terms of statutory duties placed upon employers each of these elements can be linked to a specific section or regulation contained within the HSW Act or its relevant statutory provisions. In particular these are the Management of Health and Safety at Work Regulations 1992 (DOEMP, 1992a) and the Health and Safety (Workplace) Regulations 1992 (DOEMP, 1992b).
Figure 4.3 Respondents perceived levels of individual importance for certain key constructs
Chapter Four

Figure 4.4 Mean difference between individual importance and institutional commitment.

Legend Table

1. Awareness training for other staff
2. Attitudes of employees to the disabled
3. Provision of specific safety information
4. Access to safety meetings (committee)
5. Suitability of workplace layout
6. Risk assessment at the Individual Job/task level
7. Suitability of floor surfaces
8. Workstation layout
9. Rehabilitation facilities
10. Workplace Counselling facilities
11. Suitable WC facilities
12. Health Surveillance
13. Specialist equipment
14. Means of escape in case of fire
15. Pre-Emp. Screening
## Table 4.11 Comparative test of Difference

<table>
<thead>
<tr>
<th>Element</th>
<th>Ranks</th>
<th>Mean Rank</th>
<th>n</th>
<th>Rank</th>
<th>Function difference</th>
<th>Z</th>
<th>2Tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness training for other staff</td>
<td>-ve</td>
<td>530.5</td>
<td>1110</td>
<td>0</td>
<td>(Q6.1B LT Q6.1)</td>
<td>-28.2024</td>
<td>&lt;.00005</td>
</tr>
<tr>
<td></td>
<td>+ve</td>
<td>0</td>
<td>1060</td>
<td></td>
<td>(Q6.1B GT Q6.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ties</td>
<td>50</td>
<td></td>
<td></td>
<td>(Q6.1B EQ Q6.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude of employees to the disabled</td>
<td>-ve</td>
<td>540.50</td>
<td>1110</td>
<td>1060</td>
<td>(Q6.2B LT Q6.2)</td>
<td>-27.7394</td>
<td>&lt;.00005</td>
</tr>
<tr>
<td></td>
<td>+ve</td>
<td>1063.0</td>
<td></td>
<td>5</td>
<td>(Q6.2B GT Q6.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ties</td>
<td>45</td>
<td></td>
<td></td>
<td>(Q6.2B EQ Q6.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of specific safety information</td>
<td>-ve</td>
<td>489.50</td>
<td>1110</td>
<td>978</td>
<td>(Q6.3B LT Q6.3)</td>
<td>-27.0901</td>
<td>&lt;.00005</td>
</tr>
<tr>
<td></td>
<td>+ve</td>
<td>0</td>
<td></td>
<td>0</td>
<td>(Q6.3B GT Q6.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ties</td>
<td>132</td>
<td></td>
<td></td>
<td>(Q6.3B EQ Q6.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to safety meetings (committee)</td>
<td>-ve</td>
<td>534.54</td>
<td>1110</td>
<td>1060</td>
<td>(Q6.4B LT Q6.4)</td>
<td>-28.1660</td>
<td>&lt;.00005</td>
</tr>
<tr>
<td></td>
<td>+ve</td>
<td>206.5</td>
<td></td>
<td>5</td>
<td>(Q6.4B GT Q6.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ties</td>
<td>45</td>
<td></td>
<td></td>
<td>(Q6.4B EQ Q6.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suitability of workplace layout</td>
<td>-ve</td>
<td>489.94</td>
<td>1110</td>
<td>963</td>
<td>(Q6.5B LT Q6.5)</td>
<td>-26.7882</td>
<td>&lt;.00005</td>
</tr>
<tr>
<td></td>
<td>+ve</td>
<td>204.00</td>
<td></td>
<td>10</td>
<td>(Q6.5B GT Q6.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ties</td>
<td>137</td>
<td></td>
<td></td>
<td>(Q6.5B EQ Q6.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk assessment at the individual Job/task level</td>
<td>-ve</td>
<td>520.46</td>
<td>1110</td>
<td>997</td>
<td>(Q6.6B LT Q6.6)</td>
<td>-27.0964</td>
<td>&lt;.00005</td>
</tr>
<tr>
<td></td>
<td>+ve</td>
<td>218.5</td>
<td></td>
<td>27</td>
<td>(Q6.6B GT Q6.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ties</td>
<td>86</td>
<td></td>
<td></td>
<td>(Q6.6 EQ Q6.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----</td>
<td>------</td>
<td>------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Suitability of floor surfaces</td>
<td>470.72</td>
<td>1105</td>
<td>881</td>
<td>(Q6.7B LT Q6.7)</td>
<td>(Q6.7B GT Q6.7)</td>
<td>(Q6.7B EQ Q6.7)</td>
<td>-25.5580</td>
</tr>
<tr>
<td>Workstation design</td>
<td>505.94</td>
<td>1110</td>
<td>1002</td>
<td>(Q6.8B LT Q6.8)</td>
<td>(Q6.8B GT Q6.8)</td>
<td>(Q6.8B EQ Q6.8)</td>
<td>-27.4266</td>
</tr>
<tr>
<td>Rehabilitation facilities</td>
<td>431.22</td>
<td>1110</td>
<td>749</td>
<td>(Q6.9B LT Q6.9)</td>
<td>(Q6.9B GT Q6.9)</td>
<td>(Q6.9B EQ Q6.9)</td>
<td>-21.8898</td>
</tr>
<tr>
<td>Workplace Counselling facilities</td>
<td>529.44</td>
<td>1110</td>
<td>983</td>
<td>(Q6.10B LT Q6.10)</td>
<td>(Q6.10B GT Q6.10)</td>
<td>(Q6.10B EQ Q6.10)</td>
<td>-26.7909</td>
</tr>
<tr>
<td>Provision of suitable WC facilities</td>
<td>303.00</td>
<td>951</td>
<td>605</td>
<td>(Q6.11B LT Q6.11)</td>
<td>(Q6.11B GT Q6.11)</td>
<td>(Q6.11B EQ Q6.11)</td>
<td>-21.3102</td>
</tr>
</tbody>
</table>

4-149
<table>
<thead>
<tr>
<th></th>
<th>-ve</th>
<th>+ve</th>
<th>ties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means of escape in case of fire</td>
<td>433</td>
<td>951</td>
<td>86</td>
</tr>
<tr>
<td>Pre-Emp. Screening</td>
<td>328.54</td>
<td>431</td>
<td>86</td>
</tr>
<tr>
<td>Access to welfare facilities e tea/coffee etc.</td>
<td>309.11</td>
<td>605</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>(Q.16B LT Q.16)</td>
<td>(Q.16B GT Q.16)</td>
<td>(Q.16B EQ Q.16)</td>
</tr>
<tr>
<td>Suitability of safety signs</td>
<td>390</td>
<td>779</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>(Q.17B LT Q.17)</td>
<td>(Q.17B GT Q.17)</td>
<td>(Q.17B EQ Q.17)</td>
</tr>
<tr>
<td>Personal training</td>
<td>428.06</td>
<td>693</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>(Q.18B GT Q.18)</td>
<td>(Q.18B LT Q.18)</td>
<td>(Q.18B EQ Q.18)</td>
</tr>
</tbody>
</table>
The data set would therefore suggest although there appear to be broad differences between certain constructs, in terms of individual importance and institutional commitment, much of this is absorbed by the constructs which are perceived to be more important than the level of current provisions included (see table 4.11). Therefore those constructs within organisations which are considered to be ranked higher by disabled employees include the following:

<table>
<thead>
<tr>
<th>Construct</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudinal construct</td>
<td>1</td>
</tr>
<tr>
<td>Communication</td>
<td>2</td>
</tr>
<tr>
<td>Means of escape in case of fire</td>
<td>3</td>
</tr>
<tr>
<td>Awareness training for other staff</td>
<td>4</td>
</tr>
<tr>
<td>Workplace counselling facilities</td>
<td>5</td>
</tr>
<tr>
<td>Provision of sanitary facilities</td>
<td>6</td>
</tr>
</tbody>
</table>

It is therefore concluded that these elements should be considered critical success factors (CSF) within the context of an organisation's SMS who employ the disabled and possibly set these as key performance indicators (KPI's) for the purpose of monitoring and review.

4.5.12 The dimension of a cognitive adequacy condition

It has been possible to determine those constructs which are ranked highest in terms of importance to individual employees who are disabled and it has been possible to identify a difference between those constructs and institutional commitment. This does not however allow an indication of the cognitive adequacy (CA) present or perceived by disabled employees within their organisations. Cognitive adequacy is a measure of:
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- responsibility/influence
- communication of information
- problem resolution

In terms of this study it was concluded important to establish in broad terms any significant difference between industrial sectors with regard to HSW CA. Therefore the next dimension to explore was that of perceived institutional cognitive adequacy by exploring the following question, 'Are disabled employees in the retail sector - within the study group - more likely to perceive their organisation's exhibit lower levels of cognitive adequacy than those within engineering organisations.

Results from the group discussions and individual interviews suggest there was a relationship between perceived institutional cognitive adequacy and the sector in which individuals were employed. To determine if this was the case a conditional model was constructed using single item questions which were then summated to form a composite score for each respondent. The model related to the constructs of responsibility, information and problem resolution relevant with in the context of HSW.

4.5.13 Individual test items on the CA condition

The battery of questions were primarily a composite measure of an individual's perception of institutional cognitive adequacy based on responses to question sets. Respondents were asked to rate each question on a Likert-type scale ranging from 'strongly disagree' to 'strongly agree'. Initially however there was much value in exploring responses to some of the key individual test items. Those criterion measures rated highly by respondents included 92 per cent of respondents in disagreement with the statement on 'institutional responsibility' of which 31 per cent were in strong disagreement. Institutional conduct by key players was also an individual test criterion which rated highly. Seventy seven per cent of respondents suggested disagreement with the statement on the appropriateness of key player's conduct in safety situations where disabled
employees were present. Of these 31 per cent were 'strongly' against the statement on 'conduct' and nil respondents agreed with the statement. Similar results were also produced in response to the question on the adequacy of the provision of information regarding HSW issues relevant to disabled employees. In total 38.1 per cent strongly disagreed and 46.2 per cent disagreed with the statement 'provision of HSW information was adequate'. Fifteen per cent remained undecided.

In response to the questions on problem resolution there was a more even spread of responses, with 7.6 per cent in agreement, 46.2 per cent in disagreement and 22.9 per cent in strong disagreement. Twenty three per cent were undecided.

Respondents were also requested to rate a question on positive communication within the organisation. Thirty per cent of respondents had no clear thought, 30.4 per cent were in disagreement and 38.6 per cent were in agreement. In terms of communication with other employees 7.6 per cent strongly disagreed, 15.2 per cent disagreed, 38.1 per cent were neutral and 39.6 per cent were in agreement with the statement. Respondents had no such problems when requested to rate a question on 'individual blame' within organisations, 92 per cent disagreed with the statement, 'My company does not lay blame at the individual level for accidents'. The same pattern of responses emerged to the statement "Problems related to my HSW are always resolved".

4.5.14 Summative scores for cognitive adequacy

Within the question matrix individual scores were summed to form a composite score. The question matrix was designed to produce high scores for increasing agreement with the questions which in turn suggested a positive perception of institutional cognitive adequacy (CA). In other terms high scores related to the degree of fit between CA and the individual's perception of adequacy. The results show that the mean scores for the respondents was 38.46 which lay within the range of 30 representing a strong disagreement and 75 representing strong agreement (95% CI 37.9, 39.02). Table 4.12
illuminates the strength of agreement and disagreement felt by respondents within the study group.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Mean</th>
<th>S.D +/-</th>
<th>Variance</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding of disability</td>
<td>2.762</td>
<td>.579</td>
<td>.325</td>
<td>-1.056</td>
</tr>
<tr>
<td>Allocation of responsibility</td>
<td>2.229</td>
<td>.798</td>
<td>.637</td>
<td>-1.056</td>
</tr>
<tr>
<td>Other employee awareness trg.</td>
<td>2.395</td>
<td>.727</td>
<td>.518</td>
<td>-0.478</td>
</tr>
<tr>
<td>Specific responsibility</td>
<td>2.695</td>
<td>.609</td>
<td>.826</td>
<td>-0.478</td>
</tr>
<tr>
<td>Rehabilitation facilities</td>
<td>2.381</td>
<td>.743</td>
<td>.552</td>
<td>-0.441</td>
</tr>
<tr>
<td>Provision of information</td>
<td>2.381</td>
<td>.927</td>
<td>.839</td>
<td>0</td>
</tr>
<tr>
<td>Resources for problem resolution</td>
<td>2.617</td>
<td>.738</td>
<td>.545</td>
<td>-0.768</td>
</tr>
<tr>
<td>Communication with peer group</td>
<td>2.767</td>
<td>1.125</td>
<td>1.576</td>
<td>-0.765</td>
</tr>
<tr>
<td>Communication with supervisors</td>
<td>2.552</td>
<td>1.341</td>
<td>1.798</td>
<td>-0.282</td>
</tr>
<tr>
<td>Communication with Management</td>
<td>2.366</td>
<td>.934</td>
<td>.872</td>
<td>-0.302</td>
</tr>
<tr>
<td>Trust employees</td>
<td>2.928</td>
<td>1.206</td>
<td>1.454</td>
<td>-1.82</td>
</tr>
<tr>
<td>Trust Management</td>
<td>2.314</td>
<td>1.135</td>
<td>1.288</td>
<td>-0.127</td>
</tr>
<tr>
<td>Coping with work</td>
<td>2.457</td>
<td>.847</td>
<td>.718</td>
<td>0.058</td>
</tr>
<tr>
<td>Comfort of individuals</td>
<td>3.009</td>
<td>1.115</td>
<td>1.243</td>
<td>-0.547</td>
</tr>
<tr>
<td>HSW problem resolution</td>
<td>2.252</td>
<td>1.039</td>
<td>1.208</td>
<td>0.108</td>
</tr>
<tr>
<td>Equal terms and conditions</td>
<td>2.601</td>
<td>1.012</td>
<td>1.025</td>
<td>-1.127</td>
</tr>
<tr>
<td>Importance of problem resolution</td>
<td>2.466</td>
<td>.842</td>
<td>.709</td>
<td>-0.624</td>
</tr>
<tr>
<td>Negative attitude towards disability</td>
<td>2.771</td>
<td>.9710</td>
<td>.943</td>
<td>-0.832</td>
</tr>
</tbody>
</table>

4.5.15 Analysis of total independence model

Before directly answering the null hypothesis it was concluded important to further explore the data for intervening relationships between variables that may significantly influence the result. Therefore key variables were controlled for within the data analysis. To do this within the constraints of the study design it was appropriate to transposes ordinal data variables to dichotomous pairs to analyse relationships using contingency tables and log-linear analysis models. Those variables to be examined included:

CA - 'Cognitive Adequacy'
Gen - 'Gender'
Contingency tables were initially used to explore marginal relationships between the dichotomous variables such as gender and the transposed variable cognitive adequacy (CA). Chi square utilises the marginal differences between observed and expected frequency to determine goodness of fit in one dimensional and two dimensional tables,

\[ \chi^2 = \sum \frac{(O-E)^2}{E} \]

with degrees of freedom given by:

\[ df = (R - 1)(C - 1) \]

and E given by:

\[ E_{ij} = Np_{ij} = \frac{(RT_i)(CT_j)}{N} \]

The summative score of the variable CA was transposed to a dichotomous variable 'Low/High' using the 50th percentile value as the break point. The following contingency tables show the resultant figures with \( \chi^2 \) being used as a test of independence or goodness of fit for the model.

The first relationship to explore was that of gender. A two dimensional table was constructed to determine any relationship between gender of respondents and the
Table 4.13 Cognitive Adequacy by Gender

<table>
<thead>
<tr>
<th>CA Index rating</th>
<th>Male</th>
<th>Row %</th>
<th>Female</th>
<th>Row %</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>316</td>
<td>41.0</td>
<td>454</td>
<td>59.0</td>
<td>770</td>
</tr>
<tr>
<td>Estimated</td>
<td>298.5</td>
<td>34.0</td>
<td>241</td>
<td>66.0</td>
<td>365</td>
</tr>
<tr>
<td>High</td>
<td>124</td>
<td>34.0</td>
<td>241</td>
<td>66.0</td>
<td>365</td>
</tr>
<tr>
<td>Estimated</td>
<td>216.4</td>
<td>34.0</td>
<td>241</td>
<td>66.0</td>
<td>365</td>
</tr>
<tr>
<td>Total</td>
<td>440</td>
<td>695</td>
<td>1135</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 5.20875$, 2 DF, $P < 0.05$. (% figures refer to row values)

likelihood of it influencing the response of low or high perceptions. Of respondents males constituted 39 per cent and females 61 per cent. Of these, proportionately and using column percentages, of those who scored their institutional CA condition as high, 66 per cent were female and 34 per cent males. Proportionately however at the individual level 72 per cent of males rated their workplace high as opposed to 65 per cent for females. After controlling for intervening variables overall these results would suggest that there is a perceived differential in the level of CA within the gender categories. Males although less well represented in the study sample appear to perceive higher CA than their female counterparts. Equally as shown by the difference between expected and observed cell frequencies the data does not fit a model of total independence.

It was also important to explore the marginal relationship between the degree of CA and type of disability. For instance do sensory disabled individuals within the study group perceive different degrees of CA because of their impairment. Once again a conditional contingency table was constructed for CA by type of disability. Table 4.14 illustrates the cell frequencies by respondent group.
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Table 4.14 Cognitive Adequacy by type of disability

<table>
<thead>
<tr>
<th>CA Index Score</th>
<th>Physically</th>
<th>Sensory</th>
<th>Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Row %</td>
<td>Row %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>64.9</td>
<td>35.1</td>
<td>770</td>
<td>67.8</td>
</tr>
<tr>
<td>Estimated</td>
<td>270</td>
<td>237.4</td>
<td>532.6</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>78.1</td>
<td>21.9</td>
<td>365</td>
<td>32.2</td>
</tr>
<tr>
<td>Estimated</td>
<td>80</td>
<td>112.6</td>
<td>252.4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>350</td>
<td>1135</td>
<td>785</td>
<td>100</td>
</tr>
</tbody>
</table>

$\chi^2 = 36.19140, 2 \text{ DF}, P < 0.05, (\% \text{ figures refer to row values})$

Using marginal totals and row percentages by individual cell responses 32 per cent rated their institution as demonstrating a 'high' degree of CA condition and 68 per cent rated it 'low'. Of the total who fell within the 'high' group 78 per cent were physically disabled and 22 per cent sensory disabled. Correspondingly of the group who rated their workplace 'low', 65 per cent were physically disabled and 35 per cent were sensory disabled. However using conditional column marginals of the 350 sensory disabled, 77 per cent rated their CA condition as low while of the 785 physically disabled only 65 per cent rated it as such. Once again using the Pearson Chi squared test of significance the data supports a significant difference between groups which could not be accounted for by chance. In fact nearly half as many physically disabled rated their workplace as exhibiting a 'Low' level of 'CA' condition as rated it 'high'. These results would also suggest proportionately that sensory disabled perceive lower levels of CA than those that are physically disabled. This evidence provides support for the data collected during chapter three. Once again the differential between expected and observed cell frequencies would not support the null hypothesis of a total independence model.

It further followed that there may be some relationship between the type of employment and the degree in which individuals rated their organisation's CA condition. Therefore data collected was analysed to determine if they were in fact equiprobable and that there was no relationship between the job an individual performed and perception of CA. The results from table 4.15 would once again suggest that this is not the case.
Table 4.15 Cognitive Adequacy by type of employment

<table>
<thead>
<tr>
<th>Index Score</th>
<th>Manual</th>
<th>Office</th>
<th>Outdoor</th>
<th>Management</th>
<th>Supervisory</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>340</td>
<td>291</td>
<td>12</td>
<td>26</td>
<td>101</td>
<td>770</td>
</tr>
<tr>
<td>Estimated</td>
<td>308.7</td>
<td>314.8</td>
<td>13.6</td>
<td>27.1</td>
<td>105.</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>44.2</td>
<td>37.8</td>
<td>1.6</td>
<td>3.4</td>
<td>13.1</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>115</td>
<td>173</td>
<td>8</td>
<td>14</td>
<td>55</td>
<td>365</td>
</tr>
<tr>
<td>Estimated</td>
<td>146.3</td>
<td>149.2</td>
<td>6.4</td>
<td>12.9</td>
<td>50.2</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>31.5</td>
<td>47.4</td>
<td>2.2</td>
<td>3.8</td>
<td>15.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>455</td>
<td>464</td>
<td>20</td>
<td>40</td>
<td>156</td>
<td></td>
</tr>
</tbody>
</table>

χ² = 16.86890, 1 DF, P < 0.05

Proportionately of the 68 per cent who rated their workplace to have a 'low' CA condition 44 per cent were engaged in manual work, 38 per cent in office work, 16 per cent supervisory and management and 2 per cent in activities which were undertaken outdoors. Of those who rated their workplace CA condition as 'High', 47 per cent were engaged in 'office work', 31 per cent in manual work, 19 per cent supervisory and management and 2 per cent 'out of doors'. These results would suggest that proportionately manual workers rated their workplace lowest, followed by management and supervision, office workers and finally outdoor workers. Overall these results suggest that approximately one third of respondents rated their workplace under the 50th percentile of the survey population's CA condition. These results also support the rejection of a total independence model.

Of particular importance to this study was the influence of industry sector on the degree of perceived CA condition. Therefore Table 4.16 illustrates that of total respondents (n=1135) 68 per cent rated the CA condition within their organisations as 'low' and 32 per cent as high. Using marginal totals of 528 for engineering and 603 for the retail sector, 41 per cent of the engineering sector rated CA as low compared to 59 percent of the retail sector. Of those respondents rating their organisation's CA condition as high
59 per cent were in the engineering sector and 41 per cent in the retail sector. Moreover using marginal totals and column proportions, of those employed within the engineering sector 59.1 per cent rated their organisation low, against 76 per cent of those employed within the service sector. These result would suggest that proportionately over two thirds of respondents rated their organisation's CA conditions as low and of this over half were employed within the service sector. Therefore there is an increased likelihood that a higher degree of the CA condition will be present in the engineering sector when compared with the retail sector.

Table 4.16 Cognitive Adequacy by Employment Sector

<table>
<thead>
<tr>
<th>Index Score</th>
<th>Engineering %</th>
<th>Service %</th>
<th>Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>312</td>
<td>40.7</td>
<td>455</td>
<td>59.3</td>
</tr>
<tr>
<td>Estimated</td>
<td>358.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>216</td>
<td>59.3</td>
<td>148</td>
<td>40.7</td>
</tr>
<tr>
<td>Estimated</td>
<td>169.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>528</td>
<td>46.7</td>
<td>603</td>
<td>53.3</td>
</tr>
</tbody>
</table>

$\chi^2 = 16.86890, 1$ DF, $P < 0.05$

To gain a fuller understanding and to provide additional support individual raw summative scores were tested against the Mann-Whitney - Wilcoxon test to determine if they did in fact come from different populations. The following results were obtained:

Mann-Whitney U - Wilcoxon Rank Sum W Test

<table>
<thead>
<tr>
<th>n</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>1135</td>
<td>55.83172</td>
<td>5.17786</td>
<td>74.00</td>
</tr>
<tr>
<td>SECT</td>
<td>1131</td>
<td>1.53316</td>
<td>0.49912</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Mean Rank | Cases          | SECT = 1.00 | Engineering |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>600.67</td>
<td>528</td>
<td>1.00</td>
<td>Engineering</td>
</tr>
<tr>
<td>535.64</td>
<td>603</td>
<td>2.00</td>
<td>Retail</td>
</tr>
</tbody>
</table>

Corrected for ties

<table>
<thead>
<tr>
<th>U</th>
<th>W</th>
<th>Z</th>
<th>2-Tailed P</th>
</tr>
</thead>
<tbody>
<tr>
<td>140887.5</td>
<td>317152.5</td>
<td>-3.3481</td>
<td>&lt;0.0008</td>
</tr>
</tbody>
</table>
These results would further support the findings of chapter three and therefore the null hypothesis of no difference is rejected at the five per cent level of significance.

4.5.16 Accident reporting

A further indicator which emerged from the findings of chapter three was the existence of a relationship between the number of individuals who had reported an accident - that had occurred at work - and the degree to which they perceived the CA condition to be exhibited within their organisation. Essentially the emerging findings of chapter three suggest that disabled employees who have had an accident are less likely to report it if they are employed within the engineering sector and where that organisation is perceived to demonstrate a low level of cognitive adequacy. Therefore the research question to be answered was, 'Are disabled employed within the engineering sector and organisations who exhibit a low CA condition less likely to report accidents that occur at work'.

Firstly it was considered important to explore the relationship between the CA condition and occurrences of accidents at work. It was postulated that those institutions that demonstrated a low CA condition may also be more likely to have employees who had had accidents while at work. The results from table 4.17 show that using marginal totals of the 1135 respondents 673 had had an accident while at work as a result of their disability. Percentage wise this accounted for 59 per cent of respondents. Particularly at the individual level the results suggest the likelihood of a disabled employee being involved in an unsafe act while engaged in workplace activities is 0.59, which proportionately appears higher than population statistics for non-disabled in both the engineering and retail sector (HSE, 1995; LFS, 1992).
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Table 4.17 Accident occurrence by Sector

<table>
<thead>
<tr>
<th>Index Score</th>
<th>(n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>434</td>
<td>56.4</td>
</tr>
<tr>
<td>Engineering</td>
<td>239</td>
<td>65.5</td>
</tr>
<tr>
<td>Total</td>
<td>673</td>
<td>100</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 8.52537, 1 \text{ DF}, \ p < 0.05 \]

In terms of legal compliance and organisational communication systems it is important that if an individual has an accident while at work that they report it to an appropriate person within the management system and have appropriate mechanisms to filter those that require notification to the relevant enforcing authority. This allows two functions to be carried out. Firstly preventative efforts can be made to control a recurrence and secondly it allows the organisation to comply with its statutory duty under RIDDOR (DOEMP, 1995).

Therefore cell frequencies were compared to determine any relationship between respondents who reported an accident and those who perceived low CA condition within the organisation. Contingency tables were once more used and provide the following evidence (see Table 4.18):

Table 4.18 Cognitive Adequacy by reporting of accidents

<table>
<thead>
<tr>
<th>Reporting</th>
<th>Low</th>
<th>Row%</th>
<th>High</th>
<th>Row%</th>
<th>Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>19</td>
<td>5.1</td>
<td>355</td>
<td>94.9</td>
<td>373</td>
<td>33</td>
</tr>
<tr>
<td>Estimated</td>
<td>253.7</td>
<td>120.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>751</td>
<td>98.7</td>
<td>10</td>
<td>1.3</td>
<td>761</td>
<td>67</td>
</tr>
<tr>
<td>Estimated</td>
<td>516.3</td>
<td>244.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>767</td>
<td>365</td>
<td>1134</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 7.4567, 2 \text{ DF}, \ p < 0.05 \]

Of respondents \( n = 1135 \) only 374 had made or would make an attempt to report it to an appropriate person, equating to a reporting percentage of 33 per cent. In fact, of respondents only 19 who considered their organisation to demonstrate a low CA condition reported or would report accidents that occur at work. Table 4.18 shows that the
questionnaire data would support the postulation that there is a statistical difference between perceived response rates. In fact when conditional odds are explored the $751/19 = 39.53$ for not reporting in the low condition it was found that respondents conditional odds were approximately $39.53:1$ in favour of non-reporting in the low CA condition. Using odds ratios this would suggest an employee who perceives their organisation to be in the low condition is more likely not to report an accident. To add further weight to this argument the data collected was subjected to the Wilcoxon test of statistical significance:

Mann-Whitney U -Wilcoxon Rank Sum W Test

<table>
<thead>
<tr>
<th>Mean Rank</th>
<th>Cases</th>
<th>CA = 1.00 low</th>
</tr>
</thead>
<tbody>
<tr>
<td>741.00</td>
<td>770</td>
<td>CA = 1.00 low</td>
</tr>
<tr>
<td>203.05</td>
<td>365</td>
<td>CA = 2.00 high</td>
</tr>
</tbody>
</table>

Total 1135

Corrected for ties

<table>
<thead>
<tr>
<th>U</th>
<th>W</th>
<th>Z</th>
<th>2-Tailed P</th>
</tr>
</thead>
<tbody>
<tr>
<td>7317.5</td>
<td>74112.5</td>
<td>-31.7209</td>
<td>&lt;.00005</td>
</tr>
</tbody>
</table>

The above results confirm that a difference does exist and that broadly speaking those who ranked the CA as low were more likely not to report an accident at work. This result has implications for organisations who are attempting to manage their safety and comply with their statutory duty under the Act and its relevant statutory provisions. For instance although accident data is not an ideal measure of safety compliance (Nicholls, 1974) it has and does provide organisations with subjective data which allows some form of determination of risk.

4.5.17 Social support

The final construct that emerged from chapter three was the perceived difference in the degree of social support -relevant to HSW- provided by inter sector and intra sector key players. The degree of 'social support' provided by a company was perceived by the
population within the study to be an important aspect of ensuring individual health, safety and welfare. In real terms social support is considered a construct made up of individual trust, individual support and the degree to which individuals communicate. From the results of chapter three it emerged that there was a significant difference between the perceived degree of social support provided by key players in relation to health and safety. Therefore it was concluded necessary to explore the research hypothesis 'that there was no difference in the degree to which disabled individuals perceived social support from different key players'. The ordinal data was explored using contingency tables and tested for significance by non-parametric tests. In the first instance each element was explored separately.

4.5.18 Institutional support

At the institutional level it was concluded that five key players were involved in compliance with HSW legislation. These included company managers, company supervisors and fellow peer group employees at one level, institutional safety officers and trade union safety representatives or representatives of employee safety at another. In exploring the first element - support - the collected data (see Table 4.19) would indicate that management level were rated as being least able to offer support at work regarding health and safety matters. Nearly 76.8 per cent of respondents implied 'no' or 'little support' was provided and only 23.2 per cent implied 'some' support was provided. This was not so strong regarding the supervisory level where 28 per cent regarded their supervisor as providing 'No' support, 31 per cent thought they provided a 'little' support and 41 per cent found that they provided 'some' support.

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Little</th>
<th>Some</th>
<th>Much</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>571</td>
<td>297</td>
<td>262</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Supervision</td>
<td>317</td>
<td>351</td>
<td>462</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Staff</td>
<td>161</td>
<td>122</td>
<td>509</td>
<td>153</td>
<td>183</td>
</tr>
</tbody>
</table>

n= 1130

In relation to peer group membership there was a more even spread of results with only
14.2 per cent providing 'no' support, 10.8 per cent providing 'little' support and 45 per cent providing some support. On a much more positive side 13.5 stated that peer group employees would provide 'much' support and 16.4 providing 'very much' support. These results were equally supported by exploring the mean value of each response category where managers had a mean score of 1.727, supervisors 2.128 and fellow employees 3.068. These differences were tested for statistical significance by using the non-parametric Wilcoxon ranks test and found to be significant at the 5 per cent level.

4.5.19 Degree of communication

The second aspect to be considered was the degree to which individuals thought they could communicate with the key individuals about HSW related matters. Once again management were rated by respondents as being the least likely person they would communicate with, with over 550 or 48.4 per cent of respondents indicating that they would never talk to their manager about health and safety related issues. Twenty three per cent indicated they could communicate a 'little of the time', 22.1 per cent 'some of the time' and just over 6 per cent responded 'much or very much of the time'. As for the supervisory role there was however a much broader expanse of responses suggesting that views were not so polarised as for support. Nevertheless nearly half as many respondents would 'never' communicate on HSW matter with their supervisor as they would their manager. Over thirty per cent of respondent indicated they felt they could communicate a 'little of the time', 35.7 to 'Some of the time', and only less than 12 per cent felt they could communicate 'much' or 'very much of the time' with their supervisor. This was in contrast with the results for peer group communication. Of the 1135 respondents only 83 or 7.3 per cent 'never' discussed health and safety matters with their peer group, while over 10 per cent discussed HSW matters a little of the time, 35.5 per cent responded as feeling able to discuss HSW issues 'some of the time ' and over 46 per cent 'much' or 'very much of the time'.

These result were once again supported by the mean values with company managers
value of 1.893, supervisors 2.441 and employees at 3.430. These were also tested for levels of statistical significance and found to be acceptable at the five per cent level.

Table 4.20 Degree of perceived communication

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Little</th>
<th>Some</th>
<th>Much</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>550</td>
<td>48.4</td>
<td>262</td>
<td>23</td>
<td>251</td>
</tr>
<tr>
<td>Supervision</td>
<td>246</td>
<td>21.7</td>
<td>344</td>
<td>30.5</td>
<td>405</td>
</tr>
<tr>
<td>Staff</td>
<td>83</td>
<td>7.3</td>
<td>124</td>
<td>10.9</td>
<td>403</td>
</tr>
</tbody>
</table>

n=1135

4.5.20 Individual trust

The final element to be explored was individual trust. As table 4.21 shows, when it comes to trusting an individual with details of their personal HSW issues there were mixed perceptions. Once again management were rated lowest in terms of the degree employees felt they could trust the key player to discuss confidential health and safety information with. Notwithstanding this low rating, management nevertheless scored consistently across the cells with a decrease in each of the levels of trust. Respondents generally rated 'Management' as having a low level of individual trust. Over half (54 per cent) of the 1135 respondents indicated that they would 'never' trust their line manager on issues related to individual HSW. Two hundred and fifty one or 22.11 per cent stated they would trust them a 'little', 16 per cent, indicated they had 'some' degree of trust and less than 8 per cent positively responded in that they could trust them 'much' or 'all of the time'. The same could also be said for the supervisors as once again over half 51.1 per cent would not trust their supervisor, 27.4 per cent rated supervisors as being trustworthy a 'little of the time' and 21 per cent rated them as trustworthy 'some of the time'. Nil respondents rated 'much' or 'very much of the time'. In relation to employees less than a third, 28.3 per cent, indicated they could not trust their fellow employees, while 37.8 per cent said they could trust them a little and 384 (33.8 per cent) would trust their peer group with some issues. Once again these were supported by mean scores of 2.055 for
employees, 1.804 for managers and 1.704 for supervisors and testing for significance by using non-parametric tests.

Table 4.21 Perceived individual trust

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>%</th>
<th>Little</th>
<th>%</th>
<th>Some</th>
<th>%</th>
<th>Much</th>
<th>%</th>
<th>Very Much</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>613</td>
<td>54</td>
<td>251</td>
<td>22.1</td>
<td>182</td>
<td>16</td>
<td>58</td>
<td>5.1</td>
<td>31</td>
<td>2.73</td>
</tr>
<tr>
<td>Supervision</td>
<td>580</td>
<td>51.1</td>
<td>311</td>
<td>27.4</td>
<td>244</td>
<td>21.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Staff</td>
<td>322</td>
<td>28.3</td>
<td>429</td>
<td>37.8</td>
<td>384</td>
<td>33.8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

n=1135

It was also important to explore the relationship between the level of social support provided by key individuals directly responsible for providing information and support on HSW matters. These included the employees' 'representative of safety' or 'safety representative' and the company safety officer or manager. As shown by table 4.21 it would appear proportionately, there is only a small magnitude of difference between the level of support provided by those whose role it is to provide support on HSW issues.

Table 4.22 Perceived individual support

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>%</th>
<th>Little</th>
<th>%</th>
<th>Some</th>
<th>%</th>
<th>Much</th>
<th>%</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Union</td>
<td>129</td>
<td>11.4</td>
<td>304</td>
<td>26.9</td>
<td>311</td>
<td>27.5</td>
<td>386</td>
<td>34.2</td>
<td>0</td>
</tr>
<tr>
<td>Safety Officer</td>
<td>346</td>
<td>30.6</td>
<td>156</td>
<td>13.8</td>
<td>393</td>
<td>34.8</td>
<td>235</td>
<td>20.8</td>
<td>0</td>
</tr>
</tbody>
</table>

n=1130

As demonstrated by table 4.22 nearly 35 per cent of total respondents felt they received 'much' social support from their trade union representative and nil sampling units responded to the 'very much' category. Equally interesting was the increase in the number (346 or 30.6 per cent) of sampling units who perceived they obtained 'no' social support from their 'safety Officer'. Overall the mean score for the level of social support for trade union representative was 2.844 and for the safety officer 2.458. The results were subjected

3 As required by the Health and Safety Consultation (employee) Regulations 1996

4 As required by the Safety Representatives and Safety Committee Regulations 1977

5 As required by the Management of Health and Safety at Work Regulations 1992

4-166
These results would support the hypothesis that trade union representatives are perceived to provide more support than safety officers by the target group. The next question asked the degree to which individuals felt they could communicate with key players. The responses made are illustrated in table 4.23. Nil respondents felt they could communicate 'very much' with either the trade union representative or their safety officer. Overall responses were slightly better for trade union safety representatives with nearly 35 per cent indicating 'much', 28 per cent indicating 'some' about the same for 'little' and 11 per cent responding that they could not communicate with the trade union safety representative.

Table 4.23 Perceived communication with key players

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>%</th>
<th>Little</th>
<th>%</th>
<th>Some</th>
<th>%</th>
<th>Much</th>
<th>%</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Union</td>
<td>133</td>
<td>11.8</td>
<td>307</td>
<td>27.1</td>
<td>305</td>
<td>27.9</td>
<td>385</td>
<td>34.1</td>
<td>0</td>
</tr>
<tr>
<td>Safety Officer</td>
<td>349</td>
<td>30.8</td>
<td>159</td>
<td>4.34</td>
<td>390</td>
<td>34.5</td>
<td>232</td>
<td>20.5</td>
<td>0</td>
</tr>
</tbody>
</table>

For safety officers the majority of respondents indicated they felt they could communicate 'Some what' with 35 per cent, 20 per cent indicated 'Much' and only 4 per cent responded to the category 'Little'. However of respondents over thirty per cent indicated they could not communicate with their safety officer. The ranks were tested using the Wilcoxon test and the following results obtained:
Safety Officer / TU Rep

<table>
<thead>
<tr>
<th>Mean Rank</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>268.67</td>
<td>431</td>
</tr>
<tr>
<td>237.00</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>610</td>
</tr>
</tbody>
</table>

- Ranks (QSO LT QTU)
- + Ranks (QSO GT QTU)
- Ties (QSO EQ QTU)

Total 1135

\[ Z = -13.4463 \quad 2\text{-Tailed } P = <.00005 \]

Mean TU 2.861, SO 2.476

Once more this would support that trade union representatives are considered to provide more of a communicating mechanism than safety officers. The next aspect to consider was the degree to which individuals felt they could trust key players with personal information regarding their disability and health and safety. Table 4.24 shows for trade union representatives a fairly standard spread of results. Those that would not trust their trade union representative accounted for 16.7 per cent, those that would trust them a 'little' accounted for 17.6 per cent while the highest response rate was those that would trust their TUR 'some' of the time with 41.8 per cent. Interestingly 10 per cent would trust them 'much' of the time and 14 per cent 'very much' of the time. Safety officers scored less well with nil respondents indicating that they would trust them 'very much' of the time, nearly a third however would trust them 'much of the time', over a third would only trust them a 'little' and once again nearly a quarter of respondents would not trust them at all.

A test of difference was applied where it was found that trade union representatives were slightly better trusted by individuals.

<table>
<thead>
<tr>
<th>Table 4.24 Perceived degree of individual trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>Trade Union</td>
</tr>
<tr>
<td>Safety Officer</td>
</tr>
</tbody>
</table>

n=1135
Chapter Four

Safety Officer/ TU rep.

<table>
<thead>
<tr>
<th>Mean Rank</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>453.08</td>
<td>367 - Ranks (QSO LT QTU)</td>
</tr>
<tr>
<td>322.85</td>
<td>402 + Ranks (QSO GT QTU)</td>
</tr>
<tr>
<td>366</td>
<td>Ties (QSO ET QTU)</td>
</tr>
<tr>
<td></td>
<td>1135 Total</td>
</tr>
</tbody>
</table>

\[ Z = -2.9615 \quad 2\text{-Tailed } P < .0031 \quad TU 2.864, SO 2.677 \]

4.6 Discussion

This chapter attempted to explore further the results of chapter three by applying the test criterions to a random sample of the target group. Before embarking on the discussion of the results it is firstly important to explore the limitations of the research so that the findings can be better understood. Overall 2500 questionnaires were forwarded to a representative sample of the population. Of these 1135 were returned accounting for a response rate of 47 per cent. This is not as large as was initially hoped but was sufficient to meet the sampling criteria set out at the onset. A further factor that should be considered was the under representation of Males employed within the engineering sector. Possibly this is a reflection of the nature and culture of the engineering sector and the 'macho' and 'independent' image that is portrayed within it. Equally although contemporary research suggests within the disabled population of economically active individuals there are proportionately more males than females (60:40) in the sample, females were in the majority with a 39:61 ratio. Once again this may be a reflection of the specific industrial sector. Furthermore the results of this chapter can only act as a guide to normative elements of a SMS which are important to individuals who are disabled, impaired or handicapped. In turn these may be used as critical success factors (CSF) in developing SMS objectives and key performance indicators (KPI). The following discusses key findings of this and chapter three. However a fuller discussion will be provided in chapter seven.
Overall chapter three and four have evaluated the disability paradigm within the context of collective protection at the individual level. The findings have been developmental and iterative, involving group discussions, focus groups and personal interviews. The more tightly bounded emerging patterns were then supported via a self completed postal questionnaire to a random sample of the target population.

The results of this triangulated methodology support the broad findings that individuals within the paradigm of disability demonstrate specific needs, problems and dilemmas when securing their health, safety and welfare whilst engaged in employment. As discussed previously statutory compliance with HSW legislation can best be achieved via effective management, which in turn can be categorised into the domains of policy, hazard and monitoring. Overall respondents reported to be completely unaware of any policy in place that specifically attempted to secure their HSW. Hazards were identified with both the hardware and software domains of organisations SMS and no effective systems of monitoring were identified. In terms of the SMS domain this can be monitored through aspects of cognitive adequacy at the cybernetic systems level. Cognitive adequacy comprising sub-domains of responsibility, communication of information and problem resolution was once more found to be wanting.

When asked to rank a scalar question set on levels of responsibility within their employing organisations 92 per cent disagreed that any individual accepted responsibility for their individual safety. Similarly 84 per cent thought they had not been provided with relevant information and 92 per cent felt problem they had encountered while engaged in employment had not been resolved.

It also emerged that problems faced by the target group were in the main on the software side of SMS. These were demonstrated when ranking problems associated with degrees of individual importance to the target population and the corresponding degree of institutional commitment provided. This differential between the degree of individual importance and institutional commitment were measured to ascertain a better
understanding of any areas which demonstrated significant difference. Elements that emerged included the provision of information specifically relevant to disabled employee HSW, pre-employment screening, the provision of WC facilities and risk assessment. The differential between these constructs it is suspected may provide the trigger (as described by Reason, 1990) that may enact the latent error (Reason, 1990) resident within an organisation's SMS. These should be addressed by organisations as part of their principal components for action and incorporated possibly as one of the KPI's for the review and auditing procedure.

A primary example includes situations where disabled employees may not be provided with sufficient information to ensure either their own safety and health or others that may be affected by their actions. See for instance the driving requirements for disabled individuals (DVLA, 1996) and the requirements for Fork Lift Training (HSE, 1988). A second example includes means of escape where the literature suggests employees with a sensory or physical impairment, that may reduce mobility and impede egress, have a Personal Escape Plan (PEP) devised for them (Shields, 1993). This would generally include the provision of specific training, assistance by nominated and trained personnel, and possibly mechanical assistance where appropriate. A common method for evacuating individuals who have mobility impairment is the use of 'Evac' chairs. Problems were also raised for other employees who may have to provide assistance to physically disabled employees. Typically this activity had not been discussed with the disabled employee.

A third aspect relates to the stressors in evidence and the provision of workplace counselling facilities. Although there is no specific legal requirement to carry out workplace counselling for general employees, it would seem reasonable for individuals who may be at special risk to their health and safety to be provided with such a mechanism where suitable assessment of risk demonstrates it necessary. In fact stress counselling is well recognised as a reasonably practicable control measure in certain conditions (Cooper & Williams, 1995; Levi et al, 1986; Cox & Howarth, 1990). Therefore if there is a foreseeable need to provide employees with certain counselling facilities to assist in
their employment and to prevent ill health there would be a general duty on the duty holder under section 2 (1) of the Act. Furthermore as with all those issues raised thus far there is a new requirement under the Disability Discrimination Act 1995 (DEESS, 1995) to provide reasonable accommodations and make reasonable adjustments for disabled employees. This would also apply to health surveillance if necessary for individuals who were susceptible to environmental conditions or work activities controlled under Control of Substances Hazardous to Health (DOEMP, 1994) regulations.

These results would also support the theory that disabled employees do in fact consider the softer elements of an organisation's safety management systems to be more important than the harder elements. In this context it would appear that communication is the principal construct or process that is perceived to be of focal importance.

Finally the results once more would suggest that of the three constructs which make up social support - institutional support, communication and trust (Sarason et al, 1987) - on all aspects management were ranked lowest as providing social support to employees who were disabled. Supervisors were it seems better placed than management to provide support however those reported by the target population to play a key role were work colleagues. In terms of HSW compliance institutional key players and their relationships may, if positive, provide a source of social support that may add to well-being and act as a moderator of stressful events or activities (Lindorff, 1995). In fact Lindorff concludes that social support via workplace relationships is beneficial even in non-stress events.

Once again in the context of this study the most important element of the social support battery was the communication aspect. Forty eight per cent of respondents indicated they would never communicate with their line manager regarding HSW issues, 22 per cent responded similarly for their supervisor and 7 per cent for their peer group. This has serious implications in terms of duty holders meeting their legal obligations under the Act. In particular section 2(2) a places a duty on holders to 'ensure the provision and maintenance of ... systems of work that are, so far as is reasonably practicable, safe and
without risks to health'. This subsection of the Act is a fundamental aspect of what 'Robens' saw as the systems model that would allow industry to regulate itself by collectively bargaining on the issues of safety and health with employees or their representatives. If disabled employees are not represented on safety committees - as the results suggest- and if they are not communicating with line management or their supervisory level it would suggest that they, as a group, are not properly being provided with the resources, facilities, mechanisms or culture to provide such collective bargaining.

In broad terms the majority of individuals consider 'access to safety committee meetings', 'training for other staff on the needs of disabled people' and 'individual attitudes' towards the safety aspects of disabled employees to be ranked highest in terms of importance. In terms of regulatory compliance these are functions which it is argued all duty holders have already under the general duties of the HSW Act. More specifically relevant statutory provisions are in place which provide for consultation on aspects of an organisation's undertaking. It is also relevant that under section 2 (2)c of the Act, that in particular 'such information, instruction, training and supervision as is necessary to ensure, so far as is reasonably practicable the health and safety at work of his employees' is specifically relevant to the aspect of training provision for other staff. Other sections of the Act also provide for such training -although this time indirectly- namely section 7 which places a duty on employees to take reasonable care of himself and others who may be affected by his acts or omissions. It is argued that if employees do not understand the needs of specific at risk groups they will not be in a position to take reasonable care of them in normal work place conditions or in times of emergencies. These are specifically required under section 7 of the HSW Act and regulations 11, 12 and 7 of the Management of Health and Safety at Work Regulations (DOEMP, 1992a) respectively.

This may also impact upon aspects related to safety attitudes and their relevance to disabled employees. Although it is well accepted within the framework of contemporary literature that individual attitudes play a lead role in an organisation's safety culture (Pidgeon et al, 1991; HSE 1991; CBI, 1992; ASNCl, 1993) and as such it is imperative
that they are directed, where possible, in the direction of a positive safety culture, this is not generally accepted to the same degree within industry. If barriers exist at the individual level the promotion of a positive safety culture will be that much more difficult (Fishbein & Ajzen, 1975).

4.7 Conclusion

This chapter provided the foundation from which it was possible to explore the cybernetic cognitive adequacy at the organisational level to determine whether the constructs that are important to disabled employees are also important at the institutional and operational level. This will be carried out provisionally by way of case study analysis and supported by self completed questionnaire.
CHAPTER FIVE
THE ORGANISATIONAL CONSTRUCT
'QUALITATIVE CASE STUDY'

Personal relationships are the important things for ever and ever, and not this outer life of telegrams and anger.

CHAPTER FIVE - THE ORGANISATIONAL CONSTRUCT

5.1 Introduction

Previous chapters developed a theoretical basis for determining those elements of a SMS perceived by the target study group to be important, identified potential key performance indicators (KPI's), critical success factors (CSF) from the employee perspective and measured the differential between individual importance and institutional commitment. This allowed a priory to be established from which organisational performance may be measured between those that follow a TQM programme and those that do not. The next stage of this thesis therefore was to explore and develop a theoretical model of normative performance at the organisational level. This was carried out within the boundaries of two contrasting industrial sectors and attempted to compare and match the patterns identified within the case study units of analysis so that a best practice model might be developed. Specifically this was carried out from a grounded theory approach using Westrum's (1988) 'Cognitive Model' as a form of priory to address the following organisational research questions:

- Who holds responsibility and decision control for the health, safety and welfare of disabled employees and non-employees?
- What information is communicated between actors within the system?
- How are problems concerning the disabled paradigm resolved?

In turn this allowed the overarching question to be answered, namely the null hypothesis that "Safety Management Systems integrated within a TQM culture positively affect the socio-technical systems of the paradigm of disability".

5 - 176
5.2 Methodology

The focus of this chapter is the inductive and deductive theoretical exploration of the paradigm of disability and its relationship with the phenomena of integrated Total Quality Management (TQM) and organisational SMS. This part of the research was carried out within the domains of strategy, process/system management at the corporate level, the SMS at the organisational level and the cognitive adequacy criteria at the operational level. This was executed within the context of two contrasting industrial sectors.

As previously described in chapter three, development of theory via case studies is a central activity in organisational research and enquiry (Eisenhardt, 1989). It is at the point of development where it is now accepted and advocated as a valid scientific tool from which to develop theories central to phenomena and the context in which phenomena are embedded (Miles & Huberman, 1994; Yin, 1984; Eisenhardt, 1989). For instance, Glaser & Strauss, (1967) detailed a comparative method of grounded theory through case studies, Yin (1984) described the design of case studies and Miles & Huberman (1994) codified a set of procedures for analysing qualitative data. For the purpose of this study it was felt that as it had set out to define relationships in broad terms, cover contextual conditions and relied on multiple sources of data, it fitted well with previous case study methodologies. It also fitted with theory development methodologies advocated by others (Glaser & Strauss, 1967). See chapter three for further details.

5.3 Case selection

Following a multiple case study protocol, the criteria for selecting the case study units was based upon a comparative and contrast logic between organisational size, incumbent safety management culture and industrial sector. As described in chapter three, qualitative sampling is purposive rather than random (Kuzel, 1992; Morse, 1989) and as such very much theory driven. A screening process was therefore carried out through elaboration of the theoretical construct of the study. In total this resulted in eight case study units, which fell within the recommended limits set by Eisendhart (1989). Four were in the
sector and four in the engineering sector. Retail sector organisations were selected from the standard industrial classification (SIC, 1992) 52.11-6410 while those in the engineering sector came from SIC 28.52 3289. Within this grouping organisations to be studied were further subdivided into those who had integrated their SMS within a TQ Management programme, and those which had a SMS but no TQ based management programme.

The first major research problem was to select case study units of analysis, gain permission from organisations displaying the necessary attributes and secure researcher assistance. Typically with any research involving organisations, this has always been recognised as a difficulty (Hedrick, et.al., 1993; Maruyama & Deno, 1992). Within this study it was necessary to gain permission from two major industrial sectors to carry out the research. Two sector specific associations including the 'Engineering Employer's Federation' and the 'British Retail Consortium' were approached. Both provided population lists of organisations from which the units were subsequently selected. This study ostensibly followed a cross-sectional design (Easterby Smith et al. 1994) which allowed analysis at the inter-organisational and intra-organisational level using inductive logic. Table 5.1 tabulates organisations used in the exploratory theory building.

<table>
<thead>
<tr>
<th>Reference Identification</th>
<th>TQM Culture</th>
<th>No. Employees</th>
<th>SIC</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Tinsley wire</td>
<td>Y</td>
<td>500+</td>
<td>28.52</td>
<td>Engineering</td>
</tr>
<tr>
<td>(B) Metals production</td>
<td>N</td>
<td>500+</td>
<td>28.52</td>
<td>Engineering</td>
</tr>
<tr>
<td>(C) Safeways</td>
<td>Y</td>
<td>500+</td>
<td>52.11</td>
<td>Retail</td>
</tr>
<tr>
<td>(D) Budgens</td>
<td>N</td>
<td>500+</td>
<td>52.11</td>
<td>Retail</td>
</tr>
<tr>
<td>(E) Airotech</td>
<td>Y</td>
<td>50</td>
<td>28.52</td>
<td>Engineering</td>
</tr>
<tr>
<td>(F) RTS</td>
<td>N</td>
<td>50</td>
<td>52.11</td>
<td>Retail</td>
</tr>
<tr>
<td>(G) Hawkers</td>
<td>N</td>
<td>50</td>
<td>28.52</td>
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Each unit of analysis contained those elements or factors that were identified as a priori to be explored. This included units with employees who were disabled, had an identifiable SMS and, where appropriate, an integrated safety management and quality system. For certain screened units the final decision for inclusion within the sampling frame was based on an assessment of whether the organisation was defacto following a TQ programme; as opposed to merely believing it was. To identify the level to which organisations followed a TQ philosophy and as such demonstrate the existence of a TQ culture it was requisite to associate critical factors exhibited by the organisations. Porter and Parker (1994) have among others identified a number of such critical factors that determine the success of a TQM process in changing the culture of the organisation. These were identified by an extensive literature survey and an evaluation study. Results suggested those factors which are critical for an organisation to be a successful TQ organisation include: necessary management behaviours; a strategic approach; an organisational structure which harness all the potential of the workforce; effective communication processes; adequate training and education of all employees; employee involvement; process management and systems and quality technologies i.e. benchmarking, tools of TQ etc. These have been compared with other assessments such as Saraph's (1989) factor analytic model, the Malcolm Balbridge Quality Award and the European Quality Award (EQA), (See British Quality Foundation, 1994).

All organisations from the preliminary filter were subjected to a further review of the key elements by way of a structured interview where each organisation was measured against the eight critical factors set out by Porter and Parker (1994), the results of which are illustrated in table 5.2. From these it was revealed that four organisations followed a Total Quality programme and four did not. Therefore all were included within the study for further analysis.
## Chapter Five

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5.4 Unit of analysis

The units of analysis for this study was the 'organisation' and organisational systems and sub systems or processes that made up the dominant collective norms of the paradigm of disability. This phase of the study was scoped out and bounded by the time and resources available for this element of the study. Using the case study approach and a triangulation methodology model, only key individual actors and documentation were studied during the case study phase that related to the study objectives. Key actors and documentation was identified by returning to the theoretical basis on which the study was based and iterative deduction as knowledge developed. More time would have allowed a more rigorous exploration of the links and interlinks between such players however this was not possible within the bounds of the study.

5.5 Techniques of analysis

Analysis of case study units comprised a multiple phase approach, namely data collection, data reduction, data display, conclusion drawing and verification. Each element of the case study phase required a distinct approach, to data collection, data reduction and analysis of evolving variables. Included within the case and cross case analysis were a number of specific techniques to explore the date including, contrast and pattern matching techniques, reiteration methodologies, content analysis, causal flows and network analysis. The interviews were taped and transcribed onto contact summary and document summary sheets in Word Perfect for Windows. This information was then imported into a relational database, 'Idealist', for further analysis and coding. Coding was iterative and developed as the case study progressed. Coding is set out in Appendix D. Each case study involved a number of site visits comprising both formal and informal interviews with key actors who emerged within the paradigm of disability. These were identified heuristically and included senior management, safety managers, quality managers, occupational health, human resources, facilities/building services and employees who were disabled. In addition content analysis was carried out on related documentation
such as health and safety policies, recruitment information, risk assessment data, minutes of safety committee meetings and safety information such as memos etc.

5.6 Within case study analysis

5.6.1 Company 'A' profile

Company 'A' was a UK subsidiary of a Dutch corporation. Its products included metal fabrication, the manufacture of wire and the production of industrial fence materials. It operated from a large multi-site position in the North of England and employed in excess of 1200 employees. It operated a decentralised matrix management structure involving input from business units world wide and national corporate management. It had followed a Total Quality Culture programme for over five years. The company had set out its mission as being:

'to maintain and improve on our position as a premier UK company, recognised as a producer and supplier of high quality, good value products'

It claimed to achieve its mission by focusing attention on the needs of customers, both internal and external, employees, quality corporate relationships and the community in which it operated and supported. It believed it was a very paternalistic employer with the average employment history being in the region of twenty years. It did however acknowledge that the new younger labour force are much more mobile and therefore this must be reflected in its inward investment strategy. Within its UK labour force it employed a relatively high number of disabled employees (76).

5.6.2 Corporate strategy development and goal deployment

Each part of the organisation had defined, mission statements, set strategic plans, produced 'critical success factors' and 'key performance indicators' for many of its functions. At the corporate level the company had defined its strategic framework from its mission or vision statement and from this, defined a number of measures of success considered important to the business as a whole. These inter alia included marketplace leadership, personal growth of employees, community relationships and something it
termed 'value creation'. From these, further division was made into what it termed key result areas (KRA's) which are further translated into key result measures (KRM's)\(^1\). The Director of manufacturing also produced a series of measures. These measures were cascaded down to the operational level and included quality, health and safety and environmental performance. These were documented and produced in a handbook for all employees and managers. This strategic approach developed mainly from the organisation's drive towards TQM or as referred to in the organisation TQC (culture). The company had been operating a TQC programme for five years and had started to use self assessment against the European Quality Award (EQA) criteria.

5.6.3 Corporate process/systems management

Each department had developed its own 'action plan' based upon the company's strategic framework. From these, key processes were identified by brainstorming and then flow charting. Subsequently each process was subjected to internal audit prior to inclusion in the organisation's ISO 9000 system. The cascade of this action plan included the sub systems of responsibility or control and individual performance measures such as performance appraisal and individual development of goals. It was from the strategic framework that these goals were identified and realised. Those KRA's for individuals were cascaded via the quality manuals which each department were in possession of. Team performance measures were used to a high degree on the shop floor to improve productivity and increase competition between teams and departments. This was particularly relevant when related to safety.

5.6.4 Safety management domain

The organisation had fully integrated its safety management system (SMS) with its

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\(^1\) These it defined as "the key capabilities we need to achieve our vision" and include a Winning team, Product Leadership, Management effectiveness.

\(^2\) These it defined as "the goals we must achieve to develop and sustain our key capabilities"
Environmental Management System (EMS) and TQC programme. The health and safety at work (HSW) function sat under the auspices of the Facilities Directorate and was headed by a safety, health and environment (SH&E) manager. In turn he was responsible for six reportees and four support staff. The SH&E manager reported full financial commitment whenever health and safety became a serious issue. Notwithstanding this as a budget holder he felt that as 'Environment' was 'the flavour of the year', and his was a single account, this caused a shift in budget allocation from H&S to Environment. The full integration of the SMS with the corporate TQC programme saw its realisation with benchmarking of accident rates with other similar sized companies and the identification of improvement areas and the setting of goals - both for occupational health and accidents. The organisation was very proud of its goal setting approach to its SMS which followed very similar lines as Deming's PDCA circle (see chapter two for further details).

5.6.5 Policy/procedure domain

The company's HSW policy documentation was very comprehensive and had been signed by the Director within the last twelve months. The policy document was contained within a manual which was divided into three separate parts or sections. These comprised the general policy statement or statement of intent, the layout of the organisation and its levels of responsibility and finally 'safe operating procedures'. Prima facia it appeared fully supported organisationally by both staff side and management. The dedicated SH&E manager was represented at senior management level via the Director of Facilities. The Director believed, when asked how the policy influenced actions, that the policy was the framework in which the organisation put its arrangements which in turn line management followed. The policy was part of the organisation's integrated TQC approach. The policy was well documented and followed the controlled document approach of BS5750/ISO9001. The SH&E manager had recently developed a new policy document which he placed great faith in:

'What makes the policy work is that every one has been involved in the formulation of this one. We had one before but it didn't fit because the union's weren't involved in its development and as such didn't want it to work'
He reported that the new policy was developed by involving staff at all levels. In policy terms the levels of responsibility were well defined for the key personnel. However when it came to determining levels of control and responsibility for those individuals at special risk, such as disabled or the impaired, the policy document was not as clear as for general issues of safety or health. The organisation employed approximately 76 employees who were recognised as disabled or having an impairment (see table 5.3 later on page 5-194).

5.6.6 Responsibility

The research question to be answered was 'Who holds responsibility for the health, safety and welfare of disabled employees?'. In an attempt to answer this question the policy document was reviewed and key actors were interviewed (see table 5.3). Overall within the statement of intent it appeared the Managing Director was responsible for the Safety, Health and Welfare of all employees. This was further supported at the organisational level where responsibility was cascaded down the structure of the organisation from line management to supervision, and finally shop floor workers. Within the policy document no formal structure identified a position specifically responsible for the control of disabled employees' safety. Specific responsibility was however allocated to line management, human resource, occupational health and the SH&E manager. Each of these key actors were interviewed.

5.6.7 Line management-responsibility

Line management were made 'responsible for the safety, health and welfare of all staff under their control'. Within the context of individual job descriptions line management were 'directly responsible for all aspects of their staff's health, safety and welfare'. By definition this included disabled staff. However when exploring this control mechanism it soon became apparent that in most cases line management did not feel capable of
making objective decisions about the safety aspects of disabled employees. A common feeling emerged that 'they should not be working in such a high risk industry', but interestingly many accepted that in some instances it was the industry that had caused the impairment in the first instance. On further probing it also became evident that many managers felt it to be too sensitive an issue to broach with individual employees. No manager had undergone specific training on 'disability awareness' or training on the needs of disabled employees. In fact only one manager had undergone any form of health and safety training at management level. Some had received formal training during their formative days, however, two thirds of those interviewed felt they would benefit from some form of training on the issues of disability and implications on the work environment.

When asked 'where they would go for advice on such issues', the dominant pattern of responses indicated (unprompted) the SH&E manager or HR manager. Two thirds indicated the SH&E manager and one third the HR manager. No line manager responded to the question unprompted 'occupational health'. When asked the same question but about external information providers most indicated that 'they would not know who to go to'.

5.6.8 Occupational health department-responsibility

The occupational health department, were within the context of the corporate policy, responsible for the provision of a full complement of occupational health and hygiene services. No specific evidence emerged within any documentation as to the scope of responsibility or the remit of the department, however all staff were trained in occupational health and were supported by a qualified occupational health physician. The occupational health department although included within the same directorate as Facilities and Safety were located in other buildings - something which was perceived to be a barrier by many of the HR and safety professionals.
In line with its TQC different departments and individuals were referred to as customers and therefore, in an attempt to explore the lines of perceived against actual responsibility/control, members of the occupational health department were asked 'who do you see as your customers?'. Among the responses one seemed to express the dominant accepted norm:

'senior management and in particular the TQ Director. I feel I represent the senior management of the company and provide them with the advice they need to make many of the decisions on employee health matters'.

To explore this phenomenon and line of enquiry further personnel were asked what actual departmental interaction with disabled employees occurred within the organisation. Each interviewee was asked:

Q. What involvement do you have with disabled employees? Typical responses included:

A. When ever one comes for a job with us we will vet his/her application form and if necessary carry out pre-employment medical screening.

Q. What criteria do you use to make a judgement of fitness for work?

A. In this high risk industry you must be very careful not to employ anyone who may be a liability while in the company's time.

A. We don't make a decision we just advise.

Q. If you do employ an individual with a physical or sensory disability what do you do with the information you have gathered?

A. All information gathered by my team is of the strictest 'medical in confidence' and cannot be communicated to any one other than the personnel department, if they ask for it.

It appeared that the occupational health department had much valuable information regarding disabled employees but were not in a position to disseminate it. In an attempt to follow this complex issue a selection of disabled employees were also interviewed. In exploring the individual level of perceived responsibility many disabled employees reported they should have more access to the occupational health provisions, but felt that members of the team should not be responsible for their HSW or more importantly 'part of the company'. It was perceived by many that some form of collusion between the
occupational health service provider and the senior management took place and that they 'filtered' information.

One disabled individual when asked 'Do you find the medical facility useful?' said,

'It would be if they would talk to you and not give the impression they thought you were malingering or making excuses. I have worked for this company for thirty years and never taken a day off without needing it. They are all the same, doctors and nurses. [What do you mean by that?] Well they must know so much but they never ask about the real problems I have to put up with. You know I have to sit in this wheel chair for eight hours a day when I am at work and it hurts, especially on a hot day when everything gets sticky. In response to the question 'Have you ever complained to your line manager about it or asked your fellow employees to assist?' the interviewee replied: No. I wouldn't give them the satisfaction of knowing I couldn't do it myself.

In terms of responsibility and communication within the different levels this response pattern presented difficulties. On returning to the Occupational Health department staff nurses were asked 'which rehabilitation facilities were in place for disabled employees?'. Although many of the nursing staff were very experienced and were broadly aware of disabled employees the dominant pattern emerged 'it depends on EMAS'. There was much reluctance to make a decision on any issue regarding long term requirements for disabled employees as it was deemed not within the scope of their role. However, further probing revealed that EMAS were not in fact perceived to be very helpful and would always air on the side of caution. Further probing using content analysis of the procedure manual suggested that EMAS 'should be sought for advice in all cases of occupational health which cannot be resolved internally'. In broad terms the manual focused mainly upon surveillance measures required under the COSHH regulations. In fact, nearly all requests for service came from the SH&E department. Limited requests for service came from the HR department which when they did were mainly for sickness absence issues and pre-employment medicals.

On exploring the department's documentation it emerged that much of the trade literature regarding workplace alteration for disabled employees had in the past been forwarded
directly to the occupational health centre, but was not passed to the SH&E department, line management or the facilities manager; who in most cases would carry out any alteration required to workstations and accommodations. The department were also responsible for all aspects of audiometric testing for Noise Induced Hearing Loss; once more this was not communicated to SH&E unless a major issue was perceived. The two employees who were registered under the 1944 Act as deaf had never been to the occupational nurse. The next department which emerged with organisational responsibility for disabled employees was Human Resources (HR).

5.6.9 HR levels of responsibility

Within the context of the organisational policy document, Human Resources were primarily responsible for ensuring equal opportunities existed for all staff and potential staff. They were also responsible for the registration of disabled employees under the 1944 Act. In this particular instance this required the department to complete a register of employees who were classified as disabled under the Act. No such register had been provided to the SH&E manager or to relevant line managers. The HR department were also responsible for liaison with the Placement Assessment and Counselling Team (PACT) and Disabled Employment Advisers (DEAs). All members of the HR department were members of the Institute of Personnel Development (IPD) the professional body of personnel officers. It was reported that previously the department had employed an individual who, in addition to other duties administered issues related to disabled employees. She was reported to have known local groups and used to be in contact with them on a regular basis. It also emerged that she was the individual responsible for obtaining grant aid to provide additional control systems for one employee who was deaf and could not hear the tea alarm or the fire alarm. A grant was made available to install a flashing light system on his C-N-C machine informing him of breaks and an emergency situation (see Figure 5.1). It was reported that when she retired her knowledge went with

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3At the time of writing this thesis the Disability Discrimination Act 1996 repealed much of the 1944 Act
her and so did the focus.

Figure 5.1 Conversion to C-N-C machine for deaf employee

The department had no formal documentary evidence of a control mechanism for documentation relating to disabled employees. They did however have comprehensive documentary evidence on sickness absence for all staff which included those who were disabled. To many of the disabled employees who were interviewed this represented an antagonistic form of action and was seen as discriminatory. Disabled employees were often reported to be absent for sickness reasons much less so than non-disabled employees.
5.6.10 Facilities Directorate—responsibility

The facilities manager was also included within the policy document on HSW as being responsible for all maintenance tasks and corrective actions when reported by line management and the safety committee. Notification of corrective actions or maintenance requirements emanated from two primary sources, the safety committee and a suggestion box/board. Although it was reported the board took some time to be effective, once inhibitions were overcome, it was reported to be quite constructive. This represented an element of best practice. On a weekly basis the maintenance assistant would walk around and note areas requiring action. On analysing the documentation it was found that on a number of occasions maintenance tasks had been brought up at the safety committee meeting (to be discussed later) asking for wheel chairs to be repaired and minor adaptions to the workplace. When this trail was followed it appeared that mobility impaired employees used their own chairs until they were on site whereupon they would be provided with a company chair which was narrow enough to fit through doors and escape routes. Notwithstanding this, these wheel chairs were very primitive in both design and manoeuvrability. One only has to see the illustrations at in Appendix E to realise the development in wheel chair design and the options available. In many ways it was the view of the author that the chairs provided by the company would not meet the requirement of the workplace regulations. No assessment had been carried out and in many cases the workstation did not consider ergonomic principles.

5.6.11 Supervisors—responsibility

Supervisory levels within the organisation were made responsible for the health and safety of their subordinates. As demonstrated in the following extract from the policy:

Supervisors and Project Leaders are accountable to their manager for the day to day implementation of the Company's Safety, Health and Environmental Policy, the established rules and prescribed working practices. They are also responsible for the introduction of remedial measures to reduce or eliminate acts or conditions which are contra to the Policy. Their responsibilities also include informing, training, and supervising employees in safer methods of work and for investigating accidents that occur in their area or to an employee who reports them. This includes the completion of the initial accident report.
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Once more those supervisors who had disabled employees reporting directly to them were interviewed. From these interviews a pattern emerged that illustrated a difference between the knowledge base of the individuals and the desire for specific training on the subject. Many of the interviewees reported they felt they could not talk openly with disabled employees as it was 'embarrassing for both parties'. This was not the case in all instances. Three of the supervisors had known the disabled employee since the accident or onset of the disease. Each, concurred to feeling no such inhibitions as they could 'have a laugh and a joke about it most of the time'. This emerged as a dominant pattern throughout future case study units. Although no formal safe system of working had been set up and documented, there emerged a positive relationship between these employees and their supervisors. In particular the more contact time between the supervisor and the disabled person the more support appeared to be perceived. Once more this would support the emerging findings of chapter three and four.

5.6.12 Employees' responsibility

The following is an extract from the safety policy document:

'All employees have a duty to take reasonable care of themselves and others and to co-operate in the implementation of the Company's Safety, Health and Environmental Policy and its supporting ORGANISATION and ARRANGEMENTS. Breaches of safety rules will be dealt with using the disciplinary procedure published in the Company Employee Handbook.

On further probing a number of disabled employees reported they had not read the policy document or any other literature on safety or responsibility. Therefore they could not be expected to understand their responsibilities and they were unaware of others' responsibilities. In particular cases the literature had not been read because of access but in many cases it was because provisions were not in place to decipher the documents, or the medium was not suitable for their particular impairment. On discussing the issue of disabled employees and the lines of responsibility, on a formal level, no employee appeared to have been given responsibility for monitoring or assisting a disabled person in times of emergency. However on an informal basis, when disabled employees and their
peer groups (work colleagues) were interviewed, in most cases it emerged that very informal networks had been established. For example, an informal sub-system had developed where those employees in the immediate vicinity of one mobile impaired employee would act as his assistant and remove him in case of a fire. They had been doing so during routine fire drills for over five years and had never reported it having caused a problem. On probing further it emerged that it was common practice to physically lift the employee and carry him down three flights of stairs. The normal method of access, a lift, was restricted during fire alarms. The same also appeared to be the case for a sensory disabled employee who was visually impaired. These informal systems emerged as a dominant pattern throughout the organisation.

In summary table 5.3 illustrates the high reliance on informal systems of responsibility and control, in what appeared to be a very well advanced safety management system. It was then decided to explore how the resident safety management system was measured and how its performance was evaluated i.e. to determine whether these informal systems were monitored.

5.6.13 Health and Safety Performance Measurement

Performance measures for HSW were set corporately by the Director, who was reported to be very concerned with health and safety issues, and monitored by the SHE manager. Financial performance bonuses were awarded for meeting specific performance related targets at all management and employee levels. In broad terms those key performance measures and indicators for the health and safety domain were focused very much upon accident statistics. These were quantitative measures and included lost time injuries, non-reportable incidents under RIDDOR on the reactive side and near misses on the proactive side. The company were nevertheless investigating the use of attitudes and behaviour patterns to further reduce accidents and ill health at work.
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<td>Key: System extent Stg. Strong, Ad. Adequate, Wk. Weak, Ab Absent; System effectiveness ++ very effective, + effective, - mixed effectiveness, - ineffective, Supporting conditions: +++ strong, +++ Adequate, ** Weak, * Control issues &lt; Inadequate target &lt; not adequate resources; @ action required # decision making role</td>
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Further more, safety related performance was benchmarked against market competitors of similar size and composition, but again related mainly to accident ratios. The safety manager reported that since the company had initiated the TQC programme there had been a slight reduction in the accident statistics\(^4\) from 0.5 to 0.2 per 100,000. Therefore these were identified as the critical success factors for the organisation's performance. Furthermore the level of acceptable performance was identified by benchmarking against the HSE's acceptable rate of over three day accidents per 100,000 employees. These performance figures were calculated by using an in house computer system which was networked to each site. Subsequently these results were depicted graphically and displayed in each department with a view to engender interdepartmental competition. All employees were encouraged to report accidents and near misses. Frequently management and employees indicated that 'a no-blame culture existed within the company'. No performance targets were published for occupational health i.e. chronic conditions but trends were monitored for internal use by the department.

At the operational level it would appear that true performance was monitored by:

'quarterly meetings which are attended by management and staff side. From this meeting we identify key areas that may have safety related problems'

Disabled employees were not represented throughout the organisation's committee structure.

In summary the organisation appeared to have a comprehensive SMS however there appeared to be no formal sub-systems or policy links between the SMS and employees who were disabled. Table 5.3 illustrates a summary of the emerging findings on the SMS policy domain. The next domain to explore was communication which had many links with elements of the policy domain.

5.6.14 Internal communication.

This phase of the case study was to address the question 'what information is

\(^4\)On reviewing these statistics they were not supported by any control factors.
communicated to disabled employees relating to HSW'. On probing key actors and cross referencing documentary data structures the communication networks present in the organisation appeared to be well established. Good links existed between the SH&E manager, the Union representative, Human resources and employees. The organisation had adopted an open door approach regarding the sharing of information and airing grievances. This started at the shop floor level and progressed up to board level. A similar approach was adopted for the reporting of accidents and near misses. Much of the reporting could if so wished be carried out anonymously via recording boxes.

The health and safety policy was communicated throughout the organisation by various means. Initially staff were provided with a handbook outlining the mission statement, general statement of intent and key players within the organisation. Induction training followed for all employees. This however was run entirely by the HR department and appeared quite ad hoc. Health and safety was integrated with corporate policies, sickness absences, pay and conditions etc. The H&S Committee was also used as a key mechanism for organisational communication and consultation.

5.6.15 Health and safety committee

The company had a safety committee set up under the Safety Committee and Safety Representative Regulations 1977 which met on a quarterly basis and was generally well attended. The staff handbook read:

"The director (works) will be responsible for fixing the dates for meetings of the safety committee which will be held at least quarterly. The Safety, Health and Environment Manager will, at least seven days before each meeting, circulate an agenda for the meeting. The Committee will consist of the functional director who will act as chairman, the Safety, Health and Environment manager, departmental Managers and safety representatives who shall be nominated by employees. It shall be a requirement for all Committee Members to attend safety meetings or to arrange for a briefed deputy."
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<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Ab</td>
</tr>
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<td>n</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>sigX++</td>
<td>Ad</td>
<td>Xsig</td>
<td>Wk</td>
<td>Xsig</td>
<td>X</td>
<td>Ab</td>
</tr>
<tr>
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<td>Ad</td>
<td>sig++</td>
<td>sig+++</td>
<td>sigX++</td>
<td>X</td>
<td>Xsig</td>
<td>X</td>
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<td>sig+++</td>
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<td>X</td>
<td>sig &lt; T &lt; Res</td>
<td>X</td>
<td>++ sig &lt; T &lt; Res</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Ab</td>
</tr>
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<td>sig</td>
<td>Ad</td>
<td>sig</td>
<td>sig</td>
<td>Wk</td>
<td>sig</td>
<td>- wk</td>
<td>Stg</td>
<td>Stg</td>
<td>Wk</td>
<td>Ad ++</td>
</tr>
<tr>
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<td>n</td>
<td>Ad</td>
<td>sig</td>
<td>Wk</td>
<td>sig</td>
<td>- wk</td>
<td>Ad</td>
<td>Ad</td>
<td>Ad</td>
<td>Ad</td>
</tr>
<tr>
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<td>n</td>
<td>sig</td>
<td>sig</td>
<td>sig</td>
<td>sig</td>
<td>Ad</td>
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</tr>
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<td>sig</td>
<td>n</td>
<td>Ad</td>
<td>Ad</td>
<td>sig/Ad</td>
<td>sig</td>
<td>Ad</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>Ad Stg</td>
</tr>
<tr>
<td>Communication provided</td>
<td>sig</td>
<td>n</td>
<td>sig</td>
<td>Ad</td>
<td>w/Ab</td>
<td>wk</td>
<td>Ad</td>
<td>Stg</td>
<td>Stg</td>
<td>Stg</td>
<td>Stg +++</td>
</tr>
<tr>
<td>MOE:</td>
<td>sig</td>
<td>n</td>
<td>sig</td>
<td>sig</td>
<td>sig</td>
<td>X</td>
<td>X</td>
<td>Ad</td>
<td>Ad</td>
<td>Stg</td>
<td>Stg</td>
</tr>
</tbody>
</table>

KEY: Key: System extent: Sig: Strong, Ad: Adequate, Wk: Weak, Ab: Absent; System Effectiveness: ++ very effective, + effective, + - mixed effectiveness, - ineffective, Supporting conditions: **** strong, *** Adequate, ** Weak, * Control issues < Tm not adequate time < Res not adequate resources @ action required # decision making role n = no, no direct involvement
Content analysis was carried out of safety committee past minutes where it emerged that issues related to disabled employees had been on the agenda twelve times in the past three years. In each case it referred to an employee who had been disabled by his while at work and was to be returned to some alternative form of employment. From the discussions that ensued there was a reported lack of information available for management to make informed decisions. Table 5.4 would add support to this when consideration is given to the evidence from interviews with line managers. From evidence gathered from the minutes it emerged that on each occasion individual departments did not wish to take responsibility for individual safety. It was repeatedly reported 'that the shop floor was a dangerous environment and that while the employee was in a wheel chair he could not move quickly enough to keep out of the path of fork lift trucks that were constantly used throughout'. The policy document stipulated 'alternative employment should, where possible, be found for the period of time that the employee was unfit for proper employment'. This was particularly interesting as after further probing it appeared that the individual was perfectly willing to do administrative work but had never been asked his opinion. It was perceived by the committee that he would not accept such work and therefore was at home on full pay for five months.

In terms of disabled employees, as previously discussed, the company employed those who suffered impaired mobility and impaired sensory perception. Organisationally the most common communication process involved verbal communication via cascade groups. Primarily the SH&E and medical officer communicated information to the departmental manager, senior foreman, and supervisors verbally who in turn explained the implications to employees. As described previously there was a mechanism in place for the dissemination for information on safety via handbook and safety policy statements, notice boards and a routine newsletter on safety issues.

These communication routes, although very formal for non-disabled employees, were in general terms felt to be inappropriate to communicate specific information to disabled employees. When enquiries were made regarding what provisions that had been made for
communicating this information to those who had visual or communication impairments it was concluded that no special provisions had been made. Theoretical best practice could be the reproduction of safety policy documents on taped cassette, braille and computer driven packages which are increasingly in evidence. Further evidence of where the system failed was found in the handbook which had been produced in a small font format, see figure 5.2 for a photocopy of the actual document size.

It was indicated that in all instances it was the responsibility of line management to ensure the policy was effectively communicated which was supported by the arrangements section of the policy document and the individual line managers job description.

The statement of intent document was clearly in evidence on the notice board but due to font size, angle and distance from board could not be seen by those employees who were wheel chair bound or had visual impairments. This was also relevant to the statutory notice informing employees of their rights under the HSW Act (see HSW Employee rights 1989 as amended). Further exploration identified employees with visual impairments who were using hazardous chemicals and non-hazardous chemicals in the same container types. This demonstrated a further area where effective communication should include provision of suitable information on the use of hazardous chemicals (see Control of Substances Hazardous to Health Regulations 1994). When asked 'How are dangerous chemicals notified to visually impaired employees' both the SH&E officer and line managers were unaware of the requirements of CHIP 2 (Chemical Hazardous Information and Packaging Regulations 1994) and the existence of raised hazardous triangles for such situations. Common problems that arose on the shop floor were the use of hazardous chemicals in the form of pressurised spray canisters. There was, in effect, no physical or non-verbal method that could be applied within the factory to prevent an employee who was visually impaired using an incorrect container.
Figure 5.2 Company handbook

5.6.16 Emergency Procedures - responsibility/control

The Management of Health and Safety at Work Regulations 1992 and the general duty under the Act require that provisions are put in place to communicate emergency actions to all concerned. In terms of disabled employees and non-employees this particularly includes the provision of information on means of escape in cases of emergency (MOE) and where necessary personal escape plans (PEP). To be effective these must be communicated to employees and any others who may be affected or involved with their implementation. Equally all parties should receive training on an initial and regular basis and be made aware of the risks involved. In broad terms this should involve the Safety Health and Environment department, immediate line manager, peer group employees and fire wardens where appropriate. In accordance with the Management of Health and Safety at Work Regulations 1992 where five or more are employed this must must be documented. This was not the case.
When the communication system was explored further it soon became apparent that limited formal provisions were in place to secure the HSW of disabled employees. Although there was a well established and documented policy and procedure for fire and evacuation it failed to formally recognise the issue of disabled employees. No formal PEP had been established and no specific training had been carried out for either disabled employees, peer employees or fire wardens. That was not to say that provisions were totally absent. On probing key actors further, although documentation was absent a pattern emerged in nearly all cases where the disabled employees relied very much on an informal network of arrangements. Individuals whose workstations were located in the immediate proximity would render assistance when it was felt appropriate.

In a number of situations this would have been appropriate however on many it would have been completely inappropriate. For example one disabled employee was a rather large individual who it was claimed weighed in excess of 120 Kg. His physical impairment restricted his mobility to the extent that he would not have been able to evacuate the building should there be an emergency such as a bomb threat or fire. The closest employee who could render assistance was a young lady weighing approximately 50 Kg. Her physical ability to move the gentleman concerned would have been called into question should the need have arisen. Equally this task had not been assessed either under the Management of Health and Safety at Work Regulations 1992 or the Manual Handling (Operations) Regulations 1992. It was the considered opinion of the researcher, had this been the case this should not have been relied upon as an informal safe system of evacuating this particular employee. There were however a number of 'Evac' chairs (see figure 5.3 below) situated throughout the building which would have been possible to use should there be an emergency. Notwithstanding this fact the individual would still have to be transported from their wheelchair to the 'Evac' chair.
Other similar issues arose when these informal systems were explored. A further example include a partially sighted employee who was fully aware of his work station, how to reach it in the morning and leave it in the evening. However did not know where his nearest MOE was or what obstacles were in his path should he have to use it. A classical example of such a barrier is illustrated in figure 5.4. As this corridor was used frequently and as it was a fire door with a self closer it was common practice to prop it open.
These failures of the systems approach were in most instances due to the ineffectiveness of the internal communication systems between each department which it is postulated was due to a mixture of individual and organisational barriers.

Many barriers existed between the key players and disabled employees. The staff handbook is one such example which stated:

*The Company Medical Officer will advise management on Occupational Health aspects of safe systems of work. Undertake necessary medical examinations and maintain confidential records such as:
  Pre-employment examinations
  At risk groups, e.g. Lead workers
  At the request of Management and unions or individuals, to provide advice on any potential health problems*
Problems however arose due to confidentiality of information, intra-departmental conflict and poor communication. Also of interest there was no mention of liaison with local PACT or other disability providers, when it was clearly stated in the policy that they are responsible for at risk groups. Further probing identified that they should have utilised the services of EMAS for all disability issues. They did not however have the details or regular contact with such service providers. Many barriers existed which were more a reflection of group dynamics and individual aspects than any policy provisions. Some such as HR were very cohesive and insular and others operated on a matrix system and would not even communicate within their own group. The group dynamics of the employees who were disabled could be referred to as a mixture, some were very outgoing and open while others were insular and non-communicative. This was considered part of the coping strategy used by individuals.

5.6.17 Disabled employees consultation and representation

Under the HSW Act the 'The Safety Committee' is also recognised as being an effective method of communicating information relevant to the health, safety and welfare of employees, both upwards and downwards, within an organisation. Although the organisation held frequent and regular safety committee meetings no disabled employees were ever requested or invited to attended. When asked why they had not attended any safety committee meetings or been involved in the decision making process the safety manager and the TU representative indicated that they could attend if there was a special reason. Disabled employees had also been informed by HR that if there were any problems related to health and safety they could speak to their supervisor or manager. This had only occurred once when an individual with epilepsy fell and severed his hand.

Consultation with the safety manager was ad hoc and it appeared to present problems for most disabled individuals regarding their job security. A very typical and recurring

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5 This perception of job insecurity may act as barrier to communication and trust.
"I feel as though it must be quite significant issue for me to approach the safety committee. Personally though, I don't feel as though my problems are important enough for them to deal with. Although my employer is very good to me and I know I can attend the meetings if I want, it is impracticable as I can't get up the stairs to the safety manager's office".

The safety manager was unaware that access was restricted to his meetings because no one had ever felt it necessary to attend, despite issues being raised, and no one had asked whether they could. When asked why this problem had arisen he felt that 'the whole issue of disabled employees in a high risk industry like his is asking for trouble'. He felt however that the company liked to look after all employees who had become injured while working for the company. From this it was inferred that although the organisation employed employees with disabilities it was out of social necessity.

During these discussions the safety manager indicated the organisation was well aware of their legal responsibility for disabled employees. To elaborate he explained the process when an employee became disabled while at work. The first line action would be if necessary to consult the enforcing authority under the RIDDOR regulatory system. Once they had completed the form and the accident had been investigated there would be a cut off point for the safety, health and environment team. It then became the responsibility of the HR manager. It also transpired that the tools of quality had been used to evaluate accidents and identify the route cause of the accident. Fish bone diagrams (cause and effect), brain storming and pareto analysis had been used.

5.6.18 Human resources

Other key actors in the organisation who directly administered control for the health protection of disabled employees were the HR and occupational health departments. The human resource department administered the disability policy. This was very much driven by the 'Equal Opportunities Act' and the social politics surrounding this domain. The
The manager was asked what involvement the department had in securing the health protection of disabled employees. The manager responded ‘we deal in the main in the recruitment process’ ‘We will vet all applications from prospective employees and pay strict attention to giving every one an equal chance of working for us, that is if they can do the job’. Without prompting, the manager followed this statement with: ‘You have to understand this is a high risk industry and we have to be careful to make sure we don’t employ an individual who may be accident prone, you know what I mean’. The manager was then asked if she had interviewed any disabled individuals for a job while working for the company? The respondent said, she had ‘but they were not suitable for the post’. On further investigation it transpired that although many of the line managers had received training on equal opportunity issues this had focused on sex and race and had not included ‘disability’.

At the operational level the system in place appeared to be supportive of those employees who had sustained an impairment as a result of work while at the company. There had however been no formal training to line management or peer group on disability or the issues surrounding it. This partially supported the Chief Executives view that the company was a very paternalist one and cared for its staff.

5.6.19 Provision of non-verbal communication mediums

Under the Safety Sign Regulations 1996 all signs must be suitable and sufficient and comply with the regulations. All signs within the workplace were large and visible to most people. Although there had been some alterations to the workplace for disabled employees they had been carried out on an adhoc basis and the users reported they did not really meet their needs. It was reported that this was no fault of the organisation as some form of consultation took place prior to initiating the work. On probing further it emerged:
The final cognitive aspect to be explored was the manner and methodologies used to resolve problems associated with HSW aspects of the disability paradigm.

5.6.20 Problem resolution

In terms of dealing with general HSW issues and problems which arose the company excelled. They used all the available tools from TQM to operate improvement teams on specific issues. HSW had been used as a pilot for the improvement teams at the onset of the programme. They had applied these tools to the collection of accident data, the investigation of accidents and process changes. However with regards to HSW issues and disabled employees it would appear that when issues arose they were dealt with in a methodical and intelligible manner but it would appear from exploring the available documentation they never really reached a satisfactory result for the individual. Problems were dealt with primarily by line management or through the appointed safety representative. However as previously ascertained, for a number of reasons disabled employees did not have access to the safety committee process and thus adequate consultation provisions were absent. On further probing it was perceived by senior management that there was not really a problem with the safety aspects of disabled employees. This was not however the perception of the disabled employees. Many reported to feeling there were a number of issues they wished to raise but were never afforded the opportunity in the right climate. This was surprising as the organisation was very open.

In most instances it would appear that problems were never really resolved formally. Also of relevance for the disability paradigm was the fact that no formal corrective action target date were noted for specific actions, all were documented as 'ongoing'. Once again this was out of context because in most other cases it would appear that the safety committee was quite effective and well managed. On further exploration it emerged that
5.6.21 Summary of case study unit 'A'

Therefore as illustrated in table 5.5, from this case study unit, it could be deduced that the actual responsibility for the occupational health and well being of employees who were disabled or impaired was multifactoral. The span of control was divide between HR, safety, line management and occupational health. The HR manager identified with equalities issues while the occupational health department appeared to remain completely impartial and indicated they could not provide a definitive decision on any
## Chapter Five

### Table 5.5 Disability paradigm case study unit 'A'

<table>
<thead>
<tr>
<th>SMS Aspects</th>
<th>Sub Aspects</th>
<th>Sensory disabled</th>
<th>Physically disabled</th>
<th>Responsibility</th>
<th>Barriers</th>
<th>Information sources</th>
<th>Remarks</th>
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<td>HSW Ab. Equality only</td>
<td>(4) (-) (1)</td>
<td>(4) (-) (1)</td>
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<td>access/font/distance</td>
<td>Ab</td>
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<td>(3)</td>
<td>Lib/Supervisor</td>
<td>access/font</td>
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<td>Accident reporting</td>
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<td>2 never report Stg.</td>
<td>L&amp;D/Sup (Stg)</td>
<td>Org. culture</td>
<td>Ab</td>
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<td>Work Conditions</td>
<td>Ab.</td>
<td>Ab.</td>
<td>Sup/Fac</td>
<td>Cost implications/Knowledge</td>
<td>POWER/WPR.</td>
<td>Information available but not to those in need</td>
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<td>Provision of Lift unit</td>
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<td>n</td>
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<td></td>
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<td>HS&amp;E</td>
<td>Attitude/Perception</td>
<td>DLF/</td>
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<td>COSHH</td>
<td>No provisions at all even though Hazardous chemicals were used daily</td>
<td>main aspect spillage control, no procedure(-)</td>
<td>HS&amp;E</td>
<td>Knowledge</td>
<td>HSE</td>
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<td>DSE</td>
<td>***Type talk</td>
<td>Lowered workstation</td>
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<td>n</td>
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<td>standard (+) (3) poster</td>
<td>HSW (-)</td>
<td>distance/loss of illumination</td>
<td>EMAS identified operationally unsound</td>
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<td>Abs</td>
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<td>Communication/attitude</td>
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<td>Line management</td>
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<td>step TU involvement</td>
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<td>Ab&gt;</td>
<td>Ab&gt;</td>
<td>Knowledge</td>
<td>n</td>
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5 - 210
Table 5.5 Cont.  

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<td>facilities</td>
<td>knowledge/communication</td>
<td>Ab (*)</td>
<td>informal</td>
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</tbody>
</table>

**KEY**
- User assessment **-** = very effective, * = effective, ++ = mixed effective, - = ineffective, >> formal > informal
- User refers to 1 = often 2 = sometimes 3 = occasionally, 4 = never
- Availability 1 = never 2 = sometimes 3 = always
- Researchers view as adequate * inadequate, ** adequate ** best practice  Ab = Absent  n = no direct involvement

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individual as each was different. Equally it was felt the department's role was to protect the employer from corporate litigation rather than the employee. No corporate policy had been formulated to define these roles. The most significant pattern to emerge was the difference in perception between disabled employees and senior management. Broadly speaking sensory impaired employees were less well provided for than physically disabled. All reported they had never read or had brought to their attention the policy and were unaware of their duty or the employees' duty under the HSW Act. Of equal importance was the level of responsibility broadly placed on line management but these were the actors who emerged as having the least knowledge of the disabled paradigm and who communicated least with the target group. The organisation safety manager was the 'competent person' for HSW but once again did not feel competent to make decisions on disabled employee's safety precautions.

In terms of communication it emerged that there were two processes in operation, one which was 'formal' and constituted the organisation's ability to meet its statutory duties. A second 'informal' process had been developed and controlled by the actors. A similar pattern emerged with regards to levels of responsibility.

5.7.1 Case study unit 'B'

Company B was a large engineering company who described themselves as a market leader in the engineering sector of components. They were a family business with over 500 employees, distributed over seven sites in the North of England. The organisation operated on a decentralised basis with a head office for administration and personnel functions. They did not follow any quality improvement programme as the MD believed they were not financially productive. Notwithstanding this, they had in fact attempted BS 5750 (now ISO9000) registration for the manufacturing sites but found it too paper and resource intensive. At that stage it was reported clients were not requesting it as precursor to contract acquisition.
5.7.2 Strategy development and goal deployment

As part of its corporate policy the company developed a statement indicating:

"We are a progressive company who wish to be sustainable, invest in our people and grow as a market leader in the manufacturing industry"

The company visualised its role as very much part of the community and as such valued its staff. This value judgement was realised through a number of corporate initiatives such as investors in people (IIP) and community networks etc. The company's strategy focused upon production and meeting corporate targets. Overall the company saw itself as a hard engineering environment which it perceived as the key to its success. Revenue was estimated to be in excess of 3 million per annum and still growing.

The company developed a form of strategic plan comprising a short term business plan of three to five years and a longer term strategic plan of ten years. Communication of the plan was always provided to shareholders prior to deployment and corporate objectives set at each level of the organisation. Critical success factors and result areas had not been corporately developed but there was a documented structure of how the company objectives were to be achieved. Over the last five years much capital investment had taken place mainly in computer numerical control (C-N-C) machinery. Overall this allowed a reduction in the number of operators and subsequently the wages bill.

5.7.3 Process management and measurement

The organisation operated on a 'process production' basis and 'cellular manufacturing'. The company comprised of an MD, HR Director, Production Director and a number of other functional directors. A single management layer existed, who in turn were supported by supervisors and leading hands. Relatively speaking the company had a very flat structure. Processes within the organisation were decentralised with many services
being directly provided by the HQ.

The organisation's external drivers existed principally from the automotive industry who set quality standards for the manufacture/engineering of components. As a result of this supply chain pressure improvements had been seen in both quality of component and management processes. This in turn had been reflected in improvements in both health and safety and environmental performance.

5.7.4 Safety management system

The organisation had a formal safety management system (SMS) which it considered adequate for its purpose. It had a semi-dedicated safety manager (SM) who also acted as facilities manager. He reported directly to the Director of Personnel Management (Human Resources) who held the budget for health and safety. The SM had a number of direct reportees who acted in the roles of fitter, maintenance and health and safety officers. Although the safety manager held the NEBOSH Diploma his team held no formal health and safety qualifications. This it was determined was down to the cost of training. Strategically, the SMS framework was included within a manual comprising the policy, arrangements and organisational structure related to HSW.

5.7.5 Policy document

To meet the policy element of its duty under the HSW Act the company had employed a consultant to develop and deploy its policy to the whole company. As a process this had taken a year to complete and included the training of all staff in the content and application of the policy. The policy document itself consisted of an expanded statement of intent, followed by a set of policy and procedures for each of the individual process functions undertaken by the organisation. The statement contained the following:

The Company has the maintenance and improvement of Health, Safety and Environmental standards as one of its declared objectives. It is resolved that all necessary measures shall be taken, as far as is reasonably practicable, to secure the health, safety and welfare of its employees in their place of work and to protect persons other than employees against risks to their normal health and safety which may arise from work activities at Company premises and clients' sites. It will use the best possible environmental practices in its
manufacturing and installation activities, and promote the recycling of materials.

In particular the company will:-

(a) provide and maintain safe and healthy working conditions taking account of any legal and semi-legal requirements.

(b) provide instruction, training and supervision to enable employees to perform their work safely and efficiently.

(c) make available all necessary safety devices and protective equipment and supervise their use.

(d) maintain a constant and continuing interest in health safety and environmental matters applicable to the Company's activities in particular by consulting and involving employees and their representatives.

(e) improve the environment through its products, processes and services by reducing waste and encourage recycling.

It is the duty of all employees to exercise personal responsibility for their own health and safety and that of others who may be affected by their work activities. The support of all employees is required to ensure the success of the Company's Health, Safety and Environmental Policy.

Overall the policy followed similar lines and format to that of case study unit 'A' with procedures which were very comprehensive and contained much valuable information. However on further exploration it emerged that the full policy document or manual which consisted of 230 pages was retained at the HQ with only the statement of intent and the responsibilities being cascaded throughout the organisation. This presented many practical problems.

The policy document explicitly placed the responsibility for employee health and safety on the line management function. This cascaded throughout each layer of the organisation and was written into the structure of the individual job description. As with case study unit 'A' the organisation opted to use a single extract from the Act to set out the specification of the individual responsibility.

5.7.6 Policy deployment -responsibility.

The policy document set specific levels of responsibility, in line with current guidance. In the main, levels of responsibility were allocated to Directors, Senior Managers, Supervisors, Leading hands, employees and the SM. Directors were allotted the overall responsibility for developing the policy and ensuring sufficient resources were made available for the objectives of the policy to be met.
5.7.7 Line management responsibility

Line managers were responsible for deploying the policy document and ensuring that at the review process the requirements met the needs of the department. Although each line manager was responsible by virtue of the policy, their individual job description did not allude to this. Furthermore although most had been provided with a copy of the company policy, very few admitted to actually reading it. On further questioning most line managers felt that they did not have 'sufficient time' to do the safety officer's job. This phenomena was further explored by more probing questions. In response to the question, 'Who should be responsible for health and safety?' two thirds felt that it was 'the safety officer's job to make sure their staff were abiding by the rules'. This was particularly evident from the production manager who commented:

'It is not one of those performance targets that my salary is judged against, so I don't have time to do it'

Overall it was concluded that although line management had undergone a brief training session the dominant culture was that health and safety was the responsibility of the safety manager. At no time during any of the interviews or open discussions was welfare raised. On prompting, many senior management failed to realise legislation existed governing welfare facilities or specific risk assessment of individuals should they be at special risk.

Broadly speaking line management felt that it was not their responsibility. Equally when asked 'have they ever discussed HSW issues with your employees, who are disabled?' a common response was 'I would not know what to say... I am not qualified to discuss things of that nature', 'If I approached him about safety he would think I am trying to get rid of him and he would be right on to the union' These emerging findings would support results obtained in chapter three and four where low levels of trust were reported by disabled employees towards management and vice versa. Organisationally
this presents a 'block' or barrier to effective functioning of responsibility.

During the case study analysis responsibility routes were explored for the HSW of disabled employees. Once more a similar pattern emerged as to corporate safety. Two thirds of all line managers felt that it must be the responsibility of the safety manager. The other third felt it must be the responsibility of occupational health. Personnel equally perceived that due to the nature of the 'problem' that specialist advice must be sought. However when probed further there was a lack of understanding of what degree and type of support or specialist advice was available. This pattern emerged consistently throughout the personnel department.

5.7.8 Individual employees -responsibility

Individual employees were made responsible for 'the safety of themselves and others and specifically for obeying safety rules. These rule sets were included within the general statement of the policy and individual safe working procedures. They were also responsible for reading and following them. The policy included the disabled but in a number of cases they were not afforded the facilities to interpret the documented responsibility structure.

5.7.9 Safety manager -responsibility

The safety manager was specifically responsible for the co-ordination of all issues relevant to health and safety and to provide management with the advice necessary to meet their functions under the company's health and safety policy. The corporate safety manager when asked, 'What do you feel your role is regarding disabled employees and their safety?' replied, 'I feel my role is to support senior management in meeting the requirements of the HSW Act'. It was felt that the Safety department's principal purpose was to provide support to management on issues related to HSW compliance. It was not felt that staff should be directly involved in the operational activities of:
'doing management's leg work... It's their responsibility to take care of their own staff.'

From above it was clearly the case that the dominant culture was not management led but more abdication of responsibility.

5.7.10 Organisational responsibility

Once more after initial exploration of the responsibility and control dimensions of the disability paradigm a pattern was emerging of key players. From the corporate documentation provided and the review process these included, human resources, facilities, safety and occupational health. To draw on the emerging findings of case study unit 'A' and produce further support for the study findings each was interviewed in isolation and a 'departmental purpose analysis' (DPA) carried out.

5.7.11 Personnel management - responsibility

The PM function was located at a separate site to the operations unit. When interviewed the PM manager felt the purpose of the department was 'to provide support to senior management on PM issues'. Included within this category were aspects of pay and conditions, recruitment and sickness absence payments. Further probing revealed the department were responsible for pre-employment screening and the staff selection process. It transpired the department had been involved with the recruitment of a number of disabled employees. It also emerged answers given by the manager that when asked 'Who had made the decisions on health and safety issues at the recruitment stage?', 'it had never been an issue at the recruitment stage as they had an open opportunity policy. If the pre-employment medical questionnaire highlighted a problem then occupational health would notify them'. Much concern was in evidence regarding the Disability Discrimination Bill, (now the Disability Discrimination Act 1995) as at the time of the study it was going through the House of Commons. Human Resources perceived
their role to be very much employee relation and particularly discriminatory based.

5.7.12 Facilities

The last department allocated responsibility for specific elements of the company's health and safety was the Facilities department. In this particular instance they were responsible for all elements of planned and preventative maintenance. Planned maintenance was computer activated and include disabled employees' workstations and wheelchairs. Although the company had installed a ramp for the disabled employees with mobility problems, during the discussion it emerged that it was too steep to be used without assistance see figure 5.5.

Figure 5.5 Disabled ramp
In one instance the maintenance worker had made substantial alterations to a five pronged chair so that it was more comfortable for the user and in another workshop a jig had been adapted so that a person with only one hand could operate it. In both instances these adaptions had initially been initiated through the request of peer group employees (work colleagues) via an informal communications network. Other examples of alterations that had been made included the lowering of a workstation to meet the needs of a wheelchair user (see figure 5.6).

Figure 5.6 Adaption to a disabled persons workstation.

The first adaption presented little problems however no ergonomic assessment had been carried out and from the researcher's limited ergonomic knowledge it appeared it would require further alterations for it to be ergonomically suitable for the operator. Other adaptions carried out by the facilities departemnt included the building of a ramp (no side protection) approximately 600mm in depth and a locating board for a blind employee. A further alteration to a work station included the provision of a comfortable chair for
a mobility impaired employee. However as illustrated below this caused additional problems. The employee in question sat next to an injection moulding machine which produced 111 dB 'A' at source. This particular employee did not have an auditory impairment (see figure 5.7).
In summary, Table 5.6 illustrates a common pattern of key actors and levels of allotted responsibility for organisational HSW. Both organisations had policies on HSW which were well documented. The next phase was to briefly explore the aspects of performance in these areas and ascertain whether they reflected the performance measurement of the companies' SMS.

5.7.13 Health and safety performance measurement

As reported previously, health and safety was not included within individual line managers' job descriptions and it was not part of individual performance targets. Performance measures were nevertheless set at the strategic level by the Director and impacted upon line managers. These were the basis for performance-related pay. They did not include any measurement of safety-related aspects. Each Directorate, however, was measured on its overall performance by a structured third-party audit. This took place on a biannual frequency and was reflected in the Directorate's overall rating for the period. A small number of the categories were weighted to better reflect organisational performance and commitment. Out of a maximum rating of 10, safety scored 6, which to a degree demonstrated corporate commitment to meeting its duty of legal compliance. These can be determined to represent critical success factors at the corporate level.

5.7.14 Accident ratios.

Corporately, the organisation set performance trigger levels where it would direct finance or resources to mitigate any corporate loss. For HSW, this was set at any exceedence of national HSE accident statistics. The level of acceptable performance was identified by benchmarking against the HSE's acceptable rate of 1:100,000. Again, this emerged as a common pattern from the previous case study.
# Chapter Five

## Table 5.6 Existing HSW System: responsibility case study unit 'F'

<table>
<thead>
<tr>
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<td>Stg</td>
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<td>@***</td>
<td>Stg</td>
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<td>Ad</td>
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Key: System extent: Stg. Strong, Ad. Adequate, Wk. Weak; Ab Absent; System Effectiveness: ++ very effective, + effective, - mixed effectiveness, - ineffective,
Supporting conditions: **** strong, *** Adequate, ** weak, * control issues < Tim not adequate time < res not adequate resources @ action required # decision making role

X = present/involvement  n = non direct involvement
Chapter Five

5.7.15 Communication networks and the paradigm of disability

The next phase was to ascertain the information which was communicated within the organisation to disabled employees regarding health and safety. In building on the previous case study findings it emerged many similar methods to communicate information on HSW were used such as the policy document, procedures, notices and memoranda. It emerged that the most frequently utilised method was the Safety committee set up under the 1977 regulations.

5.7.16 Safety committee

The organisation had an active trade union membership, union elected safety representatives were very powerful and utilised all the powers afforded them under the statutory provisions. This included quarterly inspections, and direct access to all literature relating to safety. Direct access was available to OSH Rom, a CD based information line and HSE literature. Properly elected safety representatives were incumbent in each of the organisation's four sites. Each had received training via the TUC two week course and felt competent to act as the employees' representative. As a group they met on a quarterly basis to discuss details and 'work out the battle plan'. On further probing of both management and TU representatives it emerged that senior management resented the interference of the representatives and saw them as 'blockers' to the smooth running of the production process. As a result this reflected in an information barrier. Management made concerted efforts to prevent representatives from accessing certain sources of information. This was surprising when reflecting on information on safety and health that was available throughout the organisation. Three health and safety journals were subscribed to, as was the updating information provided by the EEF. Overall no evidence could be found which afforded the committee the ability and knowledge to make objective decisions on disabled employees. This was particularly relevant when consideration was given to what constituted so far as is reasonably practicable (SFARP) and statutory compliance.

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Operationally the committee was chaired by the production director who in turn briefed the MD. After reviewing three years of safety committee minutes it was concluded the committee was not as effective as was perceived by the organisation. Out of the thirty-six minutes reviewed, content analysis picked up the words 'awaiting further information' 76 times and 'no further action required' 35 times. Of these however it was concluded that on only seven of these occasions had a satisfactory result been reached that would meet the statutory requirement of SFARP.

One particular incident which arose included a visually impaired employee who knocked a contractor from his ladder causing him to break an arm. On exploring the perceived reasons behind the accident and the failings of the committee mechanism it emerged that most centred around personality traits and resultant group dynamics within the committee. The production director was reported to be 'a bull in a China shop', authoritarian and to lack knowledge of the production process. It was concluded that group dynamics and individual management style were important factors in the disability paradigm. A similar pattern emerged regarding the representation of disabled employees. Using a form of path analysis it emerged that no direct representation mechanism existed for the 24 disabled individuals employed within the organisation. Once the meetings had concluded, minutes were drawn up and distributed to both members of the operational committee and the higher policy committee. One additional copy was placed on the safety notice board but it was produced in small print and situated at a height of 2 metres in a glass cabinet. It was reported by disabled staff that in effect this ensured that both the partially sighted and those who were wheelchair bound could not see them. This was once more a recurring pattern at the case unit and cross case level.

5.7.17 Safe working procedures

Safe working procedures were included within the policy manual. For those who were physically disabled this presented little difficulty apart from access and in some instances compliance. However for the three employees who were sensory impaired this presented
a significant issue. One who was blind had never attempted to read them and two others who were partially sighted claimed that they had never read them as the print was too small. Emergency procedures and all other safety precautions were included within the policy document and as such these individuals were unaware of the company's policy regarding their responsibility to themselves or other employees. No written procedure was in place to communicate such information to the individuals which was a statutory duty.

Team meetings were also used as a mechanism for communicating health and safety information. In most instances this appeared to be a very effective process, however when related to disabled employees in some departments it was not ideal. For instance physically disabled could not, in many instances access team meetings. However in other departments elements of best practice appeared. One such best practice entailed one supervisor who would precis the salient points and E-mail them to employees who had impaired hearing and visual impairments. The employee with impaired sight was provided with a text reader which enlarged the font on his machine to 40/60 and the hearing impaired employee was provided with an induction loop within the office environment specifically tailored to his hearing aid. Once more this was an informal system adopted by the good will of the line manager. The individuals concerned had been working together for over twenty years, something which again emerged as an important factor/variable.

5.7.18 Notice boards

The workforce were informed of accident trends by way of a notice board at the front of the reception desk. These were maintained by collaboration between the 'personnel' department and the safety manager. These were updated monthly via a very comprehensive and well administered reporting system. Safety signs were also used throughout the company and in each department. The company had a comprehensive...
Chapter Five

Table 5.7 Existing HSW communication system: case study unit ‘B’

<table>
<thead>
<tr>
<th>medium</th>
<th>Director</th>
<th>Departmental</th>
<th>Senior mgr.</th>
<th>Line mgr.</th>
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<th>Human resources</th>
<th>SM</th>
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**Policy**

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<th>mixed feelings 3</th>
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<th>most felt they did understand 3</th>
<th>don’t really understand my duty 4</th>
<th>understand 4</th>
<th>I should do after ten years</th>
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<th>2</th>
<th>8/12 understood it</th>
<th>8/12 didn’t understand &gt;3</th>
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<td>X</td>
<td>X (+++) 3</td>
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<td>N+4</td>
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<td>Ab</td>
<td>Ad</td>
<td>Ab</td>
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<td>?</td>
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<td>It’s under HSW</td>
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<td>Top shelf</td>
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<td>Others responsibility</td>
<td>Others responsibility, some info</td>
<td>Equal Opportunities</td>
<td>Company OSH KOM</td>
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Access

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<td>+</td>
<td>n</td>
<td>++ Sig use</td>
<td>+</td>
<td>-</td>
<td>-</td>
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</table>

HSW Committee Access

| N/A | X | X | X | X | X | X | n | X | X | Ab |

HSW Committee membership

| N/A | X | X | X | X | X | X | n | n | n | n | Ab |

HSW Consultation

| n | n | n | n | n | n | n | n | n | n | n | Ab |

Risk Assessments

<p>| n | n | n | n | n | n | n | n | n | n | n | Ab |</p>
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<td>Sg.</td>
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**KEY:** System extent: Sg. Strong, Ad. Adequate, Wk. Weak, Ab Absent. System Effectiveness: ++ very effective, + effective, ± mixed effectiveness, - ineffective. Supporting conditions: **** strong, *** Adequate, ** Weak, * Control issues - if no not adequate resources: @ seldom required, # decision making role user referral: 1 often 2 sometimes 3 occasionally 4 never X = involvement n = no direct involvement

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traffic system which included elements specifically tailored for mobility impaired employees and visitors. This specifically included widening of doorways and gates and operational arrangements such as job rotation and reduced hours. One example of this practice included an employee identified as suffering from epilepsy. The employee was moved from operating machinery and placed in the administration department and was allowed to increase his hours to compensate for the loss of pay.

5.7.19 Problem resolution

Once more a common pattern emerged, that many of the problems arising from an individual's impairment related to the socio-organisational aspects of safety. Much focused upon deficiencies with the existing communication networks and the absence of policies or rule sets which clearly set out those areas where problems may arise and how to deal with them. In general although decisions were made the mechanisms to achieve these decisions appeared to be very informal, unstructured and adhoc. Although formal systems were in evidence for the recruitment and selection of disabled employees, these were very much concerned with the equalities issues rather than the actual competency or ability of the individual concerned. No formal mechanism existed to resolve issues regarding health, safety or welfare issues related to disabled employees. At the recruitment stage Personnel dealt with the entire process and made any necessary decisions. No other departments were consulted as a matter of course and in many instances decision making powers were delegated to quite junior staff. In all instances no PEP had been drawn up and reliance was very much on the informal responsibility/communication network being effective.

5.7.20 Summary of case study unit 'B'

The health of disabled employees was seen as the responsibility of everyone. Although there was no policy document to indicate levels of control or responsibility there was a
common understanding that facets of recruitment were a Personnel issue. This was supported by a documented procedure dictating all employees who were employed would be subjected to a pre-employment medical and should a problem be identified the department would be informed and take appropriate action. There was no consensus as to what the appropriate action was, apart from relating to discrimination factors. The dominant culture that existed within the HR department was once more very much focused on the equalities domain. Although training on equalities issues had been carried out and was seen as a key performance area it was restricted to ethnicity and sexual harassment. There was no emphasis on process development or training for either disabled employees, line management or peer group members. Once more a pattern emerged that formal systems for the safety management of disabled employees were absent but were evident in an informal manner for disabled employees.

The communication network and system emerged once more as the area of greatest concern for the disabled. The inter department network was less well developed than the previous organisation and a lesser degree of empowerment was in evidence during the decision making process. This was in evidence throughout the organisation but appeared much greater for disabled than non-disabled employees. They reported to feeling isolated and not able to access the decision making process within the safety committee structure. Although some elements of best practice were in evidence much of this was due to group dynamics and personal relationships and not at as a result of strategic planning.

In broad terms no formal management system was in place to deal with the legal aspects of the HSW Act and the disability paradigm. There were as with the previous case study units many informal systems which were in evidence.
Chapter Five

<table>
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<th>Table 5.8 Disability Paradigm case study unit 'B'</th>
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<tr>
<td>Accident reporting*</td>
</tr>
<tr>
<td>Work Conditions*</td>
</tr>
<tr>
<td>Specific</td>
</tr>
<tr>
<td>FEP*</td>
</tr>
<tr>
<td>COSHH*</td>
</tr>
<tr>
<td>DSE***</td>
</tr>
<tr>
<td>Posters</td>
</tr>
<tr>
<td>Committee representation</td>
</tr>
<tr>
<td>RA</td>
</tr>
</tbody>
</table>
Table 5.8 Cont.

<table>
<thead>
<tr>
<th>Information</th>
<th>Ab +1</th>
<th>visible criteria, e.g. departmental assessment of number of days without loss time accident (Q) +1</th>
<th>access to information denied (Q) +1</th>
<th>line mgt allocated responsibility/knowledge Ab</th>
<th>Organisational access to information not readily available</th>
<th>sig rTU involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competent persons</td>
<td></td>
<td></td>
<td>n</td>
<td>Knowledge</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Problem resolution</td>
<td>Sig. Informal +</td>
<td><strong>+</strong></td>
<td>*(+)</td>
<td>all staff but informal (-)</td>
<td>communication/technical/organisational aspects</td>
<td>n</td>
</tr>
<tr>
<td>Physical environment</td>
<td>Sig. +</td>
<td><strong>+</strong></td>
<td>**</td>
<td>Facilities</td>
<td>Financial/knowledge</td>
<td>n</td>
</tr>
</tbody>
</table>

KEY: User assessment  ** = very effective, + = effective, + = mixed effective, - = ineffective, >> formal > informal
User refers to 1 = often, 2 = sometimes, 3 = occasionally, 4 = never
Availability 1 = not, 2 = sometimes, 3 = always
Disabled view as to adequacy  * = inadequate, ** = adequate, *** = best practice Ab = Absent; no direct involvement

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5.8.1 Case study unit 'C'

Case study unit C contrasted units A and B in that it was a large retail sector organisation. It considered itself a sector leader holding a major share of the UK market. The company predominantly retailed food but over the years had branched out to include clothing and household commodities. It followed a TQM philosophy and had done so for over five years.

5.8.2 Strategy development and goal deployment

As part of corporate policy the organisation developed a mission statement indicating:

'We are committed to creating an enduring food retail business. We aim to be a leader in our industry, we serve our customers, we value our people, we work in partnership with our suppliers, we participate in our communities, we support our industry and we reward our shareholders.'

The company visualised its role as very much part of the community and as such valued its staff. This value judgement was realised through a number of corporate initiatives such as IIP, community networks, quality circles and empowerment groups. The company's strategy was focused upon customer satisfaction and a quality product at an affordable price. The company handbook explained this philosophy to all new employees.

'Customer service is the hallmark of the company's excellence. Without customers there would be no jobs for any of us and therefore the customer is our most important person.'

The extract above engendered a corporate feeling of customer care and focused upon the imperative that customer satisfaction was the organisation's goal. Team goals were also used very much in the descriptive introduction to new members/employees. The mission has been translated into a number of what the organisation saw as key areas of success. The key areas were subsequently developed into a strategic plan which was then turned into a five year business plan. The business plan was developed at corporate level.
and influenced by the criteria of customer and employee satisfaction. Many feedback loops existed within the organisation providing both qualitative and quantitative data which was subsequently used as part of future business plan development. Once the business plan had been formulated it was then agreed with shareholders and key performance targets and criteria put in place to provide support. The business plan included the deployment of critical success factors such as:

- improve market share
- develop customer relationships
- develop staff potential

These were realised through a process management system driven by regional and area Directors, Regional managers and Store managers. This systems approach spread throughout the organisation's 13,000 employees.

5.8.3 Process management and measurement

Processes within the organisation were decentralised with many services being directly led by the Head Quarters (HQ) and processed at store level. Processes within the organisation were managed by line management who had the authority to carry out all tasks that may impact on safety or profitability. For instance they were able to alter price schedules if it was felt the organisation would benefit in the long term.

This was a very fast moving reactive management system, driven by consumer demand i.e. customers on one hand and hard line senior management, focused on meeting financial targets, on the other. One manager was heard to say 'at all costs'.

The company's external drivers included its own performance management system, driven by the key performance criteria set at corporate level which cascaded throughout the organisation. The corporate approach was very much centred around using the customer and key competitors as the benchmark for its product line successes and
failures.

The company realised its objectives at the individual level by the adoption of what it called its ten commandments. The ten commandments of the organisation were developed within the HR department and set out to ensure a system of personal interrelationships. Ostensibly they were based on improving organisational communication at the operational level. The commandments included:

- Speak to people
- Smile
- Call people by name
- Be friendly & helpful
- Speak & Act
- Be genuine
- Be generous
- Be considerate
- Be thoughtful
- Be willing.

These were then integrated with the seven golden rules of service defined as:

- Smile, greet and thank customers
- Ask "Can I help you?"
- Familiarise yourself with your store
- Everyone deserves courtesy and politeness - customers and colleagues
- When customers cannot find something - take them to it
- Always be smartly dressed as per Company Policy
- Your customers are the most important people in the store

5.8.4 Corporate culture

The corporate culture focused on the operational ability of store managers of which there appeared much variation. One store manager said, 'he felt as though his main objective was to get promoted as quickly as possible and the way to achieve this was to get more work out of people'.

His approach to management was very autocratic. He was a product of the company's fast stream management system and felt that people did not really matter unless something went wrong. It was corporately accepted that staff would only remain with
the company for a few years and then move on. 'Any way - most of our employees are part time women or college students'.

5.8.5 Safety management system

The organisation employed a corporate 'Food and Health, Safety Group'. The primary role of this was the co-ordination and liaison with Environmental Health Officers regarding enforcement action under both the Food Safety Act (DOH, 1990) and the HSW Act. The management performance drivers for this unit centred solely on the reduction of enforcement 'Notices' served by Environmental Health officers, evasion of prosecution and the prevention of poor publicity. The organisation as a whole had invested a considerable sum of money in the setting up of such a group including a representative at board level. Also included was a fully funded occupational health department which had a trained occupational health physician and a number of occupational health nurses. The Director of the 'Food Safety and Health Group' was the line manager of the occupational health department.

5.8.6 Policy domain

The organisation had a very comprehensive policy document which was integrated within the organisation's quality system. The policy stated:

'It continues to be the policy of the board of directors of the company to ensure so far as is reasonably practicable the health, safety and welfare of all employees when at work. Equally we accept a similar responsibility for other persons who may visit our premises in the furtherance of our business'.

'In particular we recognise that it is the responsibility of managers at all levels to prevent personal injury. This is achieved by providing a safe working environment and effective training and supervision in the company's systems of work, especially machinery and other equipment in use. A fully detailed safety policies and procedures manual is published separately. The safety department are always available to answer any queries'.

In fact it was referred to as the 'Quality Safety Manual'. The manual was very comprehensive and included much information relevant to store managers, the objectives
of the company and how it set out to achieve these objectives. This manual was in effect one of the best identified during the study. Nevertheless, in terms of the organisation's safety management system it fell a little short, because once more it was held at the headquarters and not cascaded to individual stores in its full format. Stores received an extract which included the principal statement of intent and the levels of responsibility. There was an absence of how those tasked with responsibilities were expected to carry out that function.

5.8.7 Responsibility

As per previous organisations, responsibility for HSW was cascaded down through the management and supervisionary structure (see figure 5.8). Ostensibly the levels of responsibility included the Chairman of the Board accepting overall responsibility for all employees, with Regional Directors responsible for deploying the corporate health, safety and welfare objectives under their control. Under this level the responsibility fell to store managers. These managers, as illustrated below, were responsible for an assistant store manager or deputy manager, assistant duty managers and departmental managers. In addition they were responsible overall for the health safety and welfare of all shopfloor staff and members of the public who entered the store. To meet their statutory duty each level of management were provided with specific functional levels of responsibility under the Act. Predominantly however, much of the operational responsibility fell to the departmental manager or assistant manager.

Each level had undergone a specific training programme which purported to include health and safety. On probing individuals at seven stores it was suggested that this training was very limited in both content and application.
Corporately the responsibility for managing health and safety was with the store safety officer. These were selected officers from the store who were identified as having an interest in safety. However in a number of circumstances they reportedly had no interest at all but did not wish to indicate as such in fear of losing employment or promotional prospects. Specific tasks were allocated to employees such as COSHH checks, guarding checks and physical condition checks. These were carried out by way of a check list sheet.

5.8.8 Personnel resources

Personnel were once more tasked with all aspects of record keeping and recruitment. It appeared that at the store level the personnel manager made autonomous decisions as to the level of an individual's ability or disability. On further probing it appeared that due to the transient nature of the work especially during the Christmas and Easter period they had a partnership with a local disability group. As part of the partnership the group would supply disabled employees to work during these busy periods. Out of the total stores visited only one had had a visit from an external disabled provider. Although
outside the remit if this study a great many employees with learning difficulties were identified. Many of these appeared to be subjected to much worse conditions, regarding safety and welfare than those who were physically or sensory disabled/impaired.

The interrelationships between the personnel function and the safety officer were well grounded. Each had defined areas of responsibility and there appeared little conflict between the departments. Both reported to seeing the other as complementary. This was demonstrated through a corporate approach to a safety and personnel management meeting which included representatives from the safety officer, the training officer, personnel and staff side.

The personnel function carried out and administered all induction training which included a large element of safety, welfare and health. Each employee was provided with a handbook outlining the corporate policy, the company arrangements and key personnel such as first aiders and fire wardens. This was somewhat inaccurate as some of the individuals annotated had actually left the organisation. The staff turnover was reported to be quite high by the personnel officer. She suggested that 'this was the way it was in this type of industry'.

In operational terms responsibility for health and safety generally fell to the supervisory level. Unfortunately these worked on a shift basis and in most instances never actually knew the names of other employees or peers. This was reflected in a reduced level of informal processes or mechanisms in comparison to other case study units. This emerged as quite an important aspect of the organisation's control system. Due to the relationship or absence of it between peer groups there existed very little cohesion or positive group dynamics between disabled employees and their work colleagues.
## Chapter Five

### Table 5.9 Existing HSW system responsibility case study unit 'C'

<table>
<thead>
<tr>
<th>Existence</th>
<th>MD</th>
<th>Sen mgmt</th>
<th>Dept mgmt</th>
<th>Line mgmt</th>
<th>Supervision</th>
<th>Human Resources</th>
<th>H&amp;S</th>
<th>HSE (external)</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number interviewed</td>
<td>N/A</td>
<td>1</td>
<td>N/A</td>
<td>4</td>
<td>12</td>
<td>15</td>
<td>3</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Policy written</td>
<td>Stg.</td>
<td>(+)**</td>
<td>(+)**</td>
<td>(+)**</td>
<td>++</td>
<td>.-</td>
<td>.-</td>
<td>.-</td>
<td>+***</td>
</tr>
<tr>
<td>Statement of intent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signed by MD</td>
<td>Y</td>
<td>++</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Organisation</td>
<td>Stg.</td>
<td>-</td>
<td>++</td>
<td>(+)</td>
<td>(-)</td>
<td>(+)</td>
<td>(+)</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Arrangements</td>
<td>Stg.</td>
<td>++</td>
<td>Stg-Ad ***</td>
<td>(+)(-)(-)</td>
<td>Stg.</td>
<td>Stg.</td>
<td>Stg.</td>
<td>Stg.</td>
<td>act as co-ordinator</td>
</tr>
<tr>
<td>Defined responsibility</td>
<td>Stg.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Policy development Sys.</td>
<td>Stg. (+)</td>
<td>Stg.</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>some X</td>
<td>set corporate policy</td>
</tr>
<tr>
<td>Policy deployment Sys.</td>
<td>Stg. (+)</td>
<td>X</td>
<td>X</td>
<td>X(U)</td>
<td>X(U)</td>
<td>Stg.</td>
<td>Stg.</td>
<td>++</td>
<td>n</td>
</tr>
<tr>
<td>Policy enforcement Sys.</td>
<td>Ad.</td>
<td>n</td>
<td>(8) but n</td>
<td>n</td>
<td>n</td>
<td>Ad</td>
<td>X</td>
<td>advice</td>
<td>X</td>
</tr>
<tr>
<td>Role enforcement Sys.</td>
<td>Ad.</td>
<td>n</td>
<td>n</td>
<td>Ad-Stg.*</td>
<td>X</td>
<td>X(U)</td>
<td>Stg.</td>
<td>n</td>
<td>X-Stg.</td>
</tr>
<tr>
<td>Reviewing Sys.</td>
<td>Stg.</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Monitoring Sys</td>
<td>Stg.</td>
<td>n</td>
<td>n</td>
<td>X</td>
<td>Stg.</td>
<td>@***</td>
<td>Stg.</td>
<td>@ #</td>
<td>Ab</td>
</tr>
<tr>
<td>Performance targets</td>
<td>Ad.</td>
<td>set for HSW</td>
<td>set at HQ</td>
<td>set but n</td>
<td>X</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Risk Assessments</td>
<td>Stg.</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>overall responsibility</td>
<td>X</td>
<td>X</td>
<td>(8) **</td>
<td>audit</td>
</tr>
</tbody>
</table>


Supporting conditions: **** strong, *** Adequate, ** Weak, * National issues <we not adequate line <ins not adequate resources @ action required # decision making role

X = present/involvement n=no direct involvement

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5.8.9 Health and safety performance measurement

Performance measures were set at the strategic level by the Director. These dictated the pay levels for all managers and assistant managers. Limited strategic performance measures had been set for health and safety performance targets at the corporate level and subsequently they were perceived to be 'not very important' at the regional level. However as with other organisations a form of system management was adopted by the safety team. The central co-ordination team would on a regular basis audit individual stores for legal compliance and evidence of a 'positive safety culture'. The audit protocol was very much based on documentary evidence being in place rather than the actual performance of the safety management system. These included measures of accident frequency occurring throughout the organisation categorised into, over three day accidents, number of loss time accident and incidents which may incur a financial loss. Each store's overall performance measurement included safety performance at the operational management level. These were identified as the critical success factors for the organisation's safety performance. Performance measures had been set via a quality circle set up in 1993.

5.8.10 Communication/consultation

Due to the perceived paternalistic nature of the company it was felt there was no need to recognise a Trade Union. There was in its place a form of safety council which purported to act as the consultation mechanism for all employees. On further probing this appeared to be a very complex issue. In broad terms the company operated a day shift and a night shift. Staff on the latter would stack shelves and generally carry out specific functions that were not able to be carried out when customers were on site. Investigations concluded that of the forty disabled employees who were reported to be employed in the seven stores visited, thirty nine were on this shift. On probing further it was conveyed that this was possibly a commercial decision from the 'public perception' perspective. This presented a number of system difficulties. In particular the night shift had limited
access to a formal system of consultation and general health and safety provisions. On further probing it also emerged that although the reportable accident statistics were reduced during the night shift, staff described many minor accidents that had never been reported. This was particularly the case for disabled employees. This was surprising in view of the positive nature of the organisation's accident reporting system.

One best practice that emerged was the instance where the company had provided a large print document for a particular individual. In this instance the employee concerned was at management level and had a particular interest in elements of health and safety. He was partially sighted and used an adapted display screen which enlarged normal documents from small font up to 34 font. This acted as a very useful and effective method of disseminating the HSW information to those with visual impairments. However its use was restricted to the individual concerned. Once again a pattern emerged which indicated disabled employees were not provided with the necessary facilities to read the safety policy and related documents. To a degree the shift pattern appeared to have a negative effect on the group dynamics adding a further barrier to communication. Interestingly much emphasis was placed on providing disabled customers with specific hardware that could enable them to shop more effectively. These include mechanical wheelchairs, adjustable mobility trolleys and a bar code reader for customers who were partially sighted. Two examples of assistance provided are illustrated in figure 5.9 and 5.10.

5.8.11 Accident reporting

The arrangements for accident reporting were very comprehensive and well administered by the Personnel Department of the HQ. They also maintained all training records for the individuals at store level. This presented a number of problems when individual records were requested - e.g. for line management to peruse for safety reasons. As there was a high degree of internal movement between departments the organisation had developed
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Figure 5.9 Mobility trolley

Figure 5.10 Electric wheel chairs provided for customers
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a basic skills training card which followed the individual employee throughout their employment. This comprised an introductory element as part of their induction process and included ten aspects ranging from 'customer care', 'hygiene', 'price indication' and 'health and safety'. Figure 5.11 illustrates an extract from the card:

Figure 5.11 Sample of Basic Skills Training Card

<table>
<thead>
<tr>
<th>Listed below are your key areas of responsibility:</th>
<th>COMPETENCE ACHIEVED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Signature of</td>
</tr>
<tr>
<td></td>
<td>department manager</td>
</tr>
<tr>
<td>3. Health and Safety</td>
<td>Signature of</td>
</tr>
<tr>
<td>3.1 Use equipment provided within the limits of</td>
<td>Trainee</td>
</tr>
<tr>
<td>authority</td>
<td>Date</td>
</tr>
<tr>
<td>3.2 Carry out relevant procedures in the event of an accident</td>
<td></td>
</tr>
<tr>
<td>3.3 Carry out safe lifting and carrying procedures</td>
<td></td>
</tr>
<tr>
<td>3.4 Implement the control of substances hazardous to health (COSHH) regulations</td>
<td></td>
</tr>
</tbody>
</table>

These were then followed up by a second part of the card which included aspects of COSHH and dangerous machinery. The following figure is an abstract of the card:

Figure 5.12 Sample of Basic Skills Training Card (COSHH)

<table>
<thead>
<tr>
<th>COSHH</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have been trained in the use of the following substances and understand the precautions to be taken.</td>
</tr>
<tr>
<td>Substance</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

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The training cards for a random sample of disabled employees were reviewed and the individuals re-interviewed. In all cases of sensory impairment many assumptions had been made at the store level. Even though the relevant boxes had been signed and dated the interview revealed no understanding was present. For physically disabled employees one had signed and dated 3.3 on safe lifting and carrying procedures but due to his severe physical disability could not lift at all.

Other sources of communication included posters, memos and internal communications. However, as reported in previous case study units, these presented problems when used by visually impaired and some physically impaired employees.

As illustrated in table 5.10 (see following page) patterns were emerging both at the individual case level and at the cross case level. Particularly important was the informality of the communication network and the barriers that appear to exist both between departments and between individuals both disabled and non-disabled. This lack of communication may account for the perception of poor levels of social support reported by disabled individuals in previous chapters. In turn this results in elevated levels of coping strategies and ultimately isolation and non-reporting of accidents.
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### Table 5.10 Existing HSW communication system case study unit 'C'

<table>
<thead>
<tr>
<th>Area Director</th>
<th>Senior mgt</th>
<th>Dyrt. Mgmt</th>
<th>Supervision</th>
<th>Human resources</th>
<th>SM</th>
<th>Occupational Health</th>
<th>Employees</th>
<th>Disabled Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>14</td>
</tr>
</tbody>
</table>

#### Policy

<table>
<thead>
<tr>
<th>HSW understanding</th>
<th>good understanding of the Act</th>
<th>mixed feelings</th>
<th>don't really understand my duty</th>
<th>fully understand</th>
<th>limited</th>
<th>2</th>
<th>914 understood it</th>
<th>22/22 didn't understand &gt;3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Access information</th>
<th>X (+3)</th>
<th>X</th>
<th>X (+3)</th>
<th>N -4</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>at my office</th>
<th>notice boards</th>
<th>notice board</th>
<th>Abs</th>
<th>It's under HSW</th>
<th>Very good</th>
<th>not available</th>
<th>Handbook</th>
<th>No access</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Disabled</th>
<th>No knowledge, but we are good at that sort of thing</th>
<th>H&amp;S&amp;E</th>
<th>Others responsibility</th>
<th>Equal Opps.</th>
<th>Corporate manual</th>
<th>much information</th>
<th>N/A</th>
<th>various information on individual needs. At home/third party</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Procedures</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>n</th>
<th>via safety committee</th>
<th>Ab.*</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Access</th>
<th>Secretory</th>
<th>Ad-Stg.</th>
<th>Sig.</th>
<th>n</th>
<th>via supervision</th>
<th>Ab.*</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>HQ</th>
<th>HQ</th>
<th>HQ</th>
<th>HQ</th>
<th>HQ</th>
<th>HQ</th>
<th>HQ</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Posters</th>
<th>n</th>
<th>n</th>
<th>(+) n</th>
<th>n</th>
<th>(n)</th>
<th>(+)</th>
<th>(++)</th>
<th>(-)</th>
<th>--</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>HSW Council</th>
<th>n</th>
<th>n</th>
<th>n</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>Via SC.</th>
<th>Ab</th>
<th>Ab.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Access Membership</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>Stg.**</th>
<th>Ab</th>
<th>Ab.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Consultation</th>
<th>n</th>
<th>n</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>Ab</th>
<th>Stg.***</th>
<th>Ab</th>
<th>Ab.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Risk Assessments</th>
<th>X Stg.</th>
<th>n</th>
<th>Sig.**</th>
<th>(+) Sig.</th>
<th>n</th>
<th>Sig.</th>
<th>Ab</th>
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</table>

<table>
<thead>
<tr>
<th>Information</th>
<th>n</th>
<th>n</th>
<th>n</th>
<th>Wk.</th>
<th>sig.</th>
<th>(-- ) Wk.</th>
<th>n</th>
<th>Stg/Ad</th>
<th>Wk.(++)</th>
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</table>

<table>
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<tr>
<th>Induction</th>
<th>n</th>
<th>n</th>
<th>n</th>
<th>Wk.</th>
<th>sig.</th>
<th>(-- ) Wk.</th>
<th>n</th>
<th>Ad/Stg.</th>
<th>Ad(++)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Support(DIS)</th>
<th>n</th>
<th>n</th>
<th>n</th>
<th>Wk.</th>
<th>sig.</th>
<th>Wk.</th>
<th>Ad</th>
<th>n</th>
<th>Ad/Ab/Wk.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Trust(DIS)</th>
<th>n</th>
<th>n</th>
<th>n</th>
<th>sig/Ad</th>
<th>sig.</th>
<th>Ad</th>
<th>n</th>
<th>Ad.</th>
<th>Ab/Wk.*</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Communication (DIS)</th>
<th>n</th>
<th>n</th>
<th>Wk/Ab</th>
<th>Wk.</th>
<th>Wk.</th>
<th>Ad</th>
<th>n</th>
<th>Ad-Stg.</th>
<th>Wk/Ad</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>MOE</th>
<th>n</th>
<th>n</th>
<th>not aware</th>
<th>n</th>
<th>Ad</th>
<th>n</th>
<th>Sig.</th>
<th>Ab</th>
</tr>
</thead>
</table>

**KEY:** Key: System extent Stg., Strong, Ad. Adequate, Wk. Weak, Ab Absent System Effectiveness ++ very effective, + effective, +• mixed effectiveness, - ineffective, Supporting conditions: **** strong, *** Adequate, ** Weak, * Control issues <1 not adequate time < res not adequate resources @ action required # decision making role X= involvement n= no direct involvement

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5.8.12 Problem resolution

Problems regarding health and safety appeared to be resolved via a mixture of formal and very informal routes. At the local level it emerged that most health and safety issues such as MOE were resolved by an informal mechanism. Pressure was placed upon line managers to accept responsibility for the actions of his/her staff. Although this was the overall objective of Lord Roben's committee it was supposed to be supported by effective training, skills and knowledge. In many instances line managers reported that they felt they were not provided with the skills and knowledge to carry out the function of the HSW competent person with respect to the disabled. Once more this was a pattern that matched all case study units.

5.8.13 Summary of case study unit company 'C'

As illustrated in table 5.10 the health and safety of disabled employees was corporately seen as the responsibility of everyone. Although there was no policy document to indicate levels of control or responsibility there was a common understanding throughout the stores that any issues related to disabled employees were dealt with in the first instance by the personnel manager and secondly by the corporate personnel department at the HQ. At the HQ the department had its own director and was fully resourced. All officers were either on a training course or had already obtained corporate membership of the Institute of Personal Development. The department had a documented procedure in place that indicated all employees would be subjected to a pre-employment medical and a decision as to employment made after considering the medical officer's report. In terms of HSW provisions for disabled it was often reported that there was more in place to protect the customers than there was to protect the staff. Broadly speaking this appeared to be the case as far as senior management were aware. Once more there was little evidence of any formal systems or processes which specifically or generally catered for the HSW provisions of disabled employees. Many were restricted from accessing specific information on HSW particularly those employees who worked
on the night shift. Disabled employees employed on the night shift also reported to feeling more isolated and receiving less social support from line management than those who were employed in the day shift. This most probably reflected the decreased degree of group dynamics.

Although this study unit contrasted that of 'A' and 'B' there was little difference in the emerging themes consistent in the case study units. A pattern was emerging which suggested that a model existed within organisations to meet their statutory duties under the HSW Act. They were however absent and informal for disabled employees. One of the significant patterns that emerged from case study 'C' was the disruption to group dynamics that took place due to the shift pattern. In terms of differences between TQM and non-TQM a pattern was emerging that there were improvements in communication, performance measurement and data acquisition for TQM organisations. However these were not reflected in the provision for disabled employees.
## Chapter Five

<table>
<thead>
<tr>
<th>SMS Aspects</th>
<th>Sub-Aspects</th>
<th>Sensory disabled</th>
<th>Physically disabled</th>
<th>Responsibility</th>
<th>Baseline</th>
<th>Information sources</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number interviewed</td>
<td>8</td>
<td>14</td>
<td>2</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>4 &gt;</td>
<td>3 &gt;</td>
<td>LM/Super</td>
<td>knowledge/culture</td>
<td>Wk.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accident reporting</td>
<td>4 never report Srg., my fault</td>
<td>2 never report Srg., I would get the blame</td>
<td>LM(Srg)/Srv(Srg)/SHE &amp; E</td>
<td>Org. culture</td>
<td>Ab.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Conditions</td>
<td>same arrangements</td>
<td>Time given when necessary</td>
<td>Sup/Fac</td>
<td>economic implications/Knowledge</td>
<td>PUWER/WPR</td>
<td>Information available but to those in need</td>
<td></td>
</tr>
<tr>
<td>Specific</td>
<td>boards provided</td>
<td>ramps provided, trafficking system, gates, driven by facilities &amp; peer group</td>
<td>* no specific responsibility</td>
<td>understanding/access to information</td>
<td>not available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEP</td>
<td>Peer np&lt;</td>
<td>Peer np&gt;</td>
<td>HS&amp;E</td>
<td>Attitudes/Perceptions</td>
<td>not available</td>
<td>many manual handling issues</td>
<td></td>
</tr>
<tr>
<td>COSHH</td>
<td>No provisions at all even through Hazardous chemicals were used daily</td>
<td>main aspect spillage control, no procedure</td>
<td>HS&amp;E</td>
<td>Knowledge</td>
<td>SHE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSE</td>
<td>***Type talk</td>
<td>Workstations altered &gt;</td>
<td>Human resources</td>
<td>* perception/communication</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posters</td>
<td>standard (-)(-)</td>
<td>standard (+)(3)</td>
<td>line mgmt.</td>
<td>access/communication medium (-)</td>
<td>EMAS identified operationally unsound</td>
<td>EMAS very unsound</td>
<td></td>
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<tr>
<td>Committee</td>
<td>n/a</td>
<td>no representation at committee level</td>
<td>no representation at the committee level</td>
<td>HR / HEW / Supervisor</td>
<td>Communication</td>
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<tr>
<td>Representation</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>E.A.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.11 The Disability Paradigm - Case Study Unit C
Table 5.11 Cont.

<table>
<thead>
<tr>
<th>Information</th>
<th>n/a</th>
<th>visible criterion. e.g. departmental assessment of number of days without loss time accident</th>
<th>statutory position only</th>
<th>line mgt/HF/WT/ER.</th>
<th>extent/ins/ins/knowledge</th>
<th>sig. TU involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competent person</td>
<td>n/a</td>
<td>Ab.</td>
<td>Ab. &gt;</td>
<td>Ab. &gt;</td>
<td>informal only external</td>
<td>a</td>
</tr>
<tr>
<td>Problem resolution</td>
<td>n/a</td>
<td>&gt; (v) peer gp.</td>
<td>&gt; peer gp</td>
<td>line mgt.</td>
<td>culture</td>
<td>a</td>
</tr>
<tr>
<td>Physical environment</td>
<td>n/a</td>
<td>walkways, MOE</td>
<td>stairs, stairs/ workstations</td>
<td>line mgt.</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

**KEY**
- User assessment: + = very effective, = = effective, ~ = mixed effective, = = ineffective, >> formal = informal
- User refers to 1 = often, 2 = sometimes, 3 = occasionally, 4 = never
- Availability: 1 = not at all, 2 = sometimes, 3 = always

Researchers view as to adequacy: * = inadequate, ** = adequate, *** = best practice Ab = Abnorm no direct involvement.
5.9.1 Case study unit 'D'

Case study unit 'D', who had not adopted a TQM programme, was a large service sector organisation specialising in retail food produce and other household commodities. It was part of a corporate body with over 2000 retail outlets within the UK, employing over 12,000 staff. The company prided itself as being a leading provider of its services at the local level. Corporately this was demonstrated in its vision statement and business plan which both included the statement 'quality produce at your local convenience store'. In terms of corporate culture it was very similar to company C, with a five year business plan that cascaded into area and regional corporate objectives. Although the company could be termed mechanistic in its approach it nevertheless placed much management control at the local branch level. This included decision making power on all staffing and resourcing aspects of the business. Notwithstanding this, the corporate image was very important and as such certain guidelines were provided and audited by the corporate headquarters. During this case study seven stores were visited and the following is once more a composite of the common norms emerging from the interviews and time spent on site.

5.9.2 Safety management system

The company employed a system of national and regional health and safety staff consisting of a corporate level team of ex-EHO's who audited and provided advice on all issues of health and safety compliance to branch level. This corporate level team was responsible for the development of policy and its deployment to branch level.

As part of the HSE's campaign to ensure consistency in the way standards are enforced, a scheme of 'Lead Authorities' had been set up as a national initiative between the Local Authority unit (LAU), selected local authorities and selected industry groups. Such
schemes allowed for one local authority to act as the lead body or facilitator to individual companies. Primarily they dealt with corporate policy issues regarding interpretation of HSE and HELA guidance on enforcement issues. This company was participating in such a scheme and as such had participated in a review of its corporate safety management system by the regulatory authorities. As a result of this action and the subsequent dialogue a programme of improvements had been drawn up and was progressing well. As part of the review a number of issues had been raised regarding disabled employees.

5.9.3 Policy domain

During the case study selected key individuals were interviewed. These included the manager of the HSW co-ordinating team, the HR manager at the HQ, branch managers (daytime) and supervisory branch staff. The company had developed a corporate HSW policy document which followed a similar pattern to all other case study units. In addition, at the policy level the company had developed a document on the employment of disabled or impaired candidates. The policy was developed and deployed by the HR director and was administered under the banner of discrimination. Interestingly enough the company had recruited most of the disabled employees. This was in contrast to the engineering sector whereby most disabled employees appeared to be from existing employees. The content of the policy document focused upon the recruitment procedure to ensure the company offered equal access to all applicants. Within this policy document the company had included a statement which read:

'the company shall not be guilty of a breach of this policy if a disabled person may cause a breach of health and safety regulations'

When this statement was explored further and HR personnel interviewed it was found that there was little substance in its content. To the question, 'Can you provide examples of such a situation?' replies included:
'Well, I don't know' or 'I can't give you a specific example'
'I can't give an exact example but I know of someone who had a problem'

The company had a corporate policy which was supported by a two tiered system of organisational allocation of responsibility. At the first level regional directors were allocated overall responsibility for legal compliance with all statutory provisions which included health and safety and environmental issues. From director level the responsibility was placed on branch managers to ensure the health, safety and welfare of all staff. In all instances the policy and a full set of branch safe working procedures were issued to individual outlets. These contained nearly all the information most managers required to meet their legal duties. It did not however provide any guidance on the issues related to the employment and safety of disabled employees.

5.9.4 Training domain

In addition to the published manual all managers underwent a two day health and safety training course. Supplemental to this, all staff underwent an induction course which although focusing on customer care included some aspects of health and safety. Principally this included an introduction to COSHH, manual handling and identification of the fire escapes.

5.9.5 Operational safety management

The organisation had, via its safety management team, set up a policy document which included a number of safety objectives and associated performance objectives. Included within these were reduction in accident statistics, safety monitoring - i.e. site inspections by corporate safety team - and training targets. Furthermore there existed a number of drills that were carried out on an annual basis comprising: fire drills; emergency escape drills for members of the public; immediate action drills for ensuring trained first aiders. These 'goals' were audited internally by the branch manager once a year and externally

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by the HSW team on a rotating three yearly basis. All branches had been audited within the last three years. Interestingly enough the only one that had not was the HQ building.

5.9.6 Responsibility matrix

The organisation as part of its responsibility and control systems had allocated specific responsibilities to individual posts within the corporate and organisational structure. Overall the regional director was responsible for health and safety, the director of HR was responsible for policy development but this was operationally cascaded down to the HSW team. Policy deployment was via the HSW team and branch management. At branch level each layer of responsibility was allotted into a matrix. The following matrix was used, an illustration of which is provided in figure 5.14:

- Health and Safety Management System Responsibility matrix
- Accident and incident responsibility matrix
- Fire responsibility matrix
- First Aid responsibility matrix
- Safety equipment responsibility matrix
- Spillage responsibility matrix
- Safe systems of work matrix
- Risk assessment matrix
- Safety spot check list responsibility

<table>
<thead>
<tr>
<th></th>
<th>HQ</th>
<th>HSW Team</th>
<th>Branch mgt.</th>
<th>Systems Audit</th>
<th>Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedures</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Administration</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring (spot checks)</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
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</tr>
<tr>
<td>System Audits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Systems Review</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy recomm.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This system appeared to be much easier to control than most of the others demonstrated by similar size companies. It is clear from indicators such as this matrix approach; the inclusion of these responsibilities within the individual's job description and individual
levels of awareness during personal interviews; that this element of the SMS system appeared to be effective in notifying individuals of their responsibilities. However, with reference to disabled employees their responsibility was once more at the primary stage. For example line management were directly responsible for all staff. No active secondary or specific responsibility was available at the store level.

5.9.8 Summary of study unit 'D'

In summary this service sector organisation demonstrated similar patterns to the previous service sector organisation. Its focus was very much customer oriented with all its policies and procedures directed and deployed to this goal. This organisation, by participating within the Lead authority scheme, was better placed to meet its statutory duties and appeared more open than previous units. Much of this it is believed was as a direct result of its recent audit. The focus of its SMS was preventative and focused on empowering branch managers to make decisions. This philosophy sometimes was found wanting particularly when there was a financial penalty or implication.

In terms of provisions of responsibility, communication and problem resolution for disabled many similar patterns emerged. As previously reported although organisationally there were well defined policy and procedural provisions in place these were absent for the disability paradigm. Equally those elements of responsibility could be categorised as primary and secondary which existed in both a formal and informal state, the informal ones existing for the disabled. In terms of communication there appeared to be better provisions in place for customers than for employees. The organisation was working on many new initiatives that would assist visually impaired customers to shop but failed to provide similar technologies for employees.

It was also reported by disabled employees that levels of social support in terms of communication, trust and support were low.
# Chapter Five

<table>
<thead>
<tr>
<th>SMS Aspects</th>
<th>Sub-Aspect</th>
<th>Sensory disabled</th>
<th>Physically disabled</th>
<th>Responsibility</th>
<th>Barriers</th>
<th>Information sources</th>
<th>Remarks</th>
</tr>
</thead>
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<td>n/a</td>
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<td>Ab. Equality</td>
<td>4(3) (1)</td>
<td>4/4 (1)</td>
<td>Store manager/supervisor</td>
<td>time/access/font/distance</td>
<td>n/a</td>
<td>*</td>
</tr>
<tr>
<td>Procedures</td>
<td>General</td>
<td>3 &gt; disabled not covered *</td>
<td>LM/G Supervisors/ disabled not covered</td>
<td>communication/perception</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Conditions</td>
<td>best practice in many storms</td>
<td>mechanical lifting devices</td>
<td>Sup/Flici</td>
<td>Cost implications/Knowledge</td>
<td>PUWER/WPR</td>
<td>Information not available but to those in need</td>
<td></td>
</tr>
<tr>
<td>Specific</td>
<td>boards provided/</td>
<td>ramps provided, wheelchair&gt;&gt;</td>
<td>store mgt</td>
<td>culture/corporate policy</td>
<td>HS manual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEP</td>
<td>Peer gp&lt;</td>
<td>Peer gp &lt; PEP ++</td>
<td>Disability Co-ordinator/SH&amp;E Co-ordinator/storm manager</td>
<td>Attitude/Perception</td>
<td>corporate policy</td>
<td>manual</td>
<td>many manual handling issues/ improved provisions for customers</td>
</tr>
<tr>
<td>COSHH</td>
<td>No provisions in place limited use apart from cleansers</td>
<td>no spillage control, procedure in place</td>
<td>HS&amp;E</td>
<td>Knowledge</td>
<td>HSE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSE</td>
<td>HQ only ***Type talk</td>
<td>n/a</td>
<td>** ergonomic issues</td>
<td>understanding/knowledge/trust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>statutory/non-statutory (-)</td>
<td>standard (+) (1)</td>
<td>n/a</td>
<td>HS&amp;W team</td>
<td>economic system barriers</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Committee representation</td>
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<td>no representation at council/no consultation</td>
<td>no representation at council/to consultation</td>
<td>Director/line mgt</td>
<td>culture</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td>n/a</td>
<td>not carried out</td>
<td>not carried out</td>
<td>line mgt</td>
<td>perception</td>
<td>accepted</td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>n/a</td>
<td>visible criterion, e.g. departmental assessment of number of days without loss time accident</td>
<td>not available</td>
<td>HR/safety team</td>
<td>communication</td>
<td>stg. TU involvement</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>---------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>Competent persons</td>
<td>n/a</td>
<td>co-ordinator but not HSW '!!'</td>
<td>Disability/HSW co-ordinators /Line management</td>
<td>Director level</td>
<td>economic implications</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Problem resolution</td>
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<td>Formal &amp; informal**</td>
<td>&gt; **</td>
<td>store manager</td>
<td>role ambiguity/conflict</td>
<td>manual</td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>n/a</td>
<td>&gt; Ab.</td>
<td>&gt; &gt; Ab.</td>
<td>line mgmt.</td>
<td>knowledge domain</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Physical environment</td>
<td>n/a</td>
<td>walkways (·)</td>
<td>wheelchair (·)</td>
<td>HR/HSW</td>
<td>design</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>

KEY: User assessment ++ = very effective, + = effective, + = mixed effective, - = ineffective, >> formal > informal
User refer to (1) = often (2) = sometimes (3) = occasionally, (4) = never
Availability ! not ! sometimes !!! always
Researchers view as to adequacy * inadequate, ** adequate, *** best practice Ab. - Absent e = no direct involvement
5.10.1 Case study unit 'E'

Company E was a small engineering company specialising in the design and fabrication of automotive components, which it supplied to a number of home based and European outlets. Although growing the company remained a family business and prided itself in quality products. It had developed a number of quality initiatives including TQM, JIT and ISO 9002. It was reported that it was necessary to follow this route because of the pressure exerted by the market place and particularly the supply chain. The company had set itself a number of objectives, targets and CSF within a three year business plan. These included an increased growth rate and improved market share. The company could be termed mechanistic in its outlook and was becoming less autocratic in its management style (much of this as a direct result of its TQM programme). It had a fairly hierarchical management structure with an MD, a number of directors, supported by departmental managers, supervisors and leading hands. Most employees had worked for the same company for much of their working life and staff turnover was limited. The company did not have separate human resources/personnel or health and safety departments. These areas had been attached to other functional managers. It was reported that although there had been much middle management resentment regarding the TQM programme once initial barriers had been overcome it had generally been well received.

5.10.2 Health and safety management

The company had a health and safety policy which had been signed by the MD in 1992. Content wise it consisted of a statement of intent, a limited organisational structure and a set of safe working procedures. The policy document did not fit very well with the organisation as it appeared to be 'off the shelf' from a consultant. On further probing it transpired that in 1991 (before the TQM programme) the company had been served with a notice by the HSE for breach of the Factories Act 1961 and consequently employed a consultant to write the policy and provide expert advice on guarding provisions.
The company employed seven disabled employees five from the company via accidents and two who were relatives of other employees. No employee had been employed via the DRA or PACT system.

5.10.3 Policy deployment

The company had integrated the HSW policy within its ISO 9000 and TQM manual. The policy was similar in content to all others and followed the controlled document route. The policy was deployed by the unit/departmental managers and purported to be enforced by supervision/leading hands. Notwithstanding this all directors felt it was the responsibility of the MD to provide guidance on the policy and for the nominated departmental manager to deal with all safety issues. In an attempt to reduce the number of accidents in one department a Quality Circle (Kaizan Team) had been set up specifically to deal with the issue. Using the tools of quality such as brainstorming, 'Pareto' and 'Fishbone' cause and effect they were able to make improvements. Copies of the policy document were available at the line management level but no further down the company structure. Although much work was organised regarding HSW the policy documents did not reflect the effort that was being made. All supervisors and line managers had seen the company's policy. A statement of intent was displayed on the canteen notice board and full copies of the safe working procedures were available to employees at quality stations. The researcher felt that this was an element of best practice. Furthermore, the company adopted and felt it operated an 'open door' policy where any issue could be raised either on a one-to-one or via other routes.

5.10.4 Responsibility

As with all other units the ultimate responsibility for the HSW of all employees lay with the MD(see table 5.13). Operationally this was cascaded down the management chain to line managers, supervisors and leading hands. Once more a pattern emerged that the line/functional manager would direct the level of rule compliance and supervisionary
### Chapter Five

#### Table 5.13 EXISTING HSW SYSTEM-Responsibility Case Study Unit E

<table>
<thead>
<tr>
<th>Existence</th>
<th>MD</th>
<th>Sent mgmt.</th>
<th>Direct mgmt</th>
<th>Supervision</th>
<th>Facilities</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number interviewed</td>
<td>N/A</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Policy written</td>
<td>Ad.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>(++) **</td>
<td>(-) X</td>
</tr>
<tr>
<td>Statement of intent</td>
<td>Ad.</td>
<td>(+) ***</td>
<td>(+) **</td>
<td>(-) **</td>
<td>n</td>
<td>(+) **</td>
</tr>
<tr>
<td>Signed by MD</td>
<td>Yes</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Organisation</td>
<td>Ad.</td>
<td>(+)</td>
<td>(+)</td>
<td>(&gt;)</td>
<td>(&gt;)</td>
<td>(+)</td>
</tr>
<tr>
<td>Arrangements</td>
<td>Ad.</td>
<td>(+)</td>
<td># **</td>
<td># *</td>
<td># *</td>
<td># *</td>
</tr>
<tr>
<td>Defined responsibility</td>
<td>Ad-Sig</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Policy development Sys.</td>
<td>Stg (+)</td>
<td>Stg</td>
<td>X Ad.</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Policy deployment Sys.</td>
<td>stg +</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Policy enforcement Sys.</td>
<td>Ad-Wk</td>
<td>n</td>
<td>&lt;Res *</td>
<td>#</td>
<td>Stg. **</td>
<td>n</td>
</tr>
<tr>
<td>Rule enforcement Sys.</td>
<td>Ad.</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Monitoring Sys</td>
<td>Stg.</td>
<td>Ab.</td>
<td>Ab.</td>
<td>X</td>
<td>Stg. @ # ++</td>
<td>Ab.</td>
</tr>
<tr>
<td>Risk Assessments</td>
<td>Ad-Wk</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>Ab (-)</td>
</tr>
</tbody>
</table>

Key: System extent Stg.. Strong, Adequate, Weak, Absent; System Effectiveness ++ very effective, + effective, + - mixed effectiveness, - ineffective. Supporting conditions: **** strong, *** Adequate, ** Weak, * Control issues < Tm not adequate Tm < Res not adequate resources @ action required # decision making role X = present/involvement n=no direct involvement
levels would enforce the rule set. Supervisors who were interviewed were aware of their responsibilities under the Act and, broadly speaking, of the abilities or disabilities of their subordinates. As emerged previously, the network of responsibility was formal and documented apart from those aspects of the disability paradigm. Operational responsibility was very much on an informal basis with work colleagues.

5.10.5 Communication mechanisms

The company had a single trade union movement and had elected a trade union safety representative. The 'safety rep.' carried out his functions on a daily basis which included meetings with his constituents and management on the quarterly safety committee meeting. The meetings were chaired by the line manager responsible for safety and comprised a number of departmental supervisors and the safety representative. These meetings were however viewed as areas of conflict by both management and safety representative. Using content analysis of the minutes it appeared that much of this conflict centred around the provision of PPE, e.g. shoes or prescription glasses for using DSE workstations.

A number of memos had been forwarded to departmental managers regarding health and safety which were then reported to have been cascaded to supervisors via unit meetings or quality improvement circles. On further probing it was reported that this rarely occurred as production issues took precedence most of the time. The nominated manager attempted to keep up to date by purchasing Croner's Health and Safety Manager and relied very much on the updates for new information. However he admitted that much of the time he did not read or update the manual. He had a formal health and safety qualification in the NEBOSH diploma.

On exploring the manufacturing areas of the company many posters were placed in prominent positions throughout. These included the statutory poster 'employee rights,'
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## Table 5.14 EXISTING HS&W COMMUNICATION SYSTEM Case study unit E

<table>
<thead>
<tr>
<th>Director</th>
<th>Departmental</th>
<th>Line mgt.</th>
<th>Supervision</th>
<th>Human resources</th>
<th>HS&amp;W</th>
<th>Facilities</th>
<th>7U rep</th>
<th>Occupational Health</th>
<th>Employees</th>
<th>Disabled Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number interviewed</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>16</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>23</td>
</tr>
</tbody>
</table>

### Policy
- **HS&W understanding**
  - Director: I fully understand my duty.
  - Departmental: mixed feelings.
  - Line mgt.: most felt they understood.
  - Supervision: don't really understand.
  - Human resources: fully understood.
  - HS&W: should do.
  - Facilities: some of it but it just grows.
  - 7U rep: (1).
  - Occupational Health: (1).
  - Employees: 18/25 understood it.
  - Disabled Employees: 26/28 didn't understand.

- **Access information**
  - Director: X++3
  - Departmental: X
  - Line mgt.: X
  - Supervision: N+4
  - Human resources: Yes
  - HS&W: Yes
  - Facilities: Yes but ++
  - 7U rep: Yes but ***
  - Occupational Health: n
  - Employees: yes but *
  - Disabled Employees: n

- **Location**
  - Director: In my drawer.
  - Departmental: Notice boards.
  - Line mgt.: It's in the filing cabinet.
  - Supervision: Don't have a copy.
  - Human resources: It's under HS&W.
  - HS&W: Where do you want to start.
  - Facilities: If you come back next time I will find it for you.
  - 7U rep: Top shelf.
  - Occupational Health: No copy at all.
  - Employees: company handbook.
  - Disabled Employees: No access.

- **Disabled**
  - Director: No knowledge.
  - Departmental: Others responsibility.
  - Line mgt.: Others responsibility.
  - Supervision: Some info.
  - Human resources: Good knowledge domain.
  - HS&W: Equal Opps. Info.
  - Facilities: DDA info.
  - 7U rep: Co-reers.
  - Occupational Health: No info.
  - Employees: Rights handbook: + various literature.
  - Disabled Employees: much information.
  - Disabled: n/a.
  - Alternative: Various information on individual needs.
  - Access: At home, shared party.
  - Responsibility: Ab at Org. level.

### Procedures
- Director: X
- Departmental: X
- Line mgt.: X
- Supervision: X
- Human resources: X
- HS&W: X
- Facilities: X
- 7U rep: X
- Occupational Health: n
- Employees: n
- Disabled Employees: n

### Access
- Director: yes but ?
- Departmental: DK.
- Line mgt.: yes.
- Supervision: each had limited info.
- Human resources: n/a.
- HS&W: all documentation.
- Facilities: n/a.
- 7U rep: own copy.
- Occupational Health: n.
- Employees: access via supervision.
- Disabled Employees: no access.

### Location
- Director: own drawer.
- Departmental: filing cabinet.
- Line mgt.: personal.
- Supervision: office.
- Human resources: n/a.
- HS&W: office.
- Facilities: n.
- 7U rep: some availability.
- Occupational Health: Ab.
- Employees: n.
- Disabled Employees: n.

### Responsibility
- Director: line mgt.
- Departmental: line mgt.
- Line mgt.: HR.
- Supervision: line mgt.
- Human resources: dk.
- HS&W: line mgt.
- Facilities: n/a.
- 7U rep: mgt.
- Occupational Health: n/a.
- Employees: n.
- Disabled Employees: n.

### Posters
- Director: n
- Departmental: n statutory.
- Line mgt.: ++
- Supervision: (+)
- Human resources: (+)
- HS&W: (+)
- Facilities: felt there was a need for more.
- 7U rep: (+)
- Occupational Health: (+)
- Employees: (+)
- Disabled Employees: (+)

---

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Table 5.14 Cont.

<table>
<thead>
<tr>
<th>HSW Committee</th>
<th>Access</th>
<th>Membership</th>
<th>Consultation</th>
<th>Information</th>
<th>Induction</th>
<th>Support</th>
<th>Trust</th>
<th>Communication</th>
<th>MOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>n/a</td>
<td>n</td>
<td>n</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>n</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Membership</td>
<td>n/a</td>
<td>n</td>
<td>Stg.-Ad.</td>
<td>infrequent</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Consultation</td>
<td>n/a</td>
<td>n</td>
<td>n</td>
<td>Ad.</td>
<td>&lt;</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Information</td>
<td>n/a</td>
<td>n</td>
<td>much available.</td>
<td>Wk.</td>
<td>stg.</td>
<td>(-Wk.</td>
<td>n</td>
<td>journals</td>
<td>via safety committee minutes</td>
</tr>
<tr>
<td>Induction</td>
<td>Stg.</td>
<td>n</td>
<td>stg.</td>
<td>Wk.</td>
<td>stg.</td>
<td>-Wk.</td>
<td>n</td>
<td>n</td>
<td>g screening</td>
</tr>
<tr>
<td>Communication</td>
<td>Stg.</td>
<td>Stg.</td>
<td>Ad</td>
<td>Wk/Ab</td>
<td>Wk.</td>
<td>Ad</td>
<td>n</td>
<td>n</td>
<td>Stg.-Ad.</td>
</tr>
</tbody>
</table>

**KEY/Key:** System extent Stg. Strong, Ad. Adequate, Wk. Weak, Ab Absent System Effectiveness ++ very effective, + effective, + mixed effectiveness, - ineffective, Supporting conditions: **** strong, *** Adequate, ** Weak, * Control issues <Im not adequate time <res not adequate resources @ action required # decision making role

*= no direct involvement X= involvement

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'Abrasive wheel regulations', the Factories Act 1961 and various placards and safety signs on chemicals and the wearing of PPE. The company had, relatively speaking, invested a considerable amount in the provision of safety signs.

5.10.6 Disabled employees

The company had within its employ a number of disabled employees of which six were interviewed most of whom had been employed by the company prior to impairment or disability. It was reported that the company felt responsible for such individuals but on further discussions with the personnel manager (dual function) it was reported that they would not employ any more as they were in such a 'risky ' business. The impairments ranged from amputees who had lost hands, a lower forearm and a lower leg to those who were sensory impaired with total loss of sight and epilepsy. They ranged from shop floor workers to supervisory level of management.

Broadly speaking the individuals interviewed felt reasonably satisfied with the 'assistance' they were given while at work. Of those interviewed none had been selected as a member of a quality improvement team or had been asked to attend any QIT briefing. Interviewees felt that they had enough just doing their own job without taking on additional tasks that were not part of their role. From the researcher's perspective this tended to have a negative effect on others' perceptions. When interviewing supervisors a common term used to describe the target group was 'lazy'. This the researcher felt was not the case, many of those interviewed were putting as much as they could into their job but were restricted due to their impairment. Decisions as to the amount of work an employee should be expected to carry out was left up to the discretion of the supervisor/line manager and was very informal.

Although the company used many hazardous chemicals and would be considered a medium to high risk workplace, no formal risk assessments had been carried out under COSHH or regulation 3 requirements for disabled employees. Typical areas that required
formal assessments were MOE, access routes to facilities and the identification of real hazards as opposed to perceived. A further common theme that had emerged throughout each of the case units was the individual perception of risk each different category of impaired employee presented. Broadly speaking, most competent persons felt that those with epilepsy presented a very high risk. Limited attention was paid to the ergonomic or more chronic condition that may develop over time.

5.10.7 Problem resolution

Throughout the organisation problems were resolved by a formal system of consultation with line management. Should this not be appropriate QIT's were set up and allocated a 'slot of time' within the production schedule. For H&S issues a similar route was taken, however, in most instances the TU rep would be involved and act on behalf of the employee. Only one disabled employee was a member of the recognised trade union. The safety manager was aware that there was no consultation process available to the employees who were sensory impaired but reported he did not know how to overcome the issue.

5.10.8 Summary of case study unit 'E'

This organisation had used the tools of quality to make improvements in the SMS. Overall Pareto, brain storming, fishbone analysis and SPC had all been applied to the SMS to enable continuous improvement. Nevertheless in terms of the disability paradigm this was not reflected in improvements in either the policy, hazard or monitoring domains and thus the domains of responsibility, communication and problem resolution. (see table 5.15).
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5.15 The Disability Paradigm Case study unit E

<table>
<thead>
<tr>
<th>EMS Aspects</th>
<th>Sub Aspects</th>
<th>Sensory disabled</th>
<th>Physically disabled</th>
<th>Responsibility</th>
<th>Barriers</th>
<th>Information sources</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number interviewed</td>
<td>n/a</td>
<td>3</td>
<td>3</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>others interviewed</td>
</tr>
<tr>
<td>Policy</td>
<td>Ab. Equality</td>
<td>4(-)(-)</td>
<td>4(-)(-)</td>
<td>HR/Line mgt/HSW</td>
<td>accessibility/disability/perception</td>
<td>sig. for older groups but not disabled</td>
<td></td>
</tr>
<tr>
<td>Procedures</td>
<td>General</td>
<td>4 Ab. (-) *</td>
<td>3 Ab. (-) *</td>
<td>Line manager/Supervisor</td>
<td>knowledge &amp; individual perception</td>
<td>sig.</td>
<td></td>
</tr>
<tr>
<td>Accident reporting</td>
<td>4 never report Sg. 'my fault'</td>
<td>2 never report Sg. 'blame culture' loss of employment</td>
<td>LM(Sg.)/Ses (Sg.)/HSW</td>
<td>Org. culture</td>
<td>Ab.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Conditions</td>
<td>some arrangements</td>
<td>(-) Ad for sick</td>
<td>Supervisors/HSW</td>
<td>Economic Implications/Knowledge</td>
<td>PUWER/HSWPR</td>
<td>Information available to those in need</td>
<td></td>
</tr>
<tr>
<td>Specific</td>
<td>boards provided</td>
<td>ramps provided, trailing system, gates, driven by peer group</td>
<td>non allowed (+) *</td>
<td>communication/understanding</td>
<td>not available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEP</td>
<td>Peer grp (-) *</td>
<td>Peer grp (-) *</td>
<td>HSW</td>
<td>Attitude/Perception</td>
<td>n</td>
<td>manual handling issues/ (+) *</td>
<td></td>
</tr>
<tr>
<td>COSH</td>
<td>No provisions</td>
<td>main aspect spillage control, no procedure</td>
<td>HSW</td>
<td>Knowledge/culture</td>
<td>not available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSE</td>
<td>*** induction loop</td>
<td>workstation altered</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posters</td>
<td>statutory/posters</td>
<td>standard (+) (-)</td>
<td>standard (+) (-)</td>
<td>HS&amp;E</td>
<td>Illuminations/ cultural management/ place</td>
<td>EMAS identified operationally unscored</td>
<td></td>
</tr>
<tr>
<td>Committee representation</td>
<td>no representation</td>
<td>no representation at committee level</td>
<td>Ab. (-) *</td>
<td>Line mgmt/supervision/HSW</td>
<td>organizational individuals</td>
<td>Ab * (+)</td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td>not carried out</td>
<td>performance criteria</td>
<td>Ab.</td>
<td>HS&amp;E/Lrn/Supervision</td>
<td>perception/knowledge</td>
<td>accepted</td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>N/A</td>
<td>visible criterion, e.g. departmental assessment of number of days without loss of work accident</td>
<td>Absent for physically disabled (-)</td>
<td>Absent (0)</td>
<td>Lw/HSE</td>
<td>knowledge/awareness</td>
<td>sig. TU involvement</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>-----</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------</td>
<td>-----------</td>
<td>--------</td>
<td>--------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Competent persons</td>
<td>N/A</td>
<td>Ab.</td>
<td>Ab.</td>
<td>n</td>
<td>n</td>
<td>Ab.</td>
<td>Ab. *</td>
</tr>
<tr>
<td>Problem resolution</td>
<td>N/A</td>
<td>Ab. *</td>
<td>*Ab</td>
<td>n</td>
<td>individual and institutional issues</td>
<td>N/A</td>
<td>Ab. *</td>
</tr>
<tr>
<td>Support</td>
<td>N/A</td>
<td>Ab. -WL.</td>
<td>WL. (+)</td>
<td>Lw/supervisors</td>
<td>Individual issues</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Physical environment</td>
<td>N/A</td>
<td>some alterations to workstations</td>
<td>no alterations but limited DSE provided</td>
<td>Lw/Facilities/HSE</td>
<td>n</td>
<td>N/A</td>
<td>n</td>
</tr>
</tbody>
</table>

KEY: User assessment ++ = very effective, ++ = effective, + = mixed effective, - = ineffective, >> formal > informal
User refers to 1 = often 2 = sometimes 3 = occasionally, 4 = never
Availability: 1 = not if sometimes 3 = always
Researchers view as to adequacy: * = inadequate, ** = adequate, *** = best practice, n = no involvement, Ab = Absent.
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5.11.1 Case study unit 'F'

Company F was a small retail company that specialised in a niche market. They believed in a quality service and expected people to pay for the 'quality' of their product and service. They did not follow a TQM programme. The company had been established for twenty years and followed an autocratic management style. In broad terms the company perceived it 'complied with health and safety law' and that they were a family type business. They employed 6 disabled employees. All but one had been employed as disabled. The one who had developed diabetes since commencing his employment.

5.11.2 Health and safety management

The company had no formally recognised SMS in place but as with the majority of the study units had a policy document. Although this reflected the company and its undertaking reasonably well, it was evident on deeper probing that it had been written some years previously. It was written with a very broad approach and was not properly supported by safe working procedures. The following is an extract from the policy's statement of intent:

1. The Board of Directors regard the promotion, maintenance and improvement of Health and Safety standards as one of its declared objectives.

2. It is therefore this Company's policy to do all that is reasonably practicable to prevent personal injury and ill health and damage to property and to protect everyone from foreseeable work hazards including customers in so far as they come into contact with the Company or its products.

It is the company policy to consider the community as an integral part of its strategy.

3. In particular the Company will:-

   (a) - provide and maintain safe and healthy working conditions taking account of any legal requirements,
   (b) - provide instruction, training and supervision to enable employees to perform their work safely and efficiently,
   (c) - make available all necessary safety devices and protective equipment and supervise their use,
   (d) - maintain a constant and continuing interest in health and safety matters applicable to the Company's activities, in particular, by consulting and involving employees and their representatives.

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4. Employees have a duty to take reasonable care of themselves and others and to co-operate in the operation of this policy.

Risk assessments as required by regulation three of the MHSAW had been carried out, however, as was emerging as a consistent pattern with all other study units, these appeared to start, run for a while and then lose impetus. Risk assessment was seen as the main focus of health and safety law.

This company displayed a reasonable standard of legal compliance but no evidence of a strategic or structured approach to meeting the company's statutory duties was in evidence. This possibly was a reflection of the size and development stage of the company rather than a reluctance to meet legal duties imposed for employee safety and health at work.

The company had records of a safety committee but this met very infrequently and appeared to be reactive rather than programmed. This lack of a proactive safety committee was reflected in poor levels of communication between key players within the company. No senior individual had taken overall responsibility for health and safety and as such it was perceived to be a low profile activity within the company.

Communication within the company was via very informal routes, memos were used very infrequently and the dominant methodology of internal communication was verbal. A similar pattern emerged for supporting disabled employees. Those who had been with the company for a number of years appeared to be most satisfied with the provisions or accommodations for their disability. In terms of disabled employees, levels of responsibility reflected the SME values of the organisation with individuals having specific responsibilities. Once more the responsibility for disabled employees was informal and dictated by group dynamics rather than process or system dynamics. Disabled employees worked in close groups however no formal documentation processes or sub systems had been set up to deal with the disabled paradigm.
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5.12 Final case study units

The final two case study units were very typical of SME\'s and had limited policy provisions. All communication and responsibility networks were informal and group dynamics were strong. No significant finding emerged that have not been illustrated in previous units.

5.13 Discussion and cross case analysis

The following outlines the critical processes that were explored during the case study phase.

5.13.1 Policy domain

Conceptually it emerged that most organisations had a documented health and safety policy. The content and complexity of the policy varied but broadly speaking reflected the complexity and size of the organisation. The policy documents, however complex, adopted a similar pattern. A statement of intent, comprising a single sheet of paper was followed by an outline of organisational responsibilities and arrangements. In particular those organisations who had adopted a TQM programme displayed elevated documentary control and broadly adopted a more strategic approach to the safety management process.

Although there has been criticism of the manner in which the policy provisions of the HSW Act have been implemented at the organisational level, it remained the primary source of performance monitoring by enforcement authorities. However as far back as 1951 Leaner and Laswell observed that policy issues, would if they were to keep pace with developments in the complexity of organisations and the issues to be controlled, need to adopt an integrated and multidisciplinary approach to policy analysis and policy making. Lewin and Melvin (1986) supports this argument further by highlighting that
as policy issues have become more complex so has the need for more complex policies. Hence at the policy level we must design the system and culture or capability with respect to its goals, underlying values, structures, technology, information processing and the perceptions, attitudes and skills of its people (Jatsch, 1972). These goals can be viewed as a set of non-fixed constraints which solutions must satisfy. And as Vickers (1963) argues they are norms and values which can be defined as specific and tacit standards of what is acceptable within organisations.

The goals are, broadly speaking, compliance for some organisations and best practice for others. Those organisations that had adopted a TQM programme emerged as seeking best practice in HSW. They also emerged to have developed improved levels of data collection by using the tools of quality as part of their SMS and improved levels of communication at the non-verbal and verbal level through quality groups. However as with all organisations in the study fell far short of reaching SFRP for the disability paradigm.

Within the policy making domain of the disability paradigm it must be seen as a process of adaption within a difficult systems model (Lewin & Melvin, 1986; Emery & Trist, 1981) albeit these systems in many aspects are informal. They can be termed open as they allow energy exchanges within an environment from which can be defined a set of interrelated elements. Each element is related directly or indirectly to every other element, and no subset is unrelated to any other subset (as described by Ackoff & Emery, 1972). In this context is is an adaptive system in that it is able to react or respond to changes to attain the goals. The reaction or response may be passive (the system changes itself) or active (the system changes the environment).

In organisations A, B, C and E the dominant SMS model was that adopted in HS(G) 65 and in D ISRS advocated by the consultancy DNV. Strategic performance measures had not, as a rule, been established by the SMEs (units E, F, G & H). Whereas in the large units (A, B, C & D) accident statistics, which are not considered effective measures
(Nichols, 1973), were the preferred method of measuring the performance. Some however had made attempts to develop alternatives such as attitudinal measures, safety sampling and rule compliance techniques. Units A, B, C and D displayed a formal process of reporting accidents to the HSE in accordance with RIDDOR. In relative terms it was concluded this reflected the development or maturity of the organisations. Those who had adopted a TQM programme emerged as demonstrating improvements in certain aspects of the policy domain. These were principally policy elements concerned with tools of quality and the dissemination of information.

5.13.2 Process model

A pattern consistently emerged where organisations would identify different functions within the process model. Common to all were policy makers (P1 See Figure 5.12) who would formulate and develop the content of the policy and policy deployers (P2). Operationally the policy was developed to reflect a hierarchal responsibility matrix as demonstrated by case studies 'A and B' (P3) and illustrated in table 5.14 and figure 5.15. The figure represents the third level of the process model. It is at this level that most differences emerged within organisations. Not unexpectedly the complexity of the matrix was a function of each organisation's state of maturity, development, commitment
and resources. For some there existed clear and succinct tasks or objectives set, for others, particularly the SMEs, the lines of responsibility were broad with a large span of control. The fourth element (P4) of the process model included those who were tasked with the responsibility for enforcing conformance with the systems 'rules'. In nearly all cases this operationally fell to the supervisory level within the organisation. Interestingly it is this layer within organisations who are having to accept an increasing degree of responsibility for other functions as organisations 'de-layer' and downsize. Process phase five (P5) is the communication network that facilitates P1 through to P4 to be effectively deployed within any organisation by allowing the rule follower (P6) to interpret the rules set within the policy. Supporting this phase was a feedback loop (P7) which allowed the consultation/communication network to operate both horizontally and laterally. The degree to which this was achieved varied greatly between organisations. When the integrated application of this model was applied to the paradigm of disability certain patterns consistently emerged at both the case and cross case analysis level.
5.13.3 Responsibility/influence

A consistent pattern emerged throughout the case study units in that lines of influence/responsibility for disabled employees' health, safety and welfare fell into two categories. One was internal to the organisation and one external to the organisation. Internal key players included the TU representative (TUR), human resources (HR), Line management (LM1 & 2), disability co-ordinators (Dis-co), occupational health (OH), facilities directorate (FD) and the health and safety manager (SO)/fire officer (FO). Within SMEs however these functions in many cases were carried out by the same person. For example in case study unit F the FD and SM were one and the same. Other themes to emerge from the cross case analysis included the relationship between the level of responsibility afforded key players and the degree of influence they had on the operational activities and barriers disabled employees were subjected to. Figure 5.16 below illustrates that, broadly speaking, although HR, LM1-3 and the FD were formally responsible for certain aspects of disabled employee's administration and HSW they were in fact not very influential, according to disabled employees. This is demonstrated by the distance from the centre of the paradigm to the outermost aspect of the page. For example LM2 have the most operational responsibility but the least perceived influence and LM4 the least responsibility but the most perceived influence.

Externally three main groups were identified as having an operational impact on the HSW aspects of disabled or impaired employees. These included the regulatory bodies such as the HSE, Local Authority Environmental Health Officers, Employment Medical Advisors and support groups such as National level providers. National providers included RNID, Scope and the RNIB. Local groups are varied and sometimes very specific. This category also includes the Placement Assessment and and Counselling Teams (PACT) and Disability Employment Advisers (DEAs). Finally there was the new Disability Commission which was seen by the target group as being a 'step in the right direction' by some and a 'waste of public money' or as one interviewee commented 'a lion without a roar' by others.
Chapter Five

Figure 5.16 Organisational responsibility/influence

Many individual barriers were evident within the interrelationships of organisational key players. Pattern matching consistently identified barriers such as a political connection, culture and individual perception within the systems model. Confidentiality between all players resulted in a barrier between the interface of the sub departments such as human resource management, occupational health, line managers and health and safety professionals. The perception of risk by key players appeared to be of most importance. This was particularly evident with safety professionals who in many instances ranked certain impairments as very high risk.

Throughout all cases studies it was consistently demonstrated that there was an implied need to ensure political correctness at all costs. In only one organisation had the issue been addressed at a corporate level and thus a policy adopted. What was difficult to
understand was the reluctance to put a policy in place should it be found wanting! There was also a feeling that there was not sufficient information readily available on what was politically and socially acceptable for all parties. This was demonstrated aptly by one safety professional who indicated he had started to write the policy but became so tied up with different terminology on what constituted disability he gave up.

This social/organisational dimension was also a reflection of individuals' perceptions and attitudes towards the continuum of ability/disability. These perceptions, it was reported, caused individuals to filter information, withhold information and selectively perceive information. As this directly relates to the communication process it will be discussed under that heading.

5.13.4 Communication networks

In reviewing the emerging findings of the study Figure 5.13 provides evidence that certain blockers or barriers exist for disabled employees which non-disabled employees are not necessarily exposed to. As illustrated below key players in phases P1 and P2 often felt they 'did not have suitable or sufficient knowledge' to incorporate policy statements on the HSW issues or make decisions regarding disabled employees at the policy level. In real terms this was reflected in the P3 process where although limited best practice was identified the dominant theme was, it was limited throughout. The greater barrier however emerged between P4, P5, P6 and P7. The first barrier identified was between P4 and P5 where disabled employees were not afforded adequate provisions to be in a position to comply with rule sets relevant to HSW. Broadly, trust was absent between disabled employees and the rule set enforcers. These emerging findings support those of chapter three and four. The second barrier to an effective system was the communication network. Communication can be categorised as verbal and non-verbal (Robbin, 1994) and potentially is the most heavily weighted factor within the formal systems model. In fact Baron & Greenberg, (1990) when studying communication
networks concluded that complex situations, such as exist with the disabled paradigm, require equally complex communication networks. In one review, (Berlo, 1960) the communication model is explained as including a source, encoding of the information, channelling, decoding, recovery and feedback (see figure 5.18).

This communication channel can be further categorised into 'formal' and 'informal'.

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During the study it emerged that many of the formal non-verbal links were either restricted or absent for both sensory and physically impaired employees. Classical patterns that emerged included sensory disabled who had never read the organisation's HSW policy, physically disabled with restricted access to both written and verbal communications and the absence of any form of employee consultation between disabled rule followers, policy makers and organisational enforcers. On further probing it soon became apparent that because there was no ownership within the system/process, no individual had taken the necessary time to read the contents of the policy to disabled employees or make alternative arrangements to meet their statutory duty under the HSW Act (sect 2(3)). This states:

"Except as in cases as may be prescribed, it shall be the duty of every employer to prepare and as often as may be appropriate revise a written statement of his general policy with respect to the health and safety at work of his employees ... and to bring the statement and any revision of it to the notice of all his employees."

Similar complexities emerged with non-verbal communications such as signs which are covered under the recent Safety Signs regulations 1996, and access to minutes and memos relevant to safety and safety committee meetings. These are both aspects of the Act which in statutory terms the duty holder must make arrangements for. These are addressed particularly in section 2(2) (c) which states the employer shall ensure 'the provision of such information... as is necessary to ensure so far as is reasonably practicable, the health and safety of his employees. and Section 2(4,6 &7). However disabled employees were not afforded an appropriate system to participate in the consultation process via the TU representative. Many of these barriers were compounded by emerging patterns indicating that restrictions in Kinesics- the study of body movement when communicating non-verbally - occurred. As long ago as 1952 it has been argued (Birdwhistell, 1952) that every movement we make has a meaning and no movement is an accident. Assuming this to be true both sensory and physically impaired employees may have a further barrier to overcome when attempting to communicate their message. Other emerging patterns suggest key players 'filter' information from the target group and 'selective perception'
was more in evidence for disabled employees than non-disabled. Filtering (Robbins, 1976) is the process of the sender manipulating the information so that it will be seen in a more favourable light by the receiver. This factor emerged as a consistent pattern throughout the study. The theory of selective perception is where receivers of information act selectively on the decoding process based upon their own needs, motivation, experience and background (McCrosky, et al. 1976). Once more this also emerged as a consistent pattern throughout all organisations. Possibly this criterion of selective perception and filtering played a much greater role in the paradigm than was originally anticipated. To a greater degree the barrier that it put in place potentially influenced the degree of perceived risk attached to each impairment. Many quite experienced safety managers perceived various impairments or disabilities as 'very high' or high in terms of their risk to themselves or others. See figure 5.19.
Small differences in communication systems, performance measuring and data collection emerged between organisations who had TQM and those that did however these were not reflected in the disability paradigm. Slight differences also emerged however between those large and SME sized organisations.

5.13.5 Internal organisational communication networks

For disabled employees there emerged a pattern of both responsibility and
communication. The dominant pattern of communication networking emerged as 'informal', 'peer group' and mono-directional (see figure 5.20). Formal processes for communicating were absent as were communication networks with line management, which included supervisors. As illustrated in figure 5.20 disabled employees appear to be communicated to by many individuals. However much of this communication was often in one direction (as indicated by the arrow head) and informal. PACT/DEA and peer group employees emerged as the only groups within the network where the communication process was perceived to be a two way process. Placement Assessment and Counselling Teams, though being external to organisations were of limited daily use and were in the main responsible for providing an entry point into employment. They had limited time and access to the employee after the initial placement process was completed. Although outside the remit of this study it is the opinion of the researcher that these teams and particularly the Disabled Employment Advisors could play a more active role in securing the inclusion of disabled employees' provisions within organisations' SMS and in particular the policy domain.

Equally important at the operational level was access to such facilities as DEAs and funding availability through 'The access to work programme'. Predominantly it was only the large organisations and in the main the Personnel or Human Resource department who were aware of such assistance. Safety advisers or safety managers were not aware of any financial assistance to improve the health and safety aspects of employees with disabilities. Most were not aware of the Disability Discrimination Act 1995 and its implications for them as professionals.
Particularly interesting was the perceived absence of an effective communication process between the official trade union representative and employees who were 'paid up members' and disabled or impaired. In operational terms this emerged as a function of time and priorities. That is to say in most organisations the TU representative was constantly under pressure to address the most important issues to the majority of constituents rather than a single issue for one constituent. This egalitarian approach was common for many of the issues addressed by TU representatives. A similar pattern emerged with line management. Although they were directly responsible for the health, safety and welfare of all employees there were clear barriers to them being effective in communicating. This was firstly due to the 'rule set' they had developed and secondly due to difficulties in deploying the organisation's safety objectives to impaired employees. Most line managers had not received any formal disability awareness training or were not knowlegable about issues that would impact on the safety of disabled employees. Many LM2 managers never discussed issues with individual employees, particularly those with disabilities. The same could be said, if less so, for LM3 who were
the supervisionary level. Those who actually communicated and assisted with individual coping strategies used by disabled employees were their own peer group or work colleagues. Much of the time this was informal and unauthorised. Particularly disconcerting was the norm that this approach would always be effective in cases of emergency and changing patterns of employees. Consistently organisational norms were for such issues as MOE to be resolved at the shop floor or peer group level. As previously reported in case study units although this was acceptable in some circumstances in others it would perhaps not meet the requirements of section 2 (2)d which states:

'So far as is reasonably practicable as regards any place of work under the employer's control, the maintenance of it in a condition that is safe... and the provision and maintenance of means of access to and egress from it that are safe and without such risks'.

For example within the literature there exists a British Standard (BS5588 part 8) outlining the minimum standards required for effective means of escape for disabled people in cases of emergency. Broadly safety professionals were not aware of these or the measures they contained. Similar requirements are placed upon duty holders under the Management of Health and Safety at Work Regulations. They state under regulation 3 that every employer shall make a suitable and sufficient assessment of the risks to his employees. Where five or more are employed these should be documented and under regulation 7 employers should 'establish and where necessary give effect to appropriate procedures to be followed in the event of serious and imminent danger to persons at work in his undertaking'.

There is also a statutory requirement for employees to notify (under regulation 12) their employer of any shortcomings in the arrangements for health and safety. This is very difficult if employees are not aware of the duty requirements in the first instance. This emerged as the dominant paradigm for employees who had certain disabilities or impairments.

5.14 Conclusion

Overall this chapter has evaluated by way of case study analysis the paradigm of disability at the organisational level. It added further to the emerging findings of chapter three and four which explored the paradigm at the individual level. During this chapter a number
of factors have emerged using the domains of policy, hazard and monitoring and more specifically responsibility, communication and problem resolution. It emerged that at the policy level the paradigm was absent, safety professionals deemed it to be a significant hazard but reported a failure to formally assess these risks. A similar pattern emerged with the lines of responsibility within the policy domain. In broad terms two levels of responsibility were identified. Firstly a primary level existed where line management were holistically responsible for the health and safety of all staff. This was supported by a secondary level for more specific or specialist knowledge. This included the organisation's competent person, occupational health and facilities.

Communication emerged as the domain which presented the highest ranked problem in terms of statutory compliance and socio-organisational networking. Many individual and organisational barriers emerged from key players and the target population.

Holistically it emerged that no formal safety management system existed for disabled employees. However an informal system did exist based upon group dynamics and personal relationships. These were however not in line with the current socio-legal requirements of the HSW Act and its supporting relevant statutory provisions.

In terms of differences between those organisations who had adopted TQM and those who had not there emerged consistent patterns regarding performance monitoring, use of quality tools, data collection and improved acceptance of change. However differences were not identified as significant in the context of the disability paradigm.

The next chapter takes the emerging themes from this chapter and aims to provide further support by exploring the themes via a larger population and from a standpoint of random assignment rather than selective assignment.
ORGANISATIONAL DIFFERENCE AND SUPPORTING EVIDENCE

Organisations are like men... By different methods men excel, But where is he who can do all things well.

Charles Churchill 1731-1764 (source OLWP, 1981)
CHAPTER SIX- THE ORGANISATIONAL CONSTRUCT (SUPPORTING EVIDENCE)

6.1 Introduction

A number of themes emerged from the case study phase of this thesis. Overall, most organisations had a relatively well developed HSW policy document, following a common pattern of statement of intent, organisational structure and arrangements. Although some were more complex than others, there existed a common pattern of structure, allocation of responsibility and organisational commitment. For larger organisations these policy documents acted as the focus for the organisation's SMS which followed a number of different models but once again there remained a core pattern of content. Most popular were those based upon the HSE's HS(G) 65 model, BS8800 and ISRS. Core elements to such models include the development of a policy, the deployment of that policy, reactive or active monitoring and then an audit and review process.

Within the context of organisations who had integrated their SMS within a TQM programme there emerged elevated levels of data collection, use of that data, non-verbal mechanisms for communicating HSW information and problem resolution. However in terms of organisational cognitive adequacy at the cybernetic level, limited data emerged to suggest any significant difference between organisations within the paradigm of disability.

Using the priori construct developed in the previous chapters it emerged that for disabled employees the level of organisational responsibility for HSW was multifactoral, limited verbal or non-verbal communication of information was evident and problem resolution was low. Overall disabled employees (see chapters 3 and 4) within the study reported organisations to exhibit low levels of cognitive adequacy condition.

This chapter provides supporting evidence of such emerging findings by seeking data
from a random sample of respondent organisations and testing the differences and levels of significance. Each element of the cognitive adequacy findings will be explained. The methodology employed was a self-completed questionnaire which sought to answer the research hypothesis, 'Does the level of cognitive adequacy related to HSW compliance for disabled employees improve within organisations which have adopted a TQM programme'. This was answered by asking the following research questions:

- Does a pattern of organisational responsibility exist for the HSW provisions for disabled employees;
- Do effective communication processes exist within organisations to meet the needs of disabled employees;
- Do problems associated with HSW and the disability paradigm reach resolution.

6.2 Background

In terms of allocation of responsibility for HSW compliance there emerged key players within the policy domain. These could be categorised into those with primary responsibilities e.g. Directors and line managers responsible for all employees subordinate to them, and those with secondary responsibility. This secondary level of responsibility represented those key players within organisations who had specialist knowledge, skills or experience and who by virtue of these were deemed competent or responsible. Within the paradigm of disability it emerged that although many actors participated within the process of employment and workplace activities there was a core of key actors. These included players from the following competencies health and safety (H&S), human resources (HR), line management and facilities. Of these line management were consistently identified within the policy domain as having primary responsibility for all staff. Broadly speaking levels of responsibility for the actions to ensure the safety and welfare of disabled employees were based upon informal mechanisms and focused on the lower levels of organisational responsibility. Limited training was provided to management to allow them to carry out this task adequately.

Communication emerged from both the individual perspective and the case study analysis.
as one of the key constructs of importance by disabled employees. However at the operational level it emerged that both verbal and non-verbal communication of information was limited. It also emerged that informal systems existed between intra-organisational networks and inter-personal networks. Specifically, it emerged that many barriers existed at the organisational and individual levels to effective lateral and horizontal communication. In drawing the barriers together these could be categorised as physical, institutional and individual. Physical barriers included access to policy documents, safety signs, COSHH data and means of escape in cases of emergency. Institutional or organisational barriers included role ambiguity, intra organisational conflict, perceptions and information filtering. Similarly, within the individual context, barriers existed through individual perceptions and attitudes of both disabled and non-disabled. Many organisations reported having no clear mechanism to effectively communicate with certain groups of disabled.

The construct of problem resolution also appeared to be problematic for disabled employees. Although TQM organisations demonstrated elevated levels of problem resolution generally, when placed in the context of the disabled paradigm this was limited or in some cases absent. Within organisations this construct appeared once more to be multifactorial. However a pattern did emerge. In broader terms it was common for individuals at the outset to discuss HSW issues with their peer group or work colleagues prior to following a formal route of communication. In many instances this informal system appeared to be much more effective than the formal network that was advocated by the policy domain. In fact it was concluded the dominant theme was one of non-communication.

In those organisations that had adopted a TQM programme they demonstrated improved communication networks and problem resolution techniques by adopting the tools of quality such as 'Quality Circles', 'Kizan', Pareto, Fish bone -cause and effect- and brainstorming. These tools were then operationally used to seek out route causes of identified problems. However once more when reflecting on the general cognitive provisions for the
disabled paradigm, in broad terms provisions were found to be based on informal structures associated with group dynamics rather than formal processes of decision making.

Therefore to establish whether these emerging themes were equally present in the wider population, data was collected via a self completed postal questionnaire from a random sample of organisations within the selected Standard Industrial Classifications.

6.3 Methodology

6.3.1 Research design

As with chapter four the research design for this stage could have been considered socio-technical in its function. In the real world of organisations there is in effect a trade off between the reliability and validity of the research findings and the practicality of the research design. In the laboratory it is possible to manipulate the variables to establish their time sequence and thus obtain evidence of whether the independent variable precedes the dependent variable or vice versa. However in the real world of sociology and organisational processes or systems this is not generally possible within the time constraints imposed on financially restricted research. That is not to say that real world research is not valid. As illustrated in chapter four the recent developments in social science methodologies have now made it possible to control these aspects of internal validity of variables at the post test stage rather than the pre test stage (Campbell & Stanley, 1966).

In addressing the research questions that had emerged from the case study phase it was concluded necessary to explore the organisational aspects of cognitive adequacy through the key players who emerged within the paradigm. Therefore in following the methodology of chapter four a variation of the 'post test only control group' design (see Frankfort-Nachmias & Nachmias, 1994) and the contrast logic model was used. This
variation on the solomon four-group design and the classical design allows random assignment to either the experimental or control group and permits for measurements to be taken either during or after the introduction of the independent variable. This does present certain limitations on the study findings and therefore these have been accounted for in the overall discussion in chapter seven.

6.3.2 Survey strategy

After consideration of the many possible optional variables or attributes available to observe and after reflecting on the requirements in place under the current legal framework it was concluded to utilise the policy domain as the primary level of measurement. In addition it was decided to attempt to gain some understanding of the organisations' current perceived levels of performance and contrast this against the perceived level of importance each sub-domain was allotted. In following other research strategies, in the social science model, data is collected by observing the phenomena being studied. Generally this can be carried out via observational methods, survey research, secondary data analysis and qualitative research. However not all phenomena can be directly observed and therefore it is sometimes necessary to elicit information on the phenomena by asking people who have been subjected to it. To accomplish this it was possible to utilise structured self-completed questionnaires. The advantage of the self-completed questionnaire for this phase was that it was impersonal. It thus allowed for improved anonymity, which it was hoped would produce better responses to the given questions. It was also felt that the postal questionnaire would provide for more considered answers - rather than immediate responses - and permit a much wider geographical area to be studied. It also benefited from the low cost point of view in terms of time and economic factors while equally reducing the bias error of personal interviews.

6.3.3 Measurement indicators

In order to answer the research questions it was originally felt necessary to elicit
information from all key players within the disability paradigm. However on piloting the questionnaire to a representative sample of organisations this did not present a feasible option. Of the seventy questionnaires forwarded to organisations only twelve organisations were able to return a fully completed questionnaire within the time frame permitted. Therefore after exploring alternative options it was concluded that in view of the study methodology and the purpose only the safety manager or safety officer would be asked to respond to the questionnaire. Although this limited the focus of the research findings it was felt that it was sufficient for the purpose of the study.

Four main constructs were to be explored at this stage. These included; a profile of the organisation, such as number of employees, geographical location and industrial sector; the level of organisational adoption and integration of quality initiatives; the policy domain; responsibility; communication and problem resolution arrangements for disabled employees.

6.3.4 Questionnaire construction

In this phase of the study the questionnaire was used as the main instrument for collecting data on the phenomena of interest. Thus the main focus of the questionnaire was the question to be answered by the study. Therefore the major consideration was to ensure that when formulating the questions, the content, structure format and sequence all married up to guide the respondent to answering those questions most important to the study. The actual content of the questions was mixed. Some were factual, others opinion, and some were attitudinal. The factual questions presented limited problems when it came to validity as they provided factual dichotomous responses. The attitudinal questions however were scalar and as such were more problematic. To improve internal validity and reliability the scales were constructed by following the methodology advocated by Oppenheim and Agresti (1990). Individual self report items were standardised with means of 0 and standard deviations of 1 and averaged across items to create scales. Cronbach alpha coefficients were calculated where necessary.
6.3.5 Data collection

As reported in chapter four while using a postal questionnaire it was acknowledged that it would have its own internal disadvantages. The first being that the questions would need to be very simple and free - as much as possible - from jargonism. The questionnaire would have to be tested for validity and reproducibility and was open to bias of its own. A further number of disadvantages with the self completed postal questionnaire included; the researcher was not in a position to probe beyond the given answers; had little control over who the questionnaire was answered by and such methodologies are subject to low response rates. These low responses may affect the results and thus the external validity of the study's findings. To address these disadvantages, follow up interviews were carried out as part of case studies and the questionnaire was addressed specifically to the safety manager. Validation was on completion of the questionnaire by analysis of name and job title. Furthermore the questionnaire was fully piloted, a stamped addressed envelope was included (Dillman & Moore, 1983), and non-respondents were contacted by telephone (Nederhof, 1988) and in writing (Miller, 1977). The use of registered post had previously been considered however had been dismissed due to cost implications and literature indicating this might have a negative effect on the response rate (Nederhof, 1988).

Question responses to likert type scales were treated as individual test items and where appropriate test battery questions were summed and analysed, where appropriate, using parametric tests. Where parametric test criteria were breached non-parametric tests were used. These included Wilcoxonian matched pairs, Chi square and log-linear analysis.

6.3.6 External validity

The sample units were chosen from a population frame drawn from the membership databases provided by the Engineering Employers' Federation and The British Retail Consortium. Both organisations are considered to represent the specific sector groups of
this study. From the population frames each unit was categorised by size and industrial sector. Origionally it was intended to separate the sampling units into TQM and non-TQM organisations. However as the study developed it soon became apparent that the databases in which the information was held were not as efficient as anticipated and it was not possible to interrogate them as thoroughly as intended. This was an important aspect of the study and as such a contingency approach had to be adopted. It was therefore concluded to randomly sample the sampling units based upon their sector and size. It was then necessary to analyse the TQM aspect of the study at the post response stage rather than the pre-stage. Although not ideal this methodology has been utilised on similar studies such as Harrison (1994).

6.3.7 Sample frame

To achieve the correct profile of sampling units within a 95% confidence interval the following recommended (Pearson & Turton, 1993) calculation was made:

\[ n = \frac{1.96^2pq}{D^2} \]

Where 'n' equals number of sampling units, \( p \) is the proportion of the population containing the attribute, \( q \) is equal to \((100-p)\) and \( D \) is equal to the squared level of accuracy required. In order to reduce type i and type ii errors this indicated that a minimum sample size of 400 was required for each sector. In order to compensate for anticipated low response rates it was concluded that three thousand two hundred questionnaires would be forwarded to a stratified sample. To account for the difference in the population of gender, sector and work activity a disproportionate stratified sample was used.
6.4 Questionnaire results

6.4.1 Introduction

Of the three thousand two hundred questionnaires forwarded to the target population 1321 questionnaires were returned, representing a response rate of 41 per cent. Of these a number, 40, were deemed to have been completed in a manner not appropriate for further consideration. Overall 1281 completed questionnaires were included for further analysis. On return, questionnaires were subjected to Exploratory Data Analysis (EDA) and cleansing. After initial data screening the first area to be analysed was that of the population profiles of the organisations for the different domains.

6.4.2 Organisational profile

As illustrated in table 6.1 at the categorical level of analysis 56 per cent of respondents were from the engineering sector and 44 per cent were from the retail sector. Of these 24 per cent and 12 per cent respectively had adopted a TQM programme.

<table>
<thead>
<tr>
<th>Category</th>
<th>Returned</th>
<th>% of Total</th>
<th>TQM</th>
<th>% of Total with TQM</th>
<th>Disabled</th>
<th>% of Total who employed disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>722</td>
<td>56.4</td>
<td>177</td>
<td>24.5</td>
<td>336</td>
<td>62.0</td>
</tr>
<tr>
<td>Retail</td>
<td>559</td>
<td>43.6</td>
<td>68</td>
<td>12.1</td>
<td>203</td>
<td>38.0</td>
</tr>
</tbody>
</table>

Of the total sample units 1274 reported they had adopted a quality initiative of some type, however when asked to identify the nature of the QIP. The dominant programme was BS5750/ISO9000. This is illustrated in table 6.2. Moreover two hundred and forty five organisations from the sample frame reported to following a TQM programme.
Table 6.2 Quality Improvement Programmes

<table>
<thead>
<tr>
<th>Programme</th>
<th>Value</th>
<th>Frequency %</th>
<th>Valid %</th>
<th>( n^* )</th>
<th>( n^* )</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS 5750/ISO9000</td>
<td>1.00</td>
<td>714</td>
<td>55.7</td>
<td>57.6</td>
<td>371</td>
</tr>
<tr>
<td>CWQM</td>
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<td>28</td>
<td>2.2</td>
<td>2.3</td>
<td>11</td>
</tr>
<tr>
<td>CQI</td>
<td>4.00</td>
<td>21</td>
<td>1.6</td>
<td>1.7</td>
<td>11</td>
</tr>
<tr>
<td>TQM</td>
<td>5.00</td>
<td>245</td>
<td>19.1</td>
<td>19.8</td>
<td>177</td>
</tr>
<tr>
<td>Customer Care</td>
<td>6.00</td>
<td>21</td>
<td>1.6</td>
<td>1.7</td>
<td>20</td>
</tr>
<tr>
<td>QA</td>
<td>7.00</td>
<td>49</td>
<td>3.8</td>
<td>4.0</td>
<td>35</td>
</tr>
<tr>
<td>Other Quality prog.</td>
<td>8.00</td>
<td>161</td>
<td>12.6</td>
<td>13.0</td>
<td>72</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1281</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Using the marginal totals, of the 1274 organisations that responded to the question of organisation size 66 per cent considered they belonged to a large organisation. Forty five per cent employed less than 100 employees and 12 per cent more than 500 employees (\( n=154 \)).

Table 6.3 Number of Employees

<table>
<thead>
<tr>
<th></th>
<th>&lt;50</th>
<th>51-100</th>
<th>101-150</th>
<th>151-250</th>
<th>251-500</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>62</td>
<td>177</td>
<td>102</td>
<td>130</td>
<td>145</td>
<td>722</td>
</tr>
<tr>
<td>Retail</td>
<td>197</td>
<td>138</td>
<td>59</td>
<td>73</td>
<td>37</td>
<td>552</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>259</td>
<td>315</td>
<td>161</td>
<td>203</td>
<td>182</td>
<td>1274</td>
</tr>
<tr>
<td>%</td>
<td>20.3</td>
<td>24.7</td>
<td>12.6</td>
<td>15.9</td>
<td>14.3</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Of the 87 per cent of organisations that had adopted a QIP, 80 per cent of respondents (safety managers) described themselves as interested or very interested in quality and less than 4 per cent expressed the opinion that they were either disinterested or dismissive of quality as a concept. Five per cent stated they did not know.

In terms of programme maturity 32 per cent of respondents (\( n=245 \)) had adopted the TQM programme for a minimum for five years prior to the questionnaire, 22 per cent between three to five years, 21 per cent between one to two years and 10 per cent below one year. An interesting development was the level of reported integration of health and safety within the quality improvement programme. More than 55 per cent of respondents claimed they had integrated their SMS within the QIP; with 13 per cent reporting full
Of organisations that had adopted a TQM programme (n=245) 40 per cent of these followed the model advocated by Dr. Deming, 34 per cent the Juran model and 18 per cent Crosby's model. Three other organisations suggested they followed the models advocated by Kanizowa and Taguchi. To explore the depth of these TQM programmes and facilitate a similar check on adoption as was carried out in chapter five, using Porter's matrix (1994). Respondents were requested to indicate, from a closed selection, which elements their TQM included. These covered adoption of a mission statement (10 per cent) and defined responsibility for tasks (25 per cent). In addition 16 per cent had defined objectives for the organisation, of which 10 per cent had a clear strategy to achieve these aims and objectives and 9 per cent had also identified critical success factors for the organisation to meet the stated objectives. This facilitated verification of the organisations' adoption of a TQM programme. In addition all responses were analysed to explore the use of factors associated with Porter's matrix by non-TQM organisations. As would be expected non-TQM organisations displayed limited use of quality tools.

6.4.3 Policy domain

During this part of the questionnaire, data was analysed from all respondents. Respondents were asked to complete a closed question set with dichotomous responses on the policy domain for HSW and the paradigm of disability. The first question set established the number of organisations which had a written or formal policy on for instance HSW - 99 per cent (n=1281; See table 6.4). Seventy eight per cent had a policy on risk assessment; 20 per cent reported some form of policy on the recruitment of disabled employees; 39 per cent reported a policy on pre-employment screening; 4 per cent on welfare provisions and 14 per cent reported to have a formal policy on the hardware provisions in place for disabled. Further funnelling questions established however that over 90 per cent of these policies were directly related to ensuring equality.
of opportunity within the recruitment process.

Those organisations who directly employed disabled were then funneled to a further question set which explored the same aspects however this time it sought to establish the use of informal processes and policies related to the disability paradigm. The first of these to be addressed was the existence of a policy on recruitment of disabled employees where 49 per cent felt they had an informal policy; 94 per cent had one on pre-employment screening of potential employees; 42 per cent on welfare provisions (software); 33 per cent on hardware provisions and 21 per cent reported to have a policy on rehabilitation. Overall nearly twice as many organisations within the engineering sector had a policy compared to those in the retail sector and they could all be considered to be large organisations. No SMEs had such a policy.

Respondents were asked if they had developed informal policy/procedures on the safety implications of employing the disabled. Only 56 per cent (n=301) of respondents indicated they had such documentation, with two thirds of these being in the engineering sector. In contrast when respondents were asked a similar question regarding the safety implications of disabled who were not in employment, such as pedestrians or visitors, 12 per cent or 161 respondents had such documentation. However this time the retail sector made up a third more of the respondents and these were all classified as large well established organisations.

To seek out the uptake of risk assessment and occupational health provisions on a more general level respondents were asked if they had policies or procedures documenting risk assessment requirements and occupational health provisions. Nearly 80 per cent of the total respondents (n=1001) had such documentation, of which 564 were from the engineering sector and 437 from the retail sector. Once more, in contrast, a similar question was set for disabled employees and less than 2 per cent of respondents had actually documented risk assessments for disabled employees.
Table 6.4 Responses to domain question set on the disability paradigm by sector

<table>
<thead>
<tr>
<th>Policy domain</th>
<th>Retail</th>
<th>%</th>
<th>Engineering</th>
<th>%</th>
<th>Total</th>
<th>Total % of employed disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruitment of disabled</td>
<td>84</td>
<td>31.6</td>
<td>182</td>
<td>68.4</td>
<td>266</td>
<td>49</td>
</tr>
<tr>
<td>Pre-employment screening</td>
<td>156</td>
<td>30.5</td>
<td>355</td>
<td>69.5</td>
<td>511</td>
<td>94</td>
</tr>
<tr>
<td>Welfare of disabled</td>
<td>77</td>
<td>33.3</td>
<td>154</td>
<td>66.7</td>
<td>231</td>
<td>42</td>
</tr>
<tr>
<td>Disabled provisions while in employment</td>
<td>58</td>
<td>31.9</td>
<td>124</td>
<td>68.1</td>
<td>182</td>
<td>34</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>36</td>
<td>32.1</td>
<td>76</td>
<td>67.9</td>
<td>112</td>
<td>21</td>
</tr>
<tr>
<td>Safety aspects of disabled</td>
<td>113</td>
<td>37.5</td>
<td>188</td>
<td>62.5</td>
<td>301</td>
<td>56</td>
</tr>
<tr>
<td>Disabled non-employees</td>
<td>97</td>
<td>60.2</td>
<td>64</td>
<td>39.8</td>
<td>161</td>
<td>12.8</td>
</tr>
<tr>
<td>Risk assessment (general)</td>
<td>437</td>
<td>43.7</td>
<td>564</td>
<td>56.3</td>
<td>1001</td>
<td>78.6</td>
</tr>
<tr>
<td>Health and Safety (generic)</td>
<td>559</td>
<td>43.6</td>
<td>721</td>
<td>56.4</td>
<td>1281</td>
<td>99.0</td>
</tr>
</tbody>
</table>

6.4.4 Policy deployment

Respondents were asked to indicate if the policy provisions were deployed and if so which particular key player within the organisation administered or deployed the policy. Of respondents nearly 24 per cent (n=302) indicated that key personnel would administer the policy. However, the interpretation of this result was influenced by the fact that over 63 per cent failed to respond to the question. This may reflect a further factor within the communication matrix of the organisation. All respondents were asked a question set which sought to identify those key personnel most likely to administer such a policy for disabled employees.

Table 6.5 illustrates that most respondents to the question were of the opinion that safety professionals should administer any policy related to health and safety. This represented 10 per cent of all respondents and 38 per cent of those who answered the question.
### Chapter Six

#### Table 6.5 Personnel most likely to administer policy

<table>
<thead>
<tr>
<th>Value Label</th>
<th>Value</th>
<th>Frequency</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior management</td>
<td>1.00</td>
<td>77</td>
<td>6.0</td>
<td>22.0</td>
</tr>
<tr>
<td>Personnel officer</td>
<td>2.00</td>
<td>98</td>
<td>7.7</td>
<td>28.0</td>
</tr>
<tr>
<td>Safety officer</td>
<td>3.00</td>
<td>133</td>
<td>10.4</td>
<td>38.0</td>
</tr>
<tr>
<td>Occupational nurse</td>
<td>4.00</td>
<td>14</td>
<td>1.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Other</td>
<td>5.00</td>
<td>28</td>
<td>2.2</td>
<td>8.0</td>
</tr>
</tbody>
</table>

#### 6.4.5 Risk assessment and risk perception

Although only 2 per cent of respondents had developed a policy on risk assessment for the disabled there appeared to be an accepted norm that as a group they presented a risk. The questionnaire sought to support the case study findings which concluded that, as a general theme, safety professionals perceive disabled employees to present a degree of risk. Respondents, therefore, were requested to answer a question set on their perception of the risk each type of impairment presented. Groups of impairments were ranked on an ordinal value scale ranging from 'no risk' to 'very high risk'. Table 6.6 illustrates support for the case study findings that safety professionals perceive categories of impairment differently in terms of risk and significance. These results represent the total population sample and include those organisations who employed disabled and those that did not. Therefore a sub-sample of only those who employed disabled was further explored and differences analysed. In all cases statistically significant differences existed between the general population and those who employed disabled. Those who employed disabled ranked the risk factor higher. These results add support for the emerging findings that it is perceived by safety professionals that risk assessments are required for disabled employees and that safety professionals perceive certain impairments statistically different in terms of risk. Therefore on drawing on this data and that gathered from questions on risk assessment it was concluded that although the dominant theme was not to carry out risk assessment at the individual level safety professionals do actually perceive a risk to exist.
### Chapter Six

<table>
<thead>
<tr>
<th>Type of impairment</th>
<th>NR</th>
<th>VLR</th>
<th>LR</th>
<th>MR</th>
<th>HR</th>
<th>VHR</th>
<th>Median</th>
<th>Missing</th>
<th>(n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetraplegic</td>
<td>38.4</td>
<td>7.5</td>
<td>5.7</td>
<td>12.6</td>
<td>18.9</td>
<td>17.0</td>
<td>5</td>
<td>168</td>
<td>1113</td>
</tr>
<tr>
<td>Amputees</td>
<td>10.3</td>
<td>11.5</td>
<td>12.2</td>
<td>23.7</td>
<td>31.4</td>
<td>10.9</td>
<td>4</td>
<td>189</td>
<td>1092</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>28.0</td>
<td>6.2</td>
<td>6.8</td>
<td>10.6</td>
<td>20.5</td>
<td>28.0</td>
<td>5</td>
<td>154</td>
<td>1127</td>
</tr>
<tr>
<td>Ocular imp.</td>
<td>13.9</td>
<td>5.1</td>
<td>9.5</td>
<td>12.7</td>
<td>33.5</td>
<td>25.3</td>
<td>5</td>
<td>175</td>
<td>1106</td>
</tr>
<tr>
<td>Audio imp.</td>
<td>3.1</td>
<td>10.5</td>
<td>19.8</td>
<td>29.6</td>
<td>28.4</td>
<td>8.6</td>
<td>3</td>
<td>147</td>
<td>1134</td>
</tr>
<tr>
<td>Muscular imp.</td>
<td>6.3</td>
<td>16.3</td>
<td>15.6</td>
<td>18.8</td>
<td>28.8</td>
<td>14.4</td>
<td>3</td>
<td>161</td>
<td>1120</td>
</tr>
<tr>
<td>Cardio.</td>
<td>9.3</td>
<td>6.6</td>
<td>7.1</td>
<td>17.5</td>
<td>32.2</td>
<td>15.8</td>
<td>4</td>
<td>147</td>
<td>1134</td>
</tr>
</tbody>
</table>

Legend: NR = no risk VLR = Very low risk MR = medium risk HR = High Risk VHR = Very high risk

Interestingly, of the impairments identified within the question set, those ranked high include tetraplegics, epileptics and those who have severe sight impairments. These were also the criteria previously identified, during the case study phase, which were most problematic in terms of legal compliance and the domains of communication of information and policy deployment.

### 6.5 Responsibility

The questionnaire sought to provide supporting evidence of emerging patterns within the study i.e. that within organisations certain patterns of responsibility emerged for the disability paradigm. As described earlier responsibility could be classified into primary and secondary. The questionnaire sought to determine levels of both primary and secondary responsibility by asking respondents to identify from a closed question who was responsible for the health and safety of disabled employees. Each type of impairment was categorised and addressed separately. The responses are illustrated in table 6.7, where broadly speaking senior management were perceived to be directly responsible for ensuring each of the elements specific to disabled employees. Interestingly dermatitis was ranked to be more of a responsibility for the competent person as opposed to senior or line management. All differences were tested for statistical significance and all were significant at the 5 per cent level.

---

6 - 300
## Table 6.7 Degree of perceived organisational responsibility by key players(%) 

<table>
<thead>
<tr>
<th>Impairment</th>
<th>SM</th>
<th>LM</th>
<th>CP</th>
<th>OH</th>
<th>Other</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>50.0</td>
<td>13.8</td>
<td>19.6</td>
<td>7.2</td>
<td>9.4</td>
<td>1128</td>
</tr>
<tr>
<td>Hearing</td>
<td>30.8</td>
<td>20.5</td>
<td>25.3</td>
<td>14.4</td>
<td>8.9</td>
<td>1119</td>
</tr>
<tr>
<td>Occular</td>
<td>27.5</td>
<td>19.7</td>
<td>23.9</td>
<td>16.9</td>
<td>9.9</td>
<td>1121</td>
</tr>
<tr>
<td>Cardiac</td>
<td>32.1</td>
<td>18.7</td>
<td>19.4</td>
<td>14.2</td>
<td>13.4</td>
<td>1124</td>
</tr>
<tr>
<td>Asthma</td>
<td>29.1</td>
<td>18.7</td>
<td>21.6</td>
<td>17.9</td>
<td>11.2</td>
<td>1110</td>
</tr>
<tr>
<td>Dermatitis</td>
<td>21.5</td>
<td>24.2</td>
<td>25.5</td>
<td>18.1</td>
<td>9.4</td>
<td>1049</td>
</tr>
<tr>
<td>Health surveillance</td>
<td>24.5</td>
<td>15.2</td>
<td>30.5</td>
<td>17.2</td>
<td>10.6</td>
<td>1121</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>37.4</td>
<td>19.7</td>
<td>15.6</td>
<td>12.9</td>
<td>12.9</td>
<td>1108</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>35.4</td>
<td>27.1</td>
<td>16.0</td>
<td>9.7</td>
<td>8.2</td>
<td>987</td>
</tr>
</tbody>
</table>

SM = senior management  
LM = line management  
CP = competent person  
OH = occupational health  

### 6.6 Communication

During the group case study phase, communication was consistently drawn out by competent persons at the organisational level and by members of the target group as presenting certain barriers and problems for disabled employees. As such respondents were asked to give their opinion on certain aspects of the organisations' communication networks and provisions for disabled employees.

Respondents were asked categorical questions on mechanisms disabled employees were afforded to ensure representation at safety committee meetings and consultation methods. Eighty five per cent of organisations did not have a facility to allow disabled employees representation at safety committee meetings. Ninety eight per cent did not have any mechanism by which to facilitate consultation with sensory disabled employees.

A similar pattern emerged during the case study phase which suggested that many sensory and selected physically disabled employees had never read or understood the provisions of their organisation's safety policy and related documentation. Therefore the questionnaire
sought to establish provisions in place. Respondents were asked to indicate mechanisms used to ensure that disabled employees had read and understood the contents of the organisation’s safety policy. Eighty nine per cent of respondents stated they had no formal mechanisms to achieve such a goal. This supported the findings of the previous chapters and suggested that the majority of organisations were in breach of section two and three of the HSW Act. In conjunction with chapters three and four it also provided support that the dominant pattern to emerge from the systems perspective was one of informality.

The questionnaire also sought to ascertain the level of communication that existed between the respondent, disabled employees and internal and external key players. To achieve this, respondents were asked to rank, using a likert type scale, the degree to which they perceived they communicated with key individuals and key groups. Respondents were first requested to indicate their perceived degree of current performance and then how important they perceived communication was with each individual/group.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Current performance</th>
<th>Perceived Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>median</td>
</tr>
<tr>
<td>Occupational nurse</td>
<td>2.82</td>
<td>1</td>
</tr>
<tr>
<td>Disabled employees</td>
<td>1.820</td>
<td>1</td>
</tr>
<tr>
<td>Rehabilitation providers</td>
<td>2.478</td>
<td>2</td>
</tr>
<tr>
<td>EMAS</td>
<td>2.852</td>
<td>2</td>
</tr>
<tr>
<td>DRS</td>
<td>2.280</td>
<td>1</td>
</tr>
<tr>
<td>GP</td>
<td>3.094</td>
<td>3</td>
</tr>
<tr>
<td>Hospital</td>
<td>3.094</td>
<td>3</td>
</tr>
<tr>
<td>PACT</td>
<td>2.268</td>
<td>1</td>
</tr>
<tr>
<td>HSE/EHO’s</td>
<td>4.307</td>
<td>5</td>
</tr>
<tr>
<td>Non-disabled employees</td>
<td>3.264</td>
<td>3</td>
</tr>
<tr>
<td>General communication HSW</td>
<td>2.787</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 6.8 illustrates that current performance relating to individual communication with disabled employees was perceived by respondents to be rated very low. It scored a mean of 1.82 and a median score of 1 compared to communication with non-disabled employees who scored a mean of 3.264 and median value of 3. Also noted to be poor were levels of institutional communication with outside bodies such as Placement Assessment and Counselling Teams and Disabled Resettlement Advisers, with mean scores of 2.268 (median 1) and 2.280 (median 1) respectively. In contrast there was a perception that respondents communicated well with enforcing authorities such as the HSE and local authority EHOs (mean = 4.307, 5). Other communication networks that scored less well were with rehabilitation providers, The Department of Social Security, occupational nurses, general practitioners and local hospitals were also rated less than the fiftieth percentile.

These scores were then compared with respondents' ratings for the perceived degree of importance of each element. In nearly all cases it was reported that improvements were perceived necessary by respondents. To test the difference between organisational current performance and individual importance the Wilcoxon test of significance was applied. These results were then compared between those organisations who employed disabled and those that did not. No differences were found. At the one per cent level all results were significant. Once more the results from the questionnaire supported the emerging findings from previous chapters which suggest that institutional communication was poor to absent when related to the paradigm of disability.
Chapter Six

Table 6.9 Comparative test of Difference

<table>
<thead>
<tr>
<th>Element</th>
<th>Ranks</th>
<th>Mean Rank</th>
<th>n</th>
<th>Rank</th>
<th>Function difference</th>
<th>Z</th>
<th>2Tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational nurses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-ve</td>
<td>266.75</td>
<td>1092</td>
<td>98</td>
<td>(QI LT QCP)</td>
<td>-11.460</td>
<td>&lt;.00005</td>
<td></td>
</tr>
<tr>
<td>+ve</td>
<td>249.06</td>
<td>406</td>
<td></td>
<td>(QI GT QCP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ties</td>
<td>588</td>
<td></td>
<td></td>
<td>(QI EQ QCP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General communication/disabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-ve</td>
<td>241.61</td>
<td>1110</td>
<td>63</td>
<td>(QI LT QCP)</td>
<td>-19.2694</td>
<td>&lt;.00005</td>
<td></td>
</tr>
<tr>
<td>+ve</td>
<td>342.56</td>
<td>602</td>
<td></td>
<td>(QI GT QCP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ties</td>
<td>434</td>
<td></td>
<td></td>
<td>(QI EQ QCP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability counselling groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-ve</td>
<td>242.70</td>
<td>1071</td>
<td>70</td>
<td>(QI LT QCP)</td>
<td>-16.6866</td>
<td>&lt;.00005</td>
<td></td>
</tr>
<tr>
<td>+ve</td>
<td>297.62</td>
<td>511</td>
<td></td>
<td>(QI GT QCP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ties</td>
<td>490</td>
<td></td>
<td></td>
<td>(QI EQ QCP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehabilitation services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-ve</td>
<td>305.33</td>
<td>1092</td>
<td>91</td>
<td>(QI LT QCP)</td>
<td>-15.6619</td>
<td>&lt;.00005</td>
<td></td>
</tr>
<tr>
<td>+ve</td>
<td>317.18</td>
<td>539</td>
<td></td>
<td>(QI GT QCP)</td>
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## Chapter Six

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</table>
6.7 Test of organisational differences

The next phase was to analyse the data to establish any significant differences between those organisations which had adopted a TQM programme and those which had not. Contingency tables were once more used for primary analysis, followed where necessary by controlling of sub-variables and log-linear analysis.

Each question set was cross tabulated with TQM to identify proportional differences. As illustrated by table 6.10, with regard to safety management, the likelihood of an organisation having a policy driving its SMS was very high at 0.80 for TQM and 0.79 for non-TQM organisations. The level of significance was high and as such the results suggest no statistical difference between those organisations who responded to the question set.

<table>
<thead>
<tr>
<th>Criterion measure</th>
<th>TQM</th>
<th>Non-TQM</th>
<th>(n)</th>
<th>Significance (marginal n)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.79</td>
<td>1233</td>
<td>0.84378</td>
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<td>0.99</td>
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<td>Risk assessment on disabled</td>
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<td>0.73</td>
<td>1123</td>
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<td>Recruitment disabled employees</td>
<td>0.40</td>
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<td>Risk assessment for disabled</td>
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<td>0.23</td>
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<td>Individuals</td>
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<tr>
<td>Policy on disabled communication</td>
<td>0.42</td>
<td>0.29</td>
<td>371</td>
<td>0.00005</td>
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</tbody>
</table>

Similar probability was evident with the existence of a safety policy. Both TQM and Non-TQM organisations demonstrated a high probability of having a policy. Proportionately both classes of organisations were equally probable of having carried out and documented risk assessments with 0.76 and 0.73 respectively. These were significant at the 0.05 level suggesting small differences between the cell contents of those organisations who reported
to be following a TQM programme. The same significance was not in evidence for the
disability paradigm, where the probability of both TQM and Non-TQM organisations
having carried out a formal risk assessment on a disabled employee was less than 0.23
and 0.2 respectively. (P=<0.05).

The probability of organisations having a policy on the recruitment of disabled employees
was once more quite low with a probability of 0.42 and 0.29 (n=371). These results
demonstrate that responses were proportionately low on question sets for the disabled
paradigm however slight differences were inevidence for formal policy provision for the
safety of disabled, recruitment of disabled employees and communication provisions.

The next criterion measure to analyse was that of the software provisions in place within
the organisations. As illustrated in table 6.11, once more both marginal and response
totals were low. This must reflect on the interpretation of the results where the probability
of an organisation having a policy document on rehabilitation was 0.60 and 0.59 for TQM
and Non-TQM organisations respectively. This result would once more suggest that there
is no statistical difference between the probability at the 5 per cent level.

Although slight differences existed between respondents some were significant. Data
collected on the probability of active participation in the decision making process for
disabled was analysed. The results of cross correlation and controlling for certain variables
where necessary, suggested the probability that an organisation with TQM who
employed disabled employees would be likely to have some form of participation
mechanism. However the probability of having a committee structure that supported
access for disabled employees was low at 0.31 for TQM and 0.13 for non-TQM (P<0.5).
Table 6.11 Software provisions

<table>
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<tr>
<th>Criterion measure</th>
<th>TQM</th>
<th>Non-TQM</th>
<th>(n)</th>
<th>Significance (marginal n)</th>
</tr>
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<td>0.59</td>
<td>224</td>
<td>0.85576</td>
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<td>Employer actions for disabled</td>
<td>0.53</td>
<td>0.47</td>
<td>182</td>
<td>0.30054</td>
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<tr>
<td>Participation in decision making</td>
<td>0.97</td>
<td>0.89</td>
<td>1120</td>
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<td>Committee for disabled</td>
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<td>0.13</td>
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<tr>
<td>Problem resolution</td>
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<td>0.36</td>
<td>230</td>
<td>0.04787</td>
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<tr>
<td>Provision of safety sign</td>
<td>0.23</td>
<td>0.21</td>
<td>240</td>
<td>0.04987</td>
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</tbody>
</table>

The final aspect of the cognitive adequacy model to analyse was the degree to which problems were resolved for disabled employees. Once more the probability of respondents indicating that problems would not be totally resolved was 0.38 for TQM and 0.36 for non-TQM. Once more this would suggest small but significant differences between those organisations.

Although these differences support the hypothesis that there are differences in the policy domain for the paradigm of disability they do not fully explain these differences. Therefore to provide additional supporting evidence log-linear analysis was used to explore the data further.

6.8 Loglinear model

Although the use of contingency tables allows the exploration of a one and two dimensional table it fails to account for the relationships within the data structure once you go beyond this (Goodman, 1979). On the other hand modern statistical procedures
include Log-Linear analysis which extend the principle of marginal frequencies by exploiting the fact that the logarithm (log) of a product is the sum of the logs of the terms in the product (Kinnear & Gray, 1995). Thus the log of the cell frequencies may be expressed as a linear or additive function of the logs of the components. This summative type model thus allows multi-dimensional tables to be explored and constructed. To explore the data structures and determine the most parsimonious model for the cell frequencies a fully saturated model was used with backward hierarchical iteration. This involved constructing a saturated model (cell frequencies) which contained all component effects and subsequently removing all higher-order interactions to determine the effect this would have on the closeness with which the model predicted the cell frequencies. At each stage of removal the likelihood ratio statistic was calculated to test Goodness of fit.

Algebraically the expected frequencies can be described as

\[ \ln(F_{ij}) = \lambda + \lambda_i + \lambda_j \] (mutually independence model)

or

\[ \ln(F_{ij}) = \lambda + \lambda_i + \lambda_j + \lambda_{ij} \] (Complete interaction model)

Where \( \ln \) represents the natural log of \( F_{ij} \) the expected frequencies and \( \lambda \) represents the geometric mean of the individual expected cell frequencies. In an attempt to explain these observed cell frequency patterns a systematic approach was adopted by testing a number of hypotheses against the null hypothesis \( H_0 = H_1 \) which were generated from the following research hypotheses questions:

Can the pattern of cell frequencies be explained by differences in the number of respondents in the study under each model?

Can the pattern be explained by a combination of number of subjects and the higher incidence of parameters over each sector?

Can the pattern be explained by an interaction of sector and type of organisational SMS?

Can the pattern be explained by both interaction and the difference in the number of cases?

Can the pattern be explained by two way interaction?
Can the pattern be explained by a three way interaction involving all three parameters?

The following models were explored:

TQM/SECTOR/POLICY ON DISABILITY
TQM/SECTOR/REHABILITATION
TQM/SECTOR/PARTICIPATION
TQM/SECTOR/WELFARE
TQM/SECTOR/NON-DISABLED
TQM/SECTOR/COMMUNICATION
TQM/SECTOR/ADMINISTRATION OF POLICY

Each model was tested using a hierarchical, backward elimination model where a fully saturated model was generated and iterative deletion of terms tested the total independence fit. In this manner highest order terms can be deleted from the generating class to determine the model with the greatest parsimony. Models were tested for goodness of fit by application of the chi square Likelihood ratio at each iteration.

The first test was to generate the observed, expected frequencies and the residuals for the saturated model. As illustrated for the TQM/SECTOR/POLICY ON DIS model observed and expected were equal and residuals zero (see table 6.12).

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<tr>
<th>Factor</th>
<th>Code</th>
<th>OBS count</th>
<th>EXP count</th>
<th>Residual</th>
<th>Std Resid</th>
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<td>120.5</td>
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<td>109.5</td>
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Goodness-of-fit test statistics

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Chapter Six

Likelihood ratio chi square = <.00005  DF = 0  P = 1.000
Pearson chi square = <.00005  DF = 0  P = 1.000

Once the saturated model was generated it was then possible to test the various possible effects. Table 6.13 shows that K-way and higher order effects were zero and that using the tail probabilities of the effect, all were significant up to and including the two-way level of complexity. The three way effect was not significant.

Table 6.13 Hierarchical Log-Linear model
Tests that K-way and higher order effects are zero.

<table>
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<th>K</th>
<th>DF</th>
<th>L.R. Chisq</th>
<th>Prob</th>
<th>Pearson Chisq</th>
<th>Prob</th>
<th>Iteration</th>
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Tests that K-way effects are zero.

<table>
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<th>DF</th>
<th>L.R. Chisq</th>
<th>Prob</th>
<th>Pearson Chisq</th>
<th>Prob</th>
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<td>2.916</td>
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Note: For saturated models .500 has been added to all observed cells.

Then, using backward elimination to find the unsaturated model that gives the best fit to the observed data, each was tested in a hierarchical manner to ensure the current model did not give a significantly worse fit than its predecessor. The models were tested for main effects, interactions and association using Z-values and Chi-square. The following (table 6.14) are the partial associations and parameter estimates for the above observed data:

6 - 311
### Table 6.14 Estimates for Parameters

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<th>Parameter</th>
<th>Coeff.</th>
<th>Std. Err.</th>
<th>Z-Value</th>
<th>Lower 95 CI</th>
<th>Upper 95 CI</th>
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<td>$TQM$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>-.6417506002</td>
<td>.04107</td>
<td>-15.62539</td>
<td>-.72225</td>
<td>-.56125</td>
</tr>
</tbody>
</table>

The final model had generating class:

- $SECTOR^*TQM$
- $REHABILITATION^*TQM$

The Iterative Proportional Fit algorithm converged at iteration 0. The maximum difference between observed and fitted marginal totals is 0.00005 and the convergence criterion is 0.393.
Chapter Six

Where * equals an interactional effect between the variables SECTOR and TQM and REHABILITATION and TQM. Any interactional effects between SECTOR and REHABILITATION were removed at the iteration stage as not being significant in the final model. Finally the frequencies estimated by the final model are displayed below which shows that the Chi squared test illustrates the expected frequencies do not differ significantly from the observed frequencies.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Code</th>
<th>OBS count</th>
<th>EXP count</th>
<th>Residual</th>
<th>Std Resid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q17G</td>
<td>Yes</td>
<td>1168.0</td>
<td>70.8</td>
<td>-2.80</td>
<td>-.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2120.0</td>
<td>107.0</td>
<td>12.97</td>
<td>1.25</td>
</tr>
<tr>
<td>Q17G</td>
<td>No</td>
<td>1109.0</td>
<td>106.2</td>
<td>2.80</td>
<td>.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2393.0</td>
<td>406.0</td>
<td>-12.97</td>
<td>-.64</td>
</tr>
<tr>
<td>Q1</td>
<td>Retail</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q17G</td>
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<td>2.80</td>
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</tr>
<tr>
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<td></td>
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<td>96.0</td>
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<td>-1.32</td>
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<tr>
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<tr>
<td></td>
<td></td>
<td>2377.0</td>
<td>364.0</td>
<td>12.97</td>
<td>.68</td>
</tr>
</tbody>
</table>

Goodness-of-fit test statistics

Likelihood ratio chi square = 4.88674, DF = 2, P = .087
Pearson chi square = 4.86678, DF = 2, P = .088

In each case the first model to explore was the one of equiprobability where $p$ cell frequency would be equal however using the data this was not the case. If $H_0$ were true similar frequencies would be expected to fall in each cell. As this is not the case $H_0$ was rejected and it was concluded that the equiprobability model did not fit the data. The next model to explore is that of conditional equiprobability. In this model it was held that the individual cell frequencies represent differences due to assignment of variables. In this case these were controlled for each and once again the data did not fit the conditional equiprobability model. The best fitting model for the observed data within the cells is
Chapter Six

illustrated below:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Best fitting model</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>TQM/SECTOR/REHABILITATION</td>
<td>TQM*SECTOR</td>
<td>Interaction effect</td>
</tr>
<tr>
<td></td>
<td>TQM*REHABILITATION</td>
<td></td>
</tr>
<tr>
<td>TQM/SECTOR/PARTICIPATION</td>
<td>SECT<em>TQM</em>PARTIC.</td>
<td>TOTAL INDEPENDANCE</td>
</tr>
<tr>
<td>TQM/SECTOR/WELFARE</td>
<td>TQM<em>SECTOR</em>WELFARE</td>
<td>TOTAL INDEPENDANCE</td>
</tr>
<tr>
<td>TQM/SECTOR/NON-DISABLE</td>
<td>TQM*SECT NON-DIS</td>
<td>MAIN EFFECT MODEL</td>
</tr>
<tr>
<td>TQM/SECTOR/ADMIN. OF POLICY</td>
<td>SECTOR<em>TQM</em>ADMIN.</td>
<td></td>
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<tr>
<td>TQM/COMMUNICATION/SECTOR</td>
<td>SECTOR<em>TQM SECTOR</em>COMMUNICATION TQM*COMMUNICATION</td>
<td>INTERACTIONAL MODEL</td>
</tr>
</tbody>
</table>

6.9 Conclusion

The results of chapter six support the emerging findings of chapter five from the organisational perspective. These results will now be discussed in the context of the emerging findings of chapters three, four, five and six drawing each together to answer the study hypothesis.
CHAPTER SEVEN
DISCUSSION

'Philosophers have interpreted the World in various ways; the point is to change it'.

Karl Marx 1818-1883 (Source OWLP, 1981)
CHAPTER SEVEN - DISCUSSION

7.1 General

The stage has now been reached where it is possible to draw on the findings of chapter one through to six. The study set out to explore the paradigm of disability in the context of safety management systems and TQM from a socio-organisational perspective, at both the individual and the institutional level. In essence it set out to answer the research hypothesis that those organisations that adopt a TQM philosophy demonstrate improved cybernetic systems of component elements of organisational SMSs for individuals with disabilities. To achieve the study objectives chapter two outlined the context in which SMS operate within the legal framework, explored the concept of TQM and evaluated the literature on the paradigm of disability. Chapters three and four explored the paradigm of disability from the individual perspective. Much was learnt of the dominant perceptions and problems that existed within the paradigm. Typical examples of such included, barriers to communication, reduced level of social support and coping strategies which in themselves acted as barriers to effective communication. This potentially hindered statutory compliance, under the HSW Act and its relevant statutory provisions for all duty holders. Chapter five and six explored the disability paradigm from the institutional perspective using the policy domain and the sub-domain of the cognitive adequacy condition. It was found, once more, that many barriers existed for duty holders to meet their statutory duty under the HSW Act and effective management. These included institutional, cultural and individual aspects.

This chapter will draw out the emerging themes from previous chapters and discuss these findings in relation to statutory compliance. However prior to embarking on such a discussion it is worthwhile reflecting on the limitations of this study.
7.2 Limitations of the study

It is important to explore the limitations of the research so that the findings can be better understood. The study was divided into two components exploring first the individual paradigm and secondly the institutional paradigm. On both counts these were carried out via case study, focus groups and individual interviews. This qualitative approach provides rich evidence of social or organizational constructs which can be categorised and classified as normative. This approach however suffers from low construct validity and as such it was followed by a more probabilistic and random selection of study units. Data was collected using self completed questionnaires which once more have their own limitations. However holistically the study set out to explore and develop insight into an unknown paradigm for which it is believed these tools were appropriate for the level of contemporary understanding.

7.3 The Individual paradigm

Overall chapters three and four explored the disability paradigm within the context of collective protection at the individual level. The findings were developmental and iterative, involving group discussions, focus groups and personal interviews. The more tightly bounded emerging patterns were then supported via a self completed postal questionnaire to a random sample of the target population.

The literature review revealed limited information available on the subject of disability and safety management. In particular however there was evidence to suggest that as a group, disabled employees were susceptible and disadvantaged. Evidence of social disadvantage in terms of gaining and maintaining employment was prolific (Barnes, 1992) and has been suggested elevates individual susceptibility to accidents at work (Katz et al. 1978). Equally literature on the problems faced by disabled employees relating to health and safety issues (Oliver, 1990) was in evidence. Other literature suggested disabled employees have significant differences in isometric push/pull (Das & Black, 1994) i.e. they are weaker, those with mobility impairments require
greater slip resistance (Buczek et al, 1990) and some require elevated levels of illumination (Leneis, 1973) and PPE (Armstrong, 1971). Overall to ensure the proper protection of employees who are disabled their safety must be managed just as any other facet of safety or business process.

The results of the study support and add weight to this fact. The study concluded that individuals within the paradigm of disability demonstrate specific needs, problems when securing their health, safety and welfare when engaged in employment. As discussed previously statutory compliance with HSW legislation can best be achieved via effective management, which in turn can be categorised into the domains of policy, hazard and monitoring (Amis & Booth, 1992).

During the study respondents were asked their opinions on the problems and coping strategies used to overcome these problems. The dominant themes to emerge were that disabled individuals perceive many problems at work. Many of these however are due to barriers created by individual and group attitudes and group dynamics. Although patterns of evidence consistently emerged to suggest the problems faced by the target group were in the main related to the software constructs of SMS there also existed many hardware issues.

In broad terms the majority of individuals consider 'access to safety committee meetings', 'training for other staff on the needs of disabled people' and individual attitudes towards the safety aspects of disabled employees to be ranked highest in terms of importance. In terms of regulatory compliance these are functions which, it is argued, all employers have duties under the general duties of the HSW Act. More specifically relevant statutory provisions are in place which provide for consultation on aspects of an organisation's undertaking. It is also relevant under section 2 (2) c of the Act, that in particular 'such information, instruction, training and supervision as is necessary to ensure, so far as is reasonably practicable the health and safety at work of his employees' is specifically relevant to the aspect of training provision for other staff. Other sections of the Act also provide for such training -although this time indirectly- namely section 7 which places a duty on employees to take reasonable care of himself and others who may be affected by his acts or omissions. It is argued that if employees do not understand the needs of
specific at risk groups they will not be in a position to take reasonable care of them in normal work place conditions or in times of emergencies (section 7 of the HSW Act & regulations 11, 12 and 7 of the Management of Health and Safety at Work Regulations, 1992).

This may also impact upon aspects related to safety attitudes and their relevance to disabled employees. It is well accepted within the framework of contemporary literature that individual attitudes play a lead role in an organisation's safety culture (Lee, 1995; Pidgeon et al 1991; HSE, 1991; CBI, 1992; ASNCI, 1993) and as such it is imperative that they are directed, where possible, in the direction of a positive safety culture. However this is not generally accepted to the same degree within industry. If barriers exist at the individual level the promotion of a positive safety culture will be that much more difficult (Fishbein & Ajzen, 1975).

Furthermore forty eight per cent of respondents indicated they would never communicate with their line manager regarding HSW issues, 22 per cent responded similarly for their supervisor and 7 per cent for their peer group. This has serious implications in terms of duty holders meeting their legal obligations under the Act. In particular section 2(2) a places a duty on holders to 'ensure the provision and maintenance of... systems of work that are, so far as is reasonably practicable, safe and without risks to health'.

In aggregating responses from the group discussions and individual interviews three main constructs emerged as important in relation to the disabled. These were the lack of acceptance of responsibility for their safety and wellbeing, the degree to which they were consulted and communicated with and the issue of resolving problems that arose at work. In broad terms these could be attributed to low levels of social support within organisations in which they were employed.

These findings were then subjected to validation by self completed questionnaire where certain emerging questions were developed through initial responses. When asked to rank a scalar question set on levels of responsibility within their employing organisations, 92 per cent of respondents disagreed that any individual accepted responsibility for their individual safety.
Similarly 84 per cent thought they had not been provided with relevant information and 92 per cent felt problems they had encountered while engaged in employment had not been resolved.

The question set also explored individual importance and institutional commitment for each of the emerging constructs of importance. The findings once more support chapter three. That is, when asked to rank problems associated with degrees of individual importance to the target population and the corresponding degree of institutional commitment provided, significant differences were found. Constructs or processes that emerged included the provision of information specifically relevant to disabled employees' HSW, pre-employment screening, the provision of WC facilities and that of risk assessment. The differential between these constructs, it is suspected, may provide the trigger (as described by Reason, 1990) enabling latent errors (Reason, 1990) resident within organisations to become active errors. These as such may provide the critical success factors (CSFs) and possibly key performance indicators (KPIs) for this group.

As discussed earlier many of these constructs appeared to be related to the dimension of social support provided by the organisation. Social support comprising 'institutional support', 'communication' and 'trust' (Sarason et al, 1987) - was ranked low. Management were ranked as providing the lowest level of social support, supervisors were ranked next and work colleagues ranked highest. As key players within popular SMS models this low level of social support suggested a fundamental barrier to effective process management. In operational terms research has demonstrated that the relationship between key players may, if positive, provide a source of social support that may add to well-being and act as a moderator of stressful events or activities (Lindorff, 1995). In fact Lindorff concluded that social support via workplace relationships is beneficial.

In contrast poor social support has often been found to be detrimental to the health and welfare of employees in a number of studies (Karasek, 1979). For instance Karasek, (1979) found lack of organisational participation and job autonomy to directly result in an increase in depression, exhaustion, sickness rates and pill consumption. Friedlander & Greenburg, (1971) also found individuals who have a low perceived level of support in an organisation fared significantly less
well in training programmes - something which directly impacts on the safety of individuals at work. A number of studies such as Caplan et al. (1975) have found low participation in workplace activities was related to poor moods, escapist drinking and increased levels of smoking. In contrast Margolis et al. (1974) demonstrated that increased opportunity to participate resulted in improved levels of physical and mental health.

Furthermore research has demonstrated poor social relations at work are associated with job stress, role ambiguity and job dissatisfaction (Davidson & Cooper, 1981). In contrast good relationships at work, which is part of social support from management, supervisors and peer group, have been related to decreased levels of perceived work stress (Sutherland & Cooper, 1986). Social support is seen as a function of organisational culture and thus is important in terms of the elements of the cognitive adequacy model. In fact as suggested by Landy and Trumbio (1980) organisational climate or culture may be seen in terms of four factors. That is autonomy, structure, reward and consideration orientation and is related to the dimension of satisfaction and dissatisfaction. They go further and suggest that employees' perceptions of the culture, customs and climate of an organisation are relevant and necessary to understanding the potential sources of ill health in organisations.

Further Landy & Trumbio suggest that social support is associated with the concepts of participation and a sense of belonging and can be categorised by distinguishing between what they term interpersonal support i.e. from individual relationships and institutional support from the general social and communal systems. The data emerging from this study suggested that institutional support provided by key players was low.

It also emerged that between sectors the level of social support provided differed. Those employed within the retail sector emerged as more likely to receive elevated levels of social support than those employees who are employed within the engineering sector.

A further aspect related to the stressors in evidence and the provision of workplace counselling facilities. Although there is no specific legal requirement to carry out workplace counselling for
general employees, it would seem reasonable for individuals who may be at special risk to their health and safety to be provided with such a mechanism where suitable assessment of risk demonstrates it necessary. In fact stress counselling is well recognised as a reasonably practicable control measure in certain conditions (Cooper & Williams, 1995; Levi, et al 1986; Cox, 1993). Therefore if there is a foreseeable need to provide employees with certain counselling facilities to assist in their employment and to prevent ill health there would be a general duty on the duty holder under section 2 (1) of the Act. Furthermore as with all those issues raised thus far there is a new requirement under the Disability Discrimination Act 1995 (DEESS, 1995) to provide reasonable accommodations and make reasonable adjustments for disabled employees. This would also apply to health surveillance if necessary for individuals who were susceptible to environmental conditions or work activities controlled under Control of Substances Hazardous to Health (DOEMP, 1994).

This subsection of the HSWAct is a fundamental aspect of what Robens saw as the systems model allowing industry to self regulate by collectively bargaining on the issues of safety and health with employees or their representatives. If disabled employees are not represented on safety committees - as the results suggest- and if they are not communicating with line management or their supervisory level it must be concluded that, as a group, they are not properly being provided with the resources, facilities, mechanisms or culture to provide such collective bargaining.

The study concluded that these socio-organisational factors were influenced by the degree of social support provided by the institution and individuals within the institution. Social support is deemed to comprise three factors, namely trust, communication and support. In each of these aspects of social support senior management, line management and to a degree supervisory staff were perceived to offer limited value to disabled employees. Equally key players such as safety managers /officers who emerged within the paradigm were also found to be of limited value.

In fact it emerged that disabled individuals use the support mechanisms of external social groups much more so than those of their work groups or colleagues. Notwithstanding this pattern the target population appeared to gain a degree of social support from their peer group or work colleagues. The degree of social support provided within organisations also emerged as
influencing the coping strategies used by disabled individuals. Typically it was reported (see figure 7.1) to include the withholding of information, failing to report accidents, filtering of information, selectively perceiving information and social isolation.

Figure 7.1 Socio-organisational Factors Model for the paradigm of disability

7.4 The Institutional paradigm

The findings of the individual paradigm were then used as a priory to explore the institutional paradigm. At the institutional or organisational level chapters five and six illustrated that HSW compliance followed a model of policy makers, policy deployers, rule enforcers and rule followers. This model is one supported and advocated by the literature produced by academics and the operational arm of the HSE (See figure 5.11 for a model schematic). For the purpose of this study it emerged that this model could be explored by following a cognitive adequacy model (Westrum, 1988) of system analysis. Cognitive adequacy comprised the domains of responsibility, communication and problem resolution. These domains were explored at the
organisational level using the policy domain via case study analysis and validated by self-completed questionnaires.

7.5 Process model

A pattern consistently emerged where organisations identified different functions within the process model. Common to all were policy makers (P1 See Figure 7.2) who would formulate and develop the content of the policy and policy deployers (P2). Operationally the policy was developed to reflect a hierarchical responsibility matrix as illustrated in figure 5.11 which represents the third level of the process model. It is at this level that most differences emerged within organisations. Not unexpectedly the complexity of the matrix was a function of organisational maturity, development, commitment and resources. For some there existed clear and succinct tasks or objectives set, for others, particularly SMEs, the lines of responsibility were broad with a large span of control. The fourth element (P4) of the process model included those who were tasked with the responsibility for enforcing conformance with the systems 'rules'. In nearly all cases this fell operationally to the supervisory level within the organisation. Process phase five (P5) is the communication network that facilitates P1 through to P4 to be effectively deployed within any organisation by allowing the rule follower (P6) to interpret the rules set within the policy. Supporting this phase was a feedback loop (P7) facilitating consultation/communication networks to operate horizontally and laterally. The degree to which this was achieved varied greatly between organisations. When the integrated application of this model was applied to the paradigm of disability certain patterns consistently emerged at both the case and cross case analysis level.

7.6 Policy domain

Organisations with five or more employees have a duty under the HSW Act (section 2 (3)) to document a policy outlining the organisation's statement of intent, organisational arrangements and levels of responsibility for HSW. From the research it emerged that nearly all organisations had such a policy (98 per cent). The content and complexity of the policy however varied and
broadly speaking reflected the complexity and size of the organisation. However complex they
nevertheless adopted a similar pattern, a statement of intent, comprising a single sheet of paper,
followed by an outline of organisational responsibilities and arrangements. In particular those
organisations who had adopted a TQM programme displayed elevated documentary control and
broadly adopted a more strategic approach to the safety management process.

Although there has been criticism of the manner in which the policy provisions of the HSW Act
have been implemented it remains the primary source of performance monitoring by enforcement
authorities. It has also been identified that policies should only be as complex as the process or
norms that are to be controlled (Lewin & Melvin, 1986). Principally the overall objective of
writing a policy is to improve integration and application of the various underlying disciplines
within a background of different constraints. As already demonstrated at the individual level the
disability paradigm is a complex one comprising many barriers. Therefore a policy must be able
to relate to these in terms of strategies and tactics (Lewin & Melvin, 1986) and at the operational
level provide solutions that satisfy the objectives of the system. They must be able to
compensate for the normative barriers that exist at the individual level by providing a culture
which is an enabling and supportive one. Therefore at the strategic level the policy must provide
systems, processes and capability with respect to its goals - underlying values - structures,
technology, information processing and the perceptions attitudes and skills of its people (Jatsch,
1972). These goals can be viewed as a set of non-fixed constraints which solutions must satisfy.

Total Quality Management organisations generally emerged as seeking best practice in HSW, but
as with all organisations in the study they also emerged as demonstrating limited provisions for
the disability paradigm. As reported earlier only a very limited number of the sample unit
organisations (2 per cent) reported a HSW policy that accounted for disabled employees. The
dominant policy provisions to emerge from the study related to discriminatory activities.

However, what did emerge from the study was a set of norms operating at an informal level that
acted as specific and tacit standards of what was acceptable within organisations. That is to say
the policy making domain, of the disability paradigm, was a process of continual adaptation within
Chapter Seven

an informal systems model which Lewin and Melvin (1986) and Emery & Trist (1981) would consider to be a difficult one to operate in. As described in chapter five there were many instances where informal decisions were taken on aspects of safety management, not by the competent person but by work colleagues. This type of system is recognised as open in that it allows energy exchanges within an environment in which a set of interrelated elements, each of which is related directly or indirectly, to every other element, and where no subset of which is unrelated to any other subset (Ackoff & Emery, 1972). In this context such an approach has advantages, in that it is adaptive and one that is able to react or respond to changes to attain the goals. However being based upon group dynamics and informality it equally had many disadvantages. Foreinstance if the organisation's goal was legal compliance this would not be achieved, particularly as it had not been documented and that no formal assessment of risk had been carried out.

7.7 Responsibility/influence

A consistent pattern emerged through out the case study units in that lines of influence/responsibility for disabled employees' health, safety and welfare fell into two categories. One was internal to the organisation and one external to the organisation. Internal key players included the TU representative, human resources, line management, disability co-ordinators, occupational health, facilities and the health and safety manager/fire officer. Within SMEs however these functions in many cases were carried out by the same individual. Other themes that emerged from the cross case analysis included the relationship between the level of responsibility afforded key players and the degree of influence they had on the operational activities and barriers disabled employees were subjected to. Refering back to Figure 5.12 it illustrates that, broadly speaking, although HR, LM1-31 and the FD were formally responsible for certain aspects they were not very influential according to disabled employees. This is demonstrated by the distance from the centre of the paradigm to the outermost aspect of the page. For example LM2 have the most operational responsibility but the least perceived influence and LM4 the least responsibility but the most perceived influence. Externally three main groups were identified as

1LM1 - Senior management; LM2 - Departmental Management LM3 - Supervisory level
having an operational impact on the HSW aspects of disabled or impaired employees. These include the regulatory bodies such as the HSE, Local Authority Environmental Health Officers and Employment Medical Advisors. Support groups such as the RNID, Scope, RNIB and local groups are varied and sometimes very specific. This category also includes the Placement Assessment and and Counselling Teams (PACT) and Disability Employment Advisers (DEAs) who operate from job centres. Finally there was the new Disability Commission set up under the DDA 1995.

Within the responsibility matrix the study identified many organisational and individual barriers. These included the interrelationships between organisational key players and absence of a structured policy allocating responsibility and ensuring competency of those allocated responsibility. Two distinct levels of organisational responsibility for HSW existed. The first can be termed primary responsibility where there is a general level of policy acceptance. This general level is that which is generally seen as acceptance of or ownership of safety and primarily directed at line and senior management. The next level of responsibility can be termed secondary or specialist. This is where key players either internal or external to the organisation are deemed to be competent to be responsible for a certain aspect of the individual or organisational risk. These levels of responsibility can be further categorised as formal, via the policy document, or informal as part of the group dynamics of the organisation. The study concluded that the formal route of responsibility was not deemed effective at either the individual or institutional level. A fundamental finding of the study was that even though senior management and line management were primarily responsible for safety for disabled employees they demonstrated limited levels of social support and in particular poor levels of individual communication. It was concluded that low level of support reflected the absence of understanding on both sides.

Equally problematic was the fact that the findings of chapter five and six predominantly suggest that competent persons for organisations (safety managers) had not carried out formal risk assessments on physically or sensory disabled or impaired individuals. This was in contrast to the degree of risk respondents associated to disabled groups. When respondents were asked to rank different types of disabilities and impairments in terms of the risk posed, they ranked
impairments such as loss of limbs, impairment of sight, hearing and epilepsy as a 'high' to 'very high' risk.

This could be attributed to a lack of relevant information preventing those who were in a position to make decisions, making informed decisions. Further complexities to the paradigm included the lack of interface between each department, confidentiality, and individual key player's own attitudes and perceptions. These caused individuals to filter information, with hold information and perceive information selectively. The communication networks were possibly the most important construct between the paradigm of disability and HSW compliance and thus effective safety management.

7.8 Communication Networks

In reviewing the emerging findings of the study the evidence (see figure 5.14) suggested that certain blockers or barriers exist for disabled employees which non-disabled employees were not necessarily exposed to. Key players in phases P1 and P2 felt they 'did not have suitable or sufficient knowledge' to incorporate policy statements on the HSW issues or make decisions regarding disabled employees at the policy level. In real terms this was reflected in the P3 process where although limited best practice was identified the dominant theme was of informal processes of responsibility based upon group dynamics without information. If no individual accepted ownership of the decision making process it would not take place.

The greater barrier however emerged between phases P4, P5, P6 and P7. The first identified was that between P4 and P5 where disabled employees were not afforded adequate provisions to be in a position to comply with rule sets relevant to HSW. Broadly, trust was absent between disabled employees and the rule set enforcers. These emerging findings support those of chapters three, four, five and six. This was once more a function of the communication network. Communication can be categorised as verbal and non-verbal (Robbin, 1994) and potentially is the most heavily weighted factor within the formal systems model. As discussed and illustrated in chapter five (see Baron & Greenberge, 1990 and figure 5.20) communication networks for the disabled are complex situations and therefore require equally complex communication networks. As Berlo,
(1960) explained communication includes a source, encoding of the information, channeling, decoding, recovery and feedback. However during the study there were many barriers to the effectiveness of such a process and and furthermore 'formal' and 'informal' processes existed. During the study it emerged that many of the formal non-verbal links were either restricted or absent for both sensory and physically impaired employees. Classical patterns that emerged included sensory disabled who had never read the organisation's HSW policy, physically disabled with restricted access to both written and verbal communications and the absence of any form of employee consultation between disabled rule followers, policy makers and organisational enforcers. On further probing it soon became apparent that because there was no ownership within the system/process, no individual had taken the necessary time to read the contents of the policy to disabled employees or make alternative arrangements to meet their statutory duty under the HSW Act (sect 2(3)). This states:

'Except as in cases as may be prescribed, it shall be the duty of every employer to prepare and as often as may be appropriate revise a written statement of his general policy with respect to the health and safety at work of his employees ... and to bring the statement and any revision of it to the notice of all his employees'

Similar complexities emerged with signage which are covered under the recent Safety Signs Regulations 1996, access to minutes and memos relevant to safety and safety committee meetings. These are all aspects of the Act which in statutory terms the duty holder must make arrangements for. Section 2(2) (c) which states the employer shall ensure 'the provision of such information... as is necessary to ensure so far as is reasonably practicable, the health and safety of his employees. is to cover such an issue. Section 2 (4,6 &7) also addresses disabled employees not being afforded an appropriate system to participate in the consultation process. Many of these barriers were compounded by emerging patterns indicating that restrictions in Kinesics- the study of body movement when communicating non-verbally - presented additional barriers to effective communication. As long ago as 1952 it has been argued (Birdwhistell, 1952) that every movement we make has a meaning and no movement is an accident. This being true, both sensory and physically impaired employees have further barriers to overcome when attempting to communicate their message. Other emerging patterns suggest that key players 'filter' information from the target group and 'selective perception' was more in evidence for disabled employees
than non-disabled. Filtering (Robbin, 1976) is the process of the sender manipulating the information so that it will be seen in a more favourable light by the receiver. This factor emerged as a consistent pattern throughout the study. The theory of selective perception is where receivers of information act selectively on the decoding process based upon their own needs, motivation, experience and background (McCrosky, et al. 1976). The research demonstrated that this in turn influenced the coping strategies used by disabled employees and subsequently the decision making process at the institutional level. Once more this also emerged as a consistent pattern throughout all organisations. Possibly this criterion of selective perception and filtering played a much greater role in the paradigm than was originally anticipated. To a greater degree the barrier that it put in place potentially resulted in the degree of perceived risk attached to each impairment. Many quite experienced safety managers perceived various impairments or disabilities as 'very high' or high in terms of their risk to themselves or others. See figure 7.2.

Figure 7.2 Communication barriers within the paradigm of disability
For disabled employees there emerged a pattern of both responsibility and communication. The
dominant pattern of communication networking emerged as 'informal' and 'peer group'. Formal
processes for communicating were absent as were communication networks with line management,
which included supervisors. As illustrated in figure 5.16 and 5.20 disabled employees appear to
be communicated to by many individuals. However much of this communication is often in one
direction (as indicated by the arrow head) and informal. PACT/DEA and peer group employees
emerged as the only groups within the network where the communication process was perceived
to be a two way process. Placement Assessment and Counselling Teams, being external to
organisations, were of limited daily use and were in the main responsible for providing an entry
point in to employment. They had limited time and access to the placed employee after the initial
placement process was completed where time became even more restricted. Although outside
the remit of this study it is the opinion of the researcher that these teams and particularly the
Disabled Employment Advisors could play a more active role in securing the inclusion of
disabled employees' provisions within organisational SMSs and particular the policy domain.
Equally important at the operational level was access to such facilities as DEAs and funding
availability through 'The access to work programme'. Predominantly it was only the large
organisations and in the main the Personnel or Human Resource department who were aware of
such assistance. Safety Advisers or Safety managers were not aware of any financial assistance
to improve the health and safety aspects of employees with disabilities, predominantly most were
not aware of the Disability Discrimination Act 1995 and its implications for them as professionals.
This absence of an effective communication process was a function of lack of information
relevant to the paradigm of disability.

A similar pattern emerged with line management. Although they were directly responsible for the
health, safety and welfare of all employees there were clear barriers to them being effective in
communicating, firstly the 'rule set' they had developed and secondly deployment of the
organisation's safety objectives to impaired employees. Most line managers had not received any
formal disability awareness training or were not knowledgeable about issues that would impact on
the safety of disabled employees. Many LM2 managers never discussed issues with individual
employees particularly those with disabilities. The same could be said, if less so, for LM3 who
were the supervisionary level. Those who actually communicated and provided most assistance with individual coping strategies used by disabled employees were their own peer group or work colleagues. Much of the time this was informal and unauthorised. Particularly disconcerting was the norm that this approach would always be effective in cases of emergency and changing patterns of employees. Consistently typically the organisational norm was for such issues as MOE to be resolved at the shop floor or peer group level. As previously reported in case study units although this was acceptable in some circumstances in others it would perhaps not meet the requirements of sect 2 (2)d which states:

'So far as is reasonably practicable as regards any place of work under the employer's control, the maintenance of it in a condition that is safe... and the provision and maintenance of means of access to and egress from it that are safe and without such risks'

The level of responsibility was in many ways a product of the communication process that emerged across all case study units. As illustrated in chapters three and four the deployment of the policy and its contents is a function of the communication mechanisms and processes within the organisation. Communication is a two way process involving the exchange of information.

Throughout the paradigm the study identified many barriers to effective communication resulting from the organisation itself, individual key players and the disabled individual. Examples of physical barriers included lack of rule sets, poor mediums in which non-verbal communication was presented, and poor physical access to communication mediums and networks. For instance if no policy exists to outline a commitment to ensuring safe egress for mobility impaired employees there will be no procedure and consequently it will not be a breach of a rule set to manually handle a person who is impaired. Equally if an individual is visually impaired to the degree that they cannot read the policy and its arrangements how may they understand the implications for them as individuals and equally important what rule set they must comply with to protect other employees? Finally cross case analysis revealed that many disabled employees are restricted in accessing communication networks such as safety committees and consultation processes.
Further barriers emerged from the more human factors aspect of the system. Disabled employees and key players in the HSW process reported actively filtering information. The disabled filtered out information which was perceived to be 'used against them' in terms of job security, promotional prospects or simply being different. Key players reported filtering information which they perceived may offend individuals and potentially may not be 'politically correct'. Of equal importance was the reported practice of selective perception. On many occasions both disabled employees and key players reported to process the information received from other parties selectively. In effect they miss those aspects of the communication which is not important to them in the context of their needs and motivations.

In terms of differences between those organisations who had adopted a TQM philosophy although there were small but significant differences between specific aspects of performance evaluation, data acquisition, and problem resolution the study would support the null hypothesis that in the context of the paradigm of disability no difference existed between organisations that follow a TQM programme and those that do not. In terms of formalised SMS provisions for disabled employees within both types of organisations they were limited.
CHAPTER EIGHT
CONCLUSION
Chapter Eight

8. CONCLUSION

The paradigm of disability and safety management is a complex arena of multifaceted constructs. The results of this study suggest that disabled employees have many limitations which affect their mobility and capability within the working environment, but equally have many attributes. Nevertheless although this group is very diverse in nature and scope of limitations, collectively it demonstrate a recurring pattern of need and expectations regarding health, safety and welfare provisions. In terms of the provisions perceived most important, they emerged to be the softer aspects and in particular what has been termed institutional social support. Social support as a construct comprises, individual trust, individual support and individual communication. With regard to health, safety and welfare provisions each of these general sub-constructs were perceived to be low by individuals within the target group.

In parallel with the individual findings, the study suggests that trust, communication and support were also low at the organisational level and that at the systems level these were informal or absent. In terms of what has been described as cognitive adequacy the study suggests that organisational domains of responsibility, communication and problem resolution were equally limited for the disability paradigm. These results suggest that in terms of safety management systems a difference did exist between the expectations and needs of employees who have physical or sensory impairments and the provisions provided by their organisations to ensure their health, safety and welfare.

One of the more important domains relative to ensuring disabled employees individual health, safety and welfare emerged as the perceived barriers that had build between key stakeholders. Many individuals with physical and sensory impairments were either reluctant or felt they could not discuss issues related to safety or health with their safety officer/managers, direct line management or regulators. Much of this perception was based upon the use and intent of the information communicated in that it would be used
against them rather than for them. Job security was a key area of concern. In contrast, proportionately, trade union representatives were perceived to be more approachable and helpful than other direct key stakeholders. Nevertheless overall it remained that individuals with physical or sensory impairments gained most support from external groups. It was therefore concluded that all stakeholder groups had some part to play in improving understanding by identifying potential barriers to communication and breaking these down at the earliest opportunity.

In terms of whether TQM organisations demonstrated elevated levels of safety management provisions it emerged that slight differences were in evidence for certain organisational processes. These included the application of the tools of quality, such as the use of teams to develop safety improvement, improved statistical use of safety intelligence and commensurately elevated levels of monitoring. However when the study focused on the cognitive adequacy and provisions in place for the target group of disabled employees, key constructs such as responsibility, communication of information and problem resolution emerged as limited. The study concluded that no significant difference was found to exist between organisations who had adopted a TQM programme and those that had not. This perhaps reflected the low level of understanding across both types of organisation rather than a real difference in the culture aspect of those who had adopted TQM and those who had not.

These findings were also evident at the sector level where although the study identified many differences in the culture of the engineering and retail sector, once more the results would suggest that due to the low levels of understanding and knowledge of the disability paradigm no significant differences emerged between sectors. Therefore, in terms of the disability paradigm the study findings support the null hypothesis that no significant differences emerged. TQM organisations are therefore no better at providing organisational support in respect of health and safety provisions, than non-TQM organisations for disabled employees.
Overall the study would suggest that many employees, within the study, had physical and sensory impairments, it was however both society, and organisations as part of that society, which caused those impairments to be disabilities and even handicaps. Organisations and the disabled community have many barriers to overcome before impairments are seen for what they are, merely a restriction of individual function. They must not be seen therefore as a disability or handicap that prevents them from gaining and maintaining employment that is safe and useful. It is hoped this small piece of work contributes to a greater understanding of a vast and under researched area of the social aspects of safety management and may act as a useful catalyst to improve the understanding of the interface between the paradigm of disability and the workplace.
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APPENDICES
Appendix A

DEMING'S 14 POINTS

1. Create constancy of purpose for continual improvement of products and service.
2. Adopt the new philosophy created in Japan.
3. Cease dependence on mass inspection: build quality into the product in the first place.
4. End lowest-tender contracts; instead, require meaningful measures of quality along with price.
5. Improve constantly and forever every process for planning, production and service.
6. Institute modern methods of training on the job for all, including management.
7. Adopt and institute leadership aimed at helping people to do a better job.
8. Drive out fear, encourage effective two-way communication.
9. Break down barriers between departments and staff areas.
10. Eliminate exhortations of the workforce – they only create adversarial relationships.
11. Eliminate quotas and numerical targets. Substitute aid and helpful leadership.
12. Remove barriers to pride of workmanship, including annual appraisals and Management by Objectives.
14. Define top management's permanent commitment to ever improving quality and productivity, and their obligation to implement all these principles.

PHILIP B. CROSBY

Fourteen steps to a quality improvement programme.

1. Make clear management’s commitment to quality.
2. Set up quality improvement teams with representatives from each department.
3. Set in place quality measurement to provide a display of current non-conformance problems. (Understandable and useful to employees).
4. Determine the ‘cost of quality’ and how to use it as a management tool.
5. Raise the level of quality awareness and the personal concern for the company’s quality reputation for all employees.
6. Take corrective action on the problems raised in the previous steps.
7. Plan a ‘zero-defects’ campaign.
8. Train supervisors actively to carry out their part in the total quality improvement process.
9. Hold a ‘zero-defects’ day to create an event that will let all employees know through a personal experience that there has been a change.
10. Goal setting and encouraging individuals and groups to set improvement goals.
11. Encourage employees to communicate to management the difficulties that they have in achieving their improvement goals in the error-cause removal campaign.
12. Recognise and appreciate all those who participate in the campaign.
13. Establish quality controls to communicate on a regular basis.
14. To do it all over again to emphasise that quality programmes never end and that they are indeed a journey and not a destination.

JOSEPH M. JURAN

Company wide quality cannot be delegated

1. Create awareness of the need and opportunity for quality improvement.
2. Set goals for continuous improvement.
3. Build an organisation to achieve goals by establishing a quality council, identifying problems, selecting a project, appointing teams and choosing facilitators.
4. Give everyone training.
5. Carry out projects to solve problems.
7. Show recognition.
8. Communicate results.
10. Incorporate annual improvements into the company’s regular systems and processes and thereby maintain momentum.
Dear sir/madam,

OCCUPATIONAL HEALTH PROVISIONS FOR INDIVIDUALS WITH DISABILITIES

We are in need of your help! We are currently conducting a study of the occupational health needs of individuals who have disabilities. This study is the result of a previous study into the actual provisions in place within employing organisations in UK and a number of discussions with employed individuals who have disabilities.

We believe this to be an extremely valuable study in ensuring that individuals with special needs receive the appropriate level of occupational health, safety and welfare provisions. In addition this study will attempt to thoroughly evaluate the needs of individuals - by asking your selves and your members - and comparing these needs with the actual provisions in place within industrial sectors. It is hoped that this should yield some very useful information for all parties concerned.

In the next month you will be receiving a questionnaire designed to gather useful information regarding the study, however if you feel that you would not wish to participate in this study I would be grateful if you would contact me in writing at the above address. However, I do hope you can see the benefits of such a study and that you will be able to participate.

So that this study will reflect the social, physical and temporal needs of individuals with disabilities we urge you to participate in this study and look forward in anticipation to receiving your completed questionnaire. If you would like to discuss this study in more detail please do not hesitate to contact we either in writing at the above address or by telephone on 0171 739 8181 ext 3574.

Yours faithfully

Mike Williams
Researcher

Dr Leslie Hawkins
Head of Occupational Health and Safety Unit
To
The Quality, Safety and Environment Officer

Dear Sir/Madam,

NATIONAL STUDY INTO QUALITY SAFETY MANAGEMENT PROVISIONS WITHIN THE SERVICE SECTOR

We are in need of your help! We are currently conducting a study of the extent Quality and Safety interrelate within UK companies. This study is the result of a previous study into the actual provisions in place within employing organisations in UK and a number of discussions with employers as to their needs for economic but effective safety provisions.

We believe this to be an extremely valuable study in ensuring that companies utilise limited resources in the most effective and efficient manner. In addition this study will attempt to thoroughly evaluate the needs of companies - by asking those who understand the needs most - yourselves. It is hoped that this should yield some very useful information for all parties concerned.

So that this study will reflect the social, physical and temporal needs of all UK companies we urge you to participate in this study and look forward in anticipation to receiving your completed questionnaire. If you would like to discuss this study in more detail please do not hesitate to contact me either in writing at the above address or by telephone on 0171 739 8181 ext 3574.

Yours faithfully

Mike Williams
Researcher

Dr Leslie Hawkins
Head of Occupational Health and Safety Unit
Dear Sir/Madam

OCCUPATIONAL HEALTH PROVISIONS FOR INDIVIDUALS WITH DISABILITIES

Recently we wrote to you requesting your assistance in a current research study on the management of occupational health and safety for disabled employees. In the letter we requested you contact us if you were unwilling to participate in the study and as we have not heard from you I am pleased to welcome your participation in this very worthwhile and important national study.

As we previously explained the remit of the study is to explore the occupational health needs of individuals who have disabilities. This study is the result of a previous study into the actual provisions in place within employing organisations in UK and a number of discussions with employed individuals who have disabilities.

We believe this to be an extremely valuable study in ensuring that individuals with special needs receive the appropriate level of occupational health, safety and welfare provisions. In addition this study will attempt to thoroughly evaluate the needs of individuals - by asking yourselves and your members - and comparing these needs with the actual provisions in place within industrial sectors. It is hoped that this should yield some very useful information for all parties concerned.

To achieve the above objective we would be grateful if you could take the time to complete the attached questionnaire on your opinions as to the needs and current provisions for employees with disabilities.

If you would like to discuss this study in more detail please do not hesitate to contact me either in writing at the above address or by telephone on 0171 739 8181 ext 3574.

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So that this study will reflect the social, physical and temporal needs of all UK companies we urge you to participate in this study and look forward in anticipation to receiving your completed questionnaire. If you would like to discuss this study in more detail please do not hesitate to contact me either in writing at the above address or by telephone on 0171 739 8181 ext 3574.

Yours faithfully

Mike Williams
Researcher

Dr Leslie Hawkins
Head of Occupational Health and Safety Unit
A National study into Quality Safety Management in the Service Sector by the Robens Institute of Occupational Safety - University of Surrey
This questionnaire is part of a research project into the adoption and relevance of quality initiatives to the performance of Health and Safety. The purpose of the questionnaire is to formulate a profile of organisations' action by gathering data about their approach to quality initiatives on occupational health and safety and performance.

Organisation:____________________________________

Name of individual completing questionnaire:____________________________________

Telephone number: __________________________

Date: _______________________________________________________________________

PART A

ORGANISATION PROFILE  * please ring the appropriate No.

This part of the questionnaire is designed to establish a profile of your organisation

Q1 Which of the following best describes your organisation's operation?

Manufacturing 1
Service 2
Utility 3
Other (please specify) ____________________________________________________________

Q2 Are you a member of a larger group

Yes 1
No 2

Q3 In which area of the UK does your organisation operate from?

North-West England 1
North-East England 2
Midlands 3
South-West England 4
South East England 5
Wales 6
Scotland 7
Northern Ireland 10
QIP QUESTIONNAIRE

Q4 Which of the following best describes the number of employees within your organisation?

- less than 50
- 51-100
- 101-150
- 151-250
- 251-500
- 501+

PART B

QUALITY INITIATIVES

Part B of this questionnaire explores your organisation's approach to "Quality" as a concept and if relevant explores which factors are included within the organisation's Quality Improvement Programme (QIP).

Q5 Has your organisation introduced a quality initiative eg. TQM, BS 5750, Company Wide Quality Management (CWQM), Corporate Quality Initiative (CQI)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2 (go to question 12 Part C)</td>
</tr>
</tbody>
</table>

Q6 If you responded yes to Q5 which of the following best describes the type of QIP your organisation has introduced?

- BS 5750/ISO 9001
- BS 7750
- Company Wide Quality Management (CWQM)
- Corporate Quality Initiative (CQI)
- Total Quality Management
- Customer care initiative
- Quality assurance
- Other Quality Programme

Q7 If you responded yes to Q4 how long has it been in place?

- less than 1 yr
- 1 -2 yrs
- 3-5 yrs
- greater than 5 yrs

Q8 Has your organisation integrated Health and Safety within its QIP?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Partially</td>
<td>2</td>
</tr>
<tr>
<td>Fully</td>
<td>3</td>
</tr>
</tbody>
</table>

Q9 If you included a TQM programme in your answer to question 5 or 6 which of the following models best describes it?

- Deming-(Management led)
- Juran- (Organisational led)
- Crosby (People led)
QIP QUESTIONNAIRE

Kanizowa (Process led) 4
Taguchi (Statistic led) 5

Q10 How would you describe your organisation's internal approach to Quality Management Systems?:

<table>
<thead>
<tr>
<th>Approach</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very enthusiastic</td>
<td>1</td>
</tr>
<tr>
<td>Interested</td>
<td>2</td>
</tr>
<tr>
<td>Not known</td>
<td>3</td>
</tr>
<tr>
<td>Disinterested</td>
<td>4</td>
</tr>
<tr>
<td>Dismissive</td>
<td>5</td>
</tr>
</tbody>
</table>

Q11 Does your Quality Improvement Programme include any of the following? (please ring more than one if appropriate)

- Publicised mission statement 1
- Clear strategy to achieve it 2
- Defined aims/ critical success factors 3
- Defined objectives for above 4
- Defined responsibility 5
- None of the above 6

Q12 From the three answers opposite which best describes the extent to which your organisation has implemented your response to QIP?

<table>
<thead>
<tr>
<th>程度</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully</td>
<td>1</td>
</tr>
<tr>
<td>Partially</td>
<td>2</td>
</tr>
<tr>
<td>Not at all</td>
<td>3</td>
</tr>
</tbody>
</table>

PART C

PERFORMANCE MEASUREMENT USED BY THE ORGANISATION

Part C explores the mechanisms and principles your organisation use to measure its performance. Special attention is given to Performance Measurement in Health and Safety.

Q13 Do you use Performance Measurement in your organisation? Yes 1

Q14 For which of the following purposes is non-financial performance measurement used in your organisation? (Please answer all Questions)

<table>
<thead>
<tr>
<th>Activity</th>
<th>used</th>
<th>not used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of overall company performance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Management of process/functional performance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Management of team performance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Management of individual performance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Management of Health and Safety</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Identification of opportunities for improvement</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Identification of cost benefits/losses</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Q15 If Quantitative (measurable) Performance Measurement is used for Health and Safety which of the following best describes the measures used?

- Number of accidents: 1
- Number of sick days: 2
- No. of notices served by enforcement officers: 3
- No. of complaints received: 4
- No. of prosecutions: 5
- Cost of accidents /ill health: 6
- Quantified Risk Assessment: 7
- N/A: 10
- Other: 11

Please specify: ____________________________________________________

Q16a Do you use Qualitative (comparable) performance?  
  yes 1  
  no  2

Q16b If yes please describe below:

_________________________________________________________________

PART D
H&S POLICY

Part "D" of this questionnaire explores the more detailed aspects of quality health, safety and welfare provision

Q17

<table>
<thead>
<tr>
<th>Do you have specific formalised policies for the following areas?</th>
<th>Is it periodically reviewed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy</td>
<td>Yes</td>
</tr>
<tr>
<td>a. Health and Safety</td>
<td>1</td>
</tr>
<tr>
<td>b. Environment</td>
<td>1</td>
</tr>
<tr>
<td>c. Safety Management (Risk assessment)</td>
<td>1</td>
</tr>
<tr>
<td>d. Occupational Health provisions for employees</td>
<td>1</td>
</tr>
<tr>
<td>e. Accident rehabilitation programmes for employees</td>
<td>1</td>
</tr>
<tr>
<td>f. Pre-employment workplace screening</td>
<td>1</td>
</tr>
<tr>
<td>g. Safety of disabled employees</td>
<td>1</td>
</tr>
<tr>
<td>h. Safety of disabled non-employees</td>
<td>1</td>
</tr>
</tbody>
</table>
Q18 If you responded yes to Q17c. which of the following best describes your risk assessment?

Quantitative 1
Qualitative 2

Q19a If you responded yes to Q17a who signs the Health and Safety policy?

Q19b How frequently do you audit/revie the arrangements to implement the policy?

<1 yr 1
1 yr 2
2-3 yrs 3
4-5 yrs 4

Q19c Does the organisation actively encourage employee participation and involvement in health and safety matters?

Yes 1
No 2

Q20a. Does your organisation have a policy on employment of individuals with disabilities?

Yes 1
No 2 (go to Q22)

Q20b. If yes does it specifically cover:

Recruitment of individuals with disabilities? Yes 1
No 2

Welfare and safety of those already employed? Yes 1
No 2

Welfare and safety of any person who becomes disabled while in your employment? Yes 1
No 2

Q20c. Has the organisation specifically nominated a person to administer the policy?

Yes 1
No 2
QIP QUESTIONNAIRE

Q 20d If yes which of the following personnel has been nominated to administer the policy?

- Director 1
- Personnel Officer 2
- Safety Officer 3
- Occupational nurse 4
- Other 5

Q21 Have managers/staff undergone any training on the understanding of the needs of disabled individuals?

- Yes 1
- No 2

Q22 Does your organisation have a committee structure in which disabled individuals can be represented on a regular basis?

- Yes 1
- No 2

Q23 Which of the following best describes your organisation's financial input to Health and Safety over the last year?

- The organisation has input more than the previous year 1
- The organisation has input the same as the previous year 2
- The organisation has input less than the previous year 3

Q24 Do you feel that there is a need for a British Standard similar to BS 5750/ISO9001 for Health and Safety compliance:

- Yes 1
- No 2

MONITORING

Q25a Which of the following statistics does your organisation collect on a routine and annual basis?

- Risk assessment data 1
- Accident Data 2
- Absenteeism/sickness 3
QIP QUESTIONNAIRE

Q25 b If you responded yes to Q25a please describe the type of collection /system used below:

RESPONSIBILITY

Q26

Who within your organisation has specific responsibility for the following conditions

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>Senior management</th>
<th>Line Manager</th>
<th>Competent Person (safety Officer)</th>
<th>Occupational Nurse</th>
<th>Other Please specify below</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical disability (ie loss of function of a limb)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Mental disability (ie depression/stress)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Hearing Impairments</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sight Impairments</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Cardiac Impairments</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Asthma</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Assessment of employees with disabilities for employment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Rehabilitation of employees after illness/injury</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Dermatitis</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Health Surveillance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q27 Which of the following does your organisation use as a rehabilitation mechanism for employees who become injured while at work?

Return to alternative work 1
Part time job -split/share 2
Sheltered placement scheme 3
Delayed return to work 4
QIP QUESTIONNAIRE

Q28 Do you presently employ any of the following?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Registered disabled employees

Individuals who are disabled but not registered as such

Individuals on Sheltered Placement Schemes

PART F

OCCUPATIONAL SEVERITY RISK RATING

Part F of this questionnaire explores the concept of the perception of risk to individuals with special needs in the workplace.

Q28

In your organisation if you had to classify individuals with the following disabilities in terms of the risks they present to the organisation and themselves which of the following best describes your opinion:

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>No particular Risk</th>
<th>Very Low Risk</th>
<th>Low Risk</th>
<th>Medium Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetraplegia (paraplegics)</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amputees</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart conditions</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epileptics</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individuals with mental disabilities</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partially sighted</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing impairments</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV positive</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscular injuries</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(PLEASE TURN OVERLEAF)
This page asks you to compare your organisation's current performance in certain areas with the degree of importance the subject should receive for the maximum benefit to your organisation.

(Please answer all questions.)

**Left hand scale**
For each of these areas, circle the number on the left hand scale that indicates your opinion of the relative importance that improvement will have on the long term health of the ORGANISATION. If you feel that improvement in the area is of little or no importance to the ORGANISATION, you should circle a 1 on the left hand scale for that item. However, if you feel that improvement in this area is of great importance you should circle 7.

**Right hand scale**
On the right hand scale circle the number which you feel your own organisation's current performance is best described.

<table>
<thead>
<tr>
<th>IMPORTANCE</th>
<th>CURRENT PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

**(Organisational Objectives)**
- Quality
- Performance Measurement
- Customer Satisfaction
- Management Training
- Non-Management Training
- Competitive Benchmarking
- Health and Safety
- Occupational Health
- Accident Investigation
- Safety Auditing
- Risk Assessment
- Financial Management

<table>
<thead>
<tr>
<th>Level of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

- Management of H & S at Work Regs.
- Workplace (H, S & Welfare) Regs.
- PPE at Work Regs.
- H & S (Display Screen Equipment) Regs.
- P & U of Work Equipment Regs.

<table>
<thead>
<tr>
<th>Service Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

- Occupational Nurses
- Occupational Stress Counselling
- Occupational Disability Counselling
- Rehabilitation Counselling (After illness/injury)

<table>
<thead>
<tr>
<th>Liaison</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

- Employment Medical Advisory Service
- Disability Employment Advisors
- General Practitioners
- Hospital
- DSS
- PACT
- HSE
- Other Agencies
Q31 Do you wish to receive an abstract of the completed report?

yes 1
no 2

Q32 If your organisation was selected would you be prepared to participate in a short interview to expand on the information provided in the questionnaire

Yes 1
No 2

COMMENTS

Q33 Please add any comments you think may be of benefit to this study:

Thank you for taking the time to complete this questionnaire. It is hoped that the results of this study will act as the catalyst to future dialogue on Quality, Health and Safety and disablement within the engineering/service sector. Should you wish to discuss any part of this study please don’t hesitate to contact Mike Williams on 0171-7398181, Ext 3574. Please return the questionnaire in the prepaid envelope to: Mike Williams, Bethnal Green, 255-279 Cambridge Heath Road, London E2 0HJ.
NOTES
(All information provided will be treated as Confidential)
This questionnaire is part of a research project into the provisions provided by businesses to accommodate the needs of those employees and non-employees who have a disability, impairment or handicap. The purpose of this questionnaire is to use your response to identify those areas that are important to you.

Part 1
Introduction

In your opinion do you consider yourself to be disabled or have an impairment

   yes 1  no 2

* please ring or tick the appropriate Number.

This part of the questionnaire is designed to establish a profile of you and the job you carry out.

Q1 Which of the following do you consider best describes the type of impairment you have?

   Physically impairment 1*
   Sensory impairment 2
   A combination of the above 3
   Other (please specify) 4

Q2 In which area of the UK do you reside?

   North-West England 1
   North-East England 2
   Midlands 3
   South-West England 4
   South East England 5
   Wales 6
   Scotland 7
   Northern Ireland 8
   Nationwide 11

Q3 Which of the following best describes the number of employees that are employed by your employer?

   less than 50 1
   51-100 2
   101-150 3
   151-250 4
   251-500 5
   501+ 6

Q4a Which gender are you

   Male 1  Female 2

Q4b Which of the following categories best describes your age:

<table>
<thead>
<tr>
<th>16-20</th>
<th>21-25</th>
<th>26-30</th>
<th>31-35</th>
<th>36-40</th>
<th>41-45</th>
<th>46-50</th>
<th>51+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

Q4c Which of the following best describes your employment sector?

   Engineering 1  Service 2  Retail 3
   Office 4  Remploy 5
4 d Which of the following best describes the system of employment you are engaged in?

Open employment 1  Remploy 2  Sheltered 3  Other 4

4e Which of the following best describes the type of work you carry out?

Manual work 1  Office work 2  Outdoor work 3  Management 4  Supervisory 5

4f How long have you been engaged in employment? ————-years

4g How long have you worked for your current employer ————-years

4h Please describe as best you can the job/task you carry out below:


Part 2 Attitude profile

Q5 In your opinion please indicate below how much you agree or disagree with the following statements:

<table>
<thead>
<tr>
<th></th>
<th>strongly disagree</th>
<th>disagree</th>
<th>neutral</th>
<th>agree</th>
<th>strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>My employers understand my health welfare and safety needs</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Training policies are generally not appropriate for the needs of employees with disabilities</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Sufficient training is provided for other staff on understanding my needs</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>I sometimes feel more isolated than other employees in a workplace</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Access to rehabilitation facilities at work is good</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Lack of financial resource is always used as an excuse for the lack of adaption for disabled employees</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.7</td>
<td>I have more problems getting to work than at work</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.8</td>
<td>I can always talk to my line manager about difficulties I am having</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td>Statement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5.9</td>
<td>I can never talk to my fellow employees about problems with work, they wouldn't understand</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.10</td>
<td>I am provided with a great deal of support from the company</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.11</td>
<td>While at work, if there was an emergency such as a fire, I would be treated as a priority</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.12</td>
<td>If I need time off for rehabilitation the company always understands</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.13</td>
<td>I would not hesitate to request time off if I had difficulty coping with the workload</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.14</td>
<td>I would always think twice about requesting adaption to my work station or practice should I feel they were uncomfortable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.15</td>
<td>I have always felt comfortable reporting an accident I had at work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.16</td>
<td>I sometimes feel as though I am not accepted on equal terms while at work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.17</td>
<td>My safety officer has done all he/she can to ensure my safety and health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.18</td>
<td>All aspects of the workplace are very accessible to me, I can safely go where I need to</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.19</td>
<td>I have difficulty with the visibility of signs around the building</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.20</td>
<td>I think the idea of a Fire refuge is a good idea so that I don't impede others in an emergency</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.21</td>
<td>If I had an accident at work it would be seen as being due to my impairment and not just an accident</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Part 3

Areas of Importance

Q 6 In your opinion of how much importance do you feel your employer places on securing your well being while at work:

<table>
<thead>
<tr>
<th>Q</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Management commitment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.2</td>
<td>Support from management</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.3</td>
<td>Support from supervisors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.4</td>
<td>Support from fellow employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.5</td>
<td>Provision of information</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.6</td>
<td>Job/task analysis for each individual</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.7</td>
<td>Group meetings between representatives who are disabled and management</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.8</td>
<td>Off the job provisions i.e. getting to and from work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Q 7 In your opinion how much emphasis/importance do you feel employers ACTUALLY place on the following areas in specifically ensuring the welfare, health and safety of employees with disabilities:

<table>
<thead>
<tr>
<th>Area of Importance/emphasis</th>
<th>not at all</th>
<th>A little</th>
<th>Quite a bit</th>
<th>A lot</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Management commitment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.2 Management involvement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.3 Ensuring support from supervisors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.4 Facilitating support from fellow employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.5 Providing specific information</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.6 Ensuring a job/task analysis is carried out for each individual</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.7 Providing meetings between representatives who are disabled and management</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.8 Off-the-job provisions i.e. transport for getting to and from work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.9 Integrating rehabilitation facilities at work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.10 Providing workplace counselling facilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.11 Seeking grant aid availability for workplace adaption</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.12 Providing regular health surveillance by an occupational nurse</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.13 Contacting external voluntary groups for assistance/advice</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.14 Ensuring positive organisational attitudes towards employees with disabilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.15 Ensuring effective communication facilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q8 In your opinion what level of support do the following individuals provide in securing your health, safety and welfare at work:

<table>
<thead>
<tr>
<th></th>
<th>no support</th>
<th>little support</th>
<th>some support</th>
<th>much support</th>
<th>very much support</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Company Managers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.2 Company Supervisors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.3 Fellow workers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.4 Trade Union representatives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.5 Company Safety officers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.6 Enforcement officers i.e. Environmental Health/HSE Officers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.7 Placement Assessment &amp; Counselling Teams</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.8 Disabled Employment Advisors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.9 Employment Medical Advisory Service</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.10 Voluntary organisations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.11 Occupational Health nurses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.12 Doctors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Q8 How much do you feel you can trust the following people when things get difficult at work:

<table>
<thead>
<tr>
<th>People</th>
<th>none</th>
<th>little</th>
<th>some</th>
<th>much</th>
<th>very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Managers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Company Supervisors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Fellow workers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Trade Union representatives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Company Safety officers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Enforcement officers i.e. Environmental Health/HSE Officers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Placement Assessment &amp; Counselling Teams</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Disabled Employment Advisors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Employment Medical Advisory Service</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Voluntary organisations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Occupational Health nurses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Doctors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q8 To what extent can you talk to the following individuals at work:

<table>
<thead>
<tr>
<th>People</th>
<th>never</th>
<th>little</th>
<th>some</th>
<th>much</th>
<th>very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Managers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Company Supervisors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Fellow workers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Trade Union representatives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Company Safety officers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Enforcement officers i.e. Environmental Health/HSE Officers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Placement Assessment &amp; Counselling Teams</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Disabled Employment Advisors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Employment Medical Advisory Service</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Voluntary organisations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Occupational Health nurses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Doctors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.12 Who do you feel has the most influence on the provision of facilities and support for employees with disabilities within any specific workplace?

Q9 In your opinion how much are you bothered by the following areas of company management are in ensuring employees with disabilities are provided with a quality level of health, welfare and safety provisions?

<table>
<thead>
<tr>
<th>Area</th>
<th>no importance</th>
<th>little importance</th>
<th>some importance</th>
<th>much importance</th>
<th>very much important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Representation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Provision of written documentation on safety</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Provision of verbal information systems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Information on the identification &amp; evaluation of risk to health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Information on understanding the special needs of individuals with disabilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Effective system of information flow i.e. top down / bottom up</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Access to specialist advice</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Training - management &amp; peer group in identifying the needs of specific target groups</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Q10 In your opinion how important do you consider the following in terms of safety for employees with disabilities?

<table>
<thead>
<tr>
<th>Safety Provisions for Employees with Disabilities</th>
<th>no importance</th>
<th>little importance</th>
<th>some importance</th>
<th>much importance</th>
<th>very much important</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Policies and procedures that are specifically tailored to the needs of disabled employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.2 Workplace adaption of sockets /switches/shelving etc.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.3 Transport to and from the workplace</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.4 Adaptation which promote mobility between work station and facilities for rest</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.5 Improvements in the general lay out of the building to allow mobility once at work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.6 Personal escape plan for all physically and sensory disabled individuals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.7 Provisions of &quot;Evac Chairs&quot;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.8 Adaptation of safety and escape signs to accommodate those with sensory and learning disabilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.9 The provision of special signs for the disabled</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.10 Shorter working hours for employees with disabilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.11 Flexible work patterns to facilitate rest periods when necessary</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q11. In your opinion do you think employees who are disabled or have an impairment are fully aware of their employers' obligations so far as health and safety is concerned

- Yes 1
- No 2

Q11.2 If you responded no to the above question what methods, in your opinion, would best improve this situation?

Q11.4 Do you feel the current system of ensuring the special needs of disabled employees is sufficient to meet the needs of employees who are disabled

- Yes 1
- No 2

Q12 Does your organisation provide information on the following?

- Adaptation to the workplace
- Health and safety issues
- Policies suitable for employers who employ disabled employees

Q13 Has your organisation ever been approached by clients/members about health and safety issues?

- Yes 1
- No 2

13 a If yes which area of safety are enquiries generally about?
### Attitude towards degree of perception

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Uncertain</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>Sometimes I have the feeling that other people are just using me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.2</td>
<td>I can do anything I wish to</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.2</td>
<td>We are just so many cogs in the machinery of life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41.3</td>
<td>The future looks very dismal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.4</td>
<td>More and more, I feel helpless in the face of what's happening in the world today</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.5</td>
<td>People like me have no influence in society</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

### Political/attitude towards societies perception

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Uncertain</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.1</td>
<td>Most employers are unfair to disabled employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.2</td>
<td>I think that disabled employees make better employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.3</td>
<td>In a case where two people can do a job about equally well, mostly employers would pick the one without a disability</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.4</td>
<td>I think I have as much ability to learn new methods as other employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.5</td>
<td>People who don't know me treat me as though I am a safety hazard</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

15.5 Have you had an accident which resulted from the organisation's failure

- Yes | 1
- No | 2
Attitude towards Safety prevention Work

| 16.1  | Sometimes it is necessary to depart from safety requirements for the sake of the job | 1 | 2 | 3 | 4 | 5 |
| 16.2  | Good operational economy is often in conflict with measures to improve personal safety | 1 | 2 | 3 | 4 | 5 |
| 16.3  | Rules and instructions relating to personal safety sometimes make it difficult to keep up at work | 1 | 2 | 3 | 4 | 5 |
| 16.4  | Sometimes it is necessary to take risks to get the job done | 1 | 2 | 3 | 4 | 5 |
| 16.5  | Whenever I see safety instructions not being complied with I call attention to it on the spot | 1 | 2 | 3 | 4 | 5 |
| 16.6  | Many minor injuries and minor accidents are an indication that serious accidents can also easily occur | 1 | 2 | 3 | 4 | 5 |
| 16.7  | Safety measures only shift the danger from one area to another | 2 | 3 | 4 | 5 |
| 16.8  | Occupational accidents are often the result of bad planning and poor management | 2 | 3 | 4 | 5 |
| 16.9  | Calling attention to breaches of safety can easily be felt as unnecessary hassle | 2 | 3 | 4 | 5 |
| 16.10 | Good proposals on how to improve safety are often dropped if they cost too much | 2 | 3 | 4 | 5 |
| 16.11 | Many accidents happen, there is little one can do to avoid | 2 | 3 | 4 | 5 |

**COMMENTS**

Q13 Please add any comments you think may be of benefit to this study:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Do you wish to receive an abstract of the completed report?

- yes 1
- no 2

Thank you for taking the time to complete this questionnaire. It is hoped that the results of this study will act as the catalyst to future dialogue on Quality, Health and Safety and disablement within the engineering /retail sector. Should you wish to discuss any part of this study please don't hesitate to contact Mike Williams on 0171-739 8181 Ext 3574 work or Home 01932 840 975

Please return the questionnaire in the prepaid envelope.
Appendix D

Player codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRM:</td>
<td>Human Resource Management</td>
<td></td>
</tr>
<tr>
<td>OCH:</td>
<td>Occupational Health</td>
<td></td>
</tr>
<tr>
<td>SMR:</td>
<td>Safety Manager</td>
<td></td>
</tr>
<tr>
<td>LMG:</td>
<td>Line Manager</td>
<td></td>
</tr>
<tr>
<td>DEP:</td>
<td>Disabled Employee</td>
<td></td>
</tr>
<tr>
<td>SMG:</td>
<td>Senior Manager</td>
<td></td>
</tr>
<tr>
<td>FM:</td>
<td>Facilities Management</td>
<td></td>
</tr>
<tr>
<td>MT:</td>
<td>Maintenance</td>
<td></td>
</tr>
<tr>
<td>SUP:</td>
<td>Supervisor</td>
<td></td>
</tr>
<tr>
<td>PE:</td>
<td>Peer group employee</td>
<td></td>
</tr>
</tbody>
</table>

Relationships and social structure: unofficially defined patterns such as cliques, coalitions, enemies, friendships

Internal Context

<table>
<thead>
<tr>
<th>Code</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC-CHAR:</td>
<td>Characteristics</td>
<td></td>
</tr>
<tr>
<td>IC-NORMS:</td>
<td>Norms and Authority</td>
<td></td>
</tr>
<tr>
<td>IC-HIST:</td>
<td>Innovation history</td>
<td></td>
</tr>
<tr>
<td>IC-PROC:</td>
<td>Organisational procedures</td>
<td></td>
</tr>
<tr>
<td>IC-FIT:</td>
<td>Innovation-organization congruence</td>
<td></td>
</tr>
</tbody>
</table>

General info. on surroundings that allow the study to be put into a larger context

Pattern codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
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<td>Leitmotiv</td>
<td></td>
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<tr>
<td>PATT:</td>
<td>Pattern</td>
<td></td>
</tr>
<tr>
<td>TH:</td>
<td>Theme</td>
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</tr>
<tr>
<td>CL:</td>
<td>Causal link</td>
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<tr>
<td>BAR:</td>
<td>Barrier</td>
<td></td>
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<tr>
<td>THL:</td>
<td>Thermatic links</td>
<td></td>
</tr>
</tbody>
</table>

Process codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM:</td>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>POL:</td>
<td>Policy existence</td>
<td></td>
</tr>
<tr>
<td>RA:</td>
<td>Risk assessment</td>
<td></td>
</tr>
<tr>
<td>CONTM:</td>
<td>Control measures</td>
<td></td>
</tr>
<tr>
<td>KPI:</td>
<td>Key performance Indicator</td>
<td></td>
</tr>
<tr>
<td>KRA:</td>
<td>Key result Area</td>
<td></td>
</tr>
</tbody>
</table>
CSF: Critical Success Factor
OBJ: Objectives
Rule: Rules in place
Rule/Comp Rule compliance
BP: Best Practice

Process- sequence of events, flow, transitions, and turning points over time.

Strategy Codes

FORM: Formal strategies for meeting needs
IN-FORM Informal strategies

Strategies- ways of accomplishing things, people's tactics, methods, techniques for meeting their needs.

Emerging Causal links

CL/NET: Causal link/Networks
CL/Rule: Causal links/Rules
CL/PATT Causal links/Recurrent Patterns
CL/PATT/LS Causal links/Recurrent Patterns within site
CL/PATT/OS Causal links/Recurrent Patterns Intersite
CL/EXPL Explanatory cluster researcher
SITE/CL-EXP respondent

Queries

QU! Surprises
QU-Q Puzzles

Structure of Questions

5.7.2 Corporate Strategy development and goal deployment
5.7.3 Corporate Process/systems management
5.7.5 Safety Management Domain/policy level
5.7.6 Health and Safety Performance Measurement
5.7.5 Department purpose Analysis
5.7.6 Internal Communication.
5.7.2 Health and Safety Committee
5.7.8 Disability Paradigm
5.7.9 Economic Control

Cog Adequacy

Who is responsible for the health, safety and welfare of disabled employees?
What information is communicated?
Disabled Employees and the Safety committee
 Provision of Physical Communication Mediums