Organisational interventions for work stress
A risk management approach

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Organisational interventions for work stress
A risk management approach

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This report presents a risk management approach to the reduction of work stress, describing its origins, strategies, processes and procedures. It illustrates these through six organisational case studies. It is based on a programme of research and development conducted for the Health and Safety Executive by the Institute of Work, Health and Organisations, University of Nottingham Business School. These case studies cover 11 different occupational groups drawn from 19 risk management projects completed in collaboration with 10 major British companies.

The report is written for those competent in occupational health and safety and for informed policy makers, managers and trades unionists interested in that area. Some knowledge of the language and concepts of health and safety has been assumed, although its application to the challenge of work stress is explained. The case studies are deliberately presented in a brief and somewhat more ‘journalistic’ style to increase their accessibility.

Each of the collaborating companies received a technical report on their particular project(s), and the papers of scientific interest are being published through the relevant scientific and professional journals.

This report and the work it describes were funded by the Health and Safety Executive. Its contents, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect HSE policy.
FOREWORD

This Report presents a risk management approach to the reduction of work stress. It is an overview of the research and development work conducted for the Health and Safety Executive by the Institute of Work, Health and Organisations, University of Nottingham Business School (formerly the Centre for Organisational Health and Development, School of Psychology). It describes the origins and logical basis of such an approach, and the strategy that frames its processes and procedures. The approach is illustrated by six organisational case studies drawn from a series of 19 risk management projects on different occupational groups conducted in collaboration with 10 major British companies. The six organisational case studies cover 11 different occupational groups. Together they represent much of the private sector as described in the Labour Force Survey. The companies that took part were all `large' organisations. An extension of the project to the special situation of small and medium sized organisations is currently being considered by the Institute.

Risk assessment is treated as the critical first step, one that informs subsequent risk reduction. Although the application of the risk management approach represents an organisational intervention in itself, there is particular concern for risk reduction at the organisational level. The emphasis throughout is on primary prevention; however, in all of the case studies reported, a balanced approach emerged including aspects of employee training, treatment and rehabilitation.

The Report is in three Parts. Part I presents, in seven sections with an associated bibliography, the risk management methodology, its origins, strategies, processes and procedures. Part II presents the six illustrative organisational case studies. Part III offers a statistical appendix and a glossary of key terms. The Report is written for those competent in occupational health and safety and for informed policy makers, managers and trades unionists interested in that area. Some knowledge of the language and concepts of health and safety has been assumed, although their application to the challenge of work stress is explained. The organisational case studies are deliberately presented in a brief and somewhat more `journalistic' style to increase their accessibility.

Each of the collaborating companies received a Technical Report on their particular project(s), and the papers of scientific interest are being published through the relevant scientific and professional journals. Many papers have already been presented at conference.

The Institute believes that this project makes an important contribution to our ability constructively to manage the challenge of work stress, and hopes that this Report will be received with interest.

The opinions and conclusions expressed in the Report are those of the authors and do not necessarily reflect those of any other person or organisation. They do not necessarily reflect the policies of the Health & Safety Executive.
EXECUTIVE SUMMARY

This Report presents a risk management approach to the reduction of work stress. It is an overview of the research and development work conducted for the Health and Safety Executive by the Institute of Work, Health and Organisations, University of Nottingham Business School. It describes the origins and logical basis of such an approach, and the strategy that frames its processes and procedures. The approach is largely concerned with issues of work design and management, and their social and organisational contexts. It is illustrated by six case studies drawn from a series of 19 projects conducted in collaboration with 10 major British companies. Together these companies represent the private sector (of the 1990s) as described in the Labour Force Survey. The companies that took part were all ‘large’ organisations.

RESEARCH OBJECTIVES

The Report is based on what was essentially a research and development project to adapt a general model of risk management to the particular challenge of reducing work stress in large British private sector companies. It describes and illustrates a strategy and an associated set of processes and procedures. It does not represent a ‘recipe book’ or ‘menu-driven tool-kit’ for occupational safety and health practitioners or managers. The approach was designed to be adequate in terms of its application of science and to be consistent with current thinking and law in occupational safety and health.

THE REPORT

The Report is presented in three parts. The first part describes the risk management approach. It is structured in 7 Sections: these are briefly described below. Part II illustrates the approach through the six case studies. Part III provides a statistical appendix and a glossary of key terms as supplementary information.

PART I: THE RISK MANAGEMENT APPROACH

Section 1 provides the necessary background to the Report. It focuses on the challenge to occupational health and the healthiness of organisations presented by the experience of stress at work. It discusses its likely causes and develops the argument for managing work stress at source through a risk management approach.

Section 2 describes a general model of risk management as the basis for dealing with work stress. It describes some of the issues in adapting such a model for the particular challenge of work stress.

Sections 3 to 6 present the risk management approach as used in the series of case studies conducted by the Institute and as illustrated in the six selected for the Report. Each Section describes one step in the overall process, not only dealing with the practical aspects of its application but also discussing its origins and design.

Section 3 describes the first and critical step: risk assessment. It includes an overview of the method, and details the stages and activities involved in successfully completing an assessment. It includes a discussion of how the data collected might be analysed and interpreted. A risk assessment successfully completed should allow the identification of ‘likely risk factors’ for the
health of employees and their organisations with a focus on the design and management of work and its social and organisational contexts.

While the results of a risk assessment for work stress are interesting in themselves, it is important that the information from such assessments is put to use. Section 4 provides a description of how the results of the risk assessment may be fed back and explored with an organisation. It describes the process of 'translation' during which any underlying organisational pathologies might be identified and explored in the development of a risk reduction programme. In all the case studies reported, this stage was found to be crucial. The feedback of the risk assessment data should inform the design of an intervention package to reduce risk. The emphasis in the current work was on organisational interventions and on primary prevention.

The design, implementation and management of interventions to reduce work stress are discussed in Section 5. This section largely deals with the decision-making processes and practical considerations. Specific details about the interventions used in the case studies can be found in Section 10.

Evaluating the success of a package of interventions is a crucial part of the risk management approach. Not only does this provide information about the effectiveness of particular interventions, but it also forms the basis for a cycle of continuous improvement with respect to work design and management. Section 6 of this Report presents a description of the evaluation process as used in the case studies. It also includes a discussion of the scientific and practical issues that surround the evaluation of organisational interventions. Many of the issues discussed in Section 6 are illustrated in the case studies in Section 10.

While carrying out the case studies, a number of important learning points emerged. These serve to highlight some of the main barriers to and facilitators of the risk management approach. An overview of these is provided in Section 7. More specific discussion of the relevant issues is provided in each case study (Section 10).

PART II: CASE STUDIES

Case studies were completed in collaboration with 10 major British companies in the private sector. Results from 6 companies (11 occupational groups in total) are reported in Section 10 after a brief introduction (Section 9). These case studies are offered to illustrate the risk management approach in practice.

PART III: APPENDICES

A full description and discussion of the statistical techniques using during the case studies is offered in Appendix I. Some sections of this Report contain terms that may require further explanation. To this end, a glossary of key terms is provided as Appendix II. This glossary provides brief explanations and definitions of some of the less familiar concepts and terms associated with the risk management approach to work stress.
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PART I

THE RISK MANAGEMENT APPROACH
SECTION 1: BACKGROUND

The psychological and social aspects of work have been the subject of serious interest since the early 1950s (Johnson, 1996). Initially the focus of research was employees' adaptation to their work and work environments, and individual differences in that process of adaptation and coping (Gardell, 1982). However, by the 1960s the focus of interest had begun to change (Johnson and Hall, 1996) and to move away from how individual employees coped towards concern for the design and management of their work as one source of their problems. Common cause was established between work and organisational psychology, on the one hand, and occupational health, and health and safety management, on the other. This co-incidence of interest eventually gave rise to the new discipline of occupational health psychology. Not surprisingly, one of the main concerns of occupational health psychology is how the design and management of work, set in its social and organisational contexts, can affect the health of employees and the healthiness of their organisations (Griffiths, 1998).

A central concept in occupational health psychology is that of ‘stress’ and one of its main concerns is the effective management of work stress. The focus of this Report is the development and testing of a risk management approach to work stress, one consistent with current thinking and law in health and safety.

1.1 STRESS: THE HEALTH AND SAFETY FRAMEWORK

The basic health and safety equation of hazard - risk - harm has been offered as a conceptual framework (see Figure 1) for understanding the nature and management of work stress (Cox, 1993). A hazard is an event or situation or, here, an aspect of work that has the potential to cause harm. The concept of risk relates to the linkage between exposure to the hazards of work and the harm that that exposure may cause.

![Figure 1: Hazard, risk and harm](image)

The scientific evidence suggests that the experience of stress provides an important link between employees’ exposure to the hazards of work and any subsequent and related ill effects on their health (harm) (Cox, 1993; Cox, Griffiths and Rial-Gonzalez, 2000). As such, it can be dealt with either organisationally at source, by reducing exposure to hazards that are experienced as stressful, or, at the individual level, by treating the experience of stress itself and its health effects. This Report is primarily concerned with the former strategy, although, as will become clear, most attempts to reduce the risk to health associated with exposure to stressful hazards necessarily involve both organisational and individually-focused interventions.
The analysis of the stressful hazards of work should involve consideration of all aspects of its design and management, and of its social and organisational contexts: not only the more tangible and physical but also the more psychosocial. Furthermore, where effects on health occur, they may involve not only physical but also psychological and social health, and, in turn, affect the employees' availability for work, and the quantity and quality of their work when present. If key employees, or a significant number of employees, are so affected, it is not difficult to see how the healthiness of their organisation, and its performance, may also suffer. Figure 2 summarises this argument. The scientific evidence to support it has been presented elsewhere (Cox, 1993; Cox, Griffiths and Rial-Gonzalez, 2000).

Figure 2: Work, stress and health
1.2 NATURE AND SOURCES OF STRESS AT WORK

Stress is an emotional experience that is complex, distressing and disruptive. Building on the model summarised in Figure 2, stress can be seen to arise from two different sources at work:

- Anxiety about exposure, or threat of exposure, to the more tangible and physical hazards of work.

- Exposure to problems in the psychosocial work environment and with their social and organisational settings. Such problems, essentially in the design and management of work, that have the potential for causing harm have been called “psychosocial and organisational hazards” (ILO, 1986; Cox and Griffiths, 1995a).

The experience of stress can be associated with, or can bring about, other changes in emotional state, in mental and physiological function, and in behaviour. These changes may often be benign and transient but, in some circumstances or for some employees, they may seriously challenge aspects of their health, their availability for and their performance at work.

| Psychosocial and organisational hazards were defined by Cox and Griffiths in 1995 as: |
| "Those aspects of work design and the organisation and management of work, and their social and environmental contexts, which have the potential for causing psychological, social or physical harm." |

For some time, there has been a reasonable consensus in the scientific literature on the general nature of the psychosocial and organisational hazards that employees may be exposed to at work. These hazards derive from both the content and the context of work and have been classified using ten broad categories (see Table 1).

Despite our depth of knowledge of psychosocial and organisational hazards, and of the more tangible aspects of work design and management, problems related to the experience of work stress still exist as major challenges to employee health (Jones et al., 1996). The question is "why?". Hernberg (1994) has argued that:

"the fact that classical occupational diseases still occur does not automatically mean that more research is needed. .... What it really means is that we have failed to implement already existing knowledge".

What has been long needed in relation to work stress has been a practical strategy for assessing and dealing with the health risk associated with the design and management of work, and its organisational context. At the outset it was obvious that such a strategy would have to be developed and tested through the design and evaluation of organisational interventions. This Report describes such a project conducted in collaboration with the private sector of British industry and funded by the Health & Safety Executive. About the same time as this project was being carried out, the National Institute for Occupational Safety and Health (NIOSH) in the United States made the organisation of work and related interventions one of the priority areas for its National Occupational Research Agenda (NORA) (NIOSH, 1997).
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>HAZARDOUS CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTENT OF WORK</td>
<td></td>
</tr>
<tr>
<td>Job content</td>
<td>Lack of variety or short work cycles, fragmented or meaningless work, under use of skills, high uncertainty, continuous exposure to people through work.</td>
</tr>
<tr>
<td>Workload / work pace</td>
<td>Work overload or under load, machine pacing, high levels of time pressure, continually subject to deadlines.</td>
</tr>
<tr>
<td>Work schedule</td>
<td>Shift working, night shifts, inflexible work schedules, unpredictable hours, long or unsociable hours.</td>
</tr>
<tr>
<td>Control</td>
<td>Low participation in decision making, lack of control over workload, pacing, shift working, etc. Lack of control, particularly in the form of lack of participation, is also a context and wider organisational issue.</td>
</tr>
<tr>
<td>Environment and Equipment</td>
<td>Inadequate equipment availability, suitability or maintenance; poor environmental conditions such as lack of space, poor lighting, excessive noise.</td>
</tr>
<tr>
<td>SOCIAL &amp; ORGANISATIONAL CONTEXT TO WORK</td>
<td></td>
</tr>
<tr>
<td>Organisational culture and function</td>
<td>Poor communication, low levels of support for problem solving and personal development, lack of definition of or agreement on organisational objectives.</td>
</tr>
<tr>
<td>Interpersonal relationships at work</td>
<td>Social or physical isolation, poor relationships with superiors, interpersonal conflict, lack of social support.</td>
</tr>
<tr>
<td>Role in organisation</td>
<td>Role ambiguity, role conflict, and responsibility for people.</td>
</tr>
<tr>
<td>Career development</td>
<td>Career stagnation and uncertainty, under promotion or over promotion, poor pay, job insecurity, low social value to work.</td>
</tr>
<tr>
<td>Home-work interface</td>
<td>Conflicting demands of work and home, low support at home, dual career problems.</td>
</tr>
</tbody>
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1.3 HEALTH & SAFETY LEGISLATION: THE WAY FORWARD

Over the last 10 years, and consistent with developments in research, both the statement and interpretation of EU and UK health and safety legislation have broadened. They now cover not only risks associated with the more tangible and physical aspects of work but also those associated with the design and management of work, and its organisational context. At the same time, a somewhat narrow concern for the effects of work on physical safety and health has been replaced with a wider concern for effects on all aspects of health, psychological and social as well as physical. Furthermore, both the European Commission’s Framework Directive on the Introduction of Measures to Encourage Improvements in the Safety and Health of Workers at Work 1989, and the Management of Health & Safety at Work Regulations 1999 (which represent Great Britain’s transposition of that Directive) make clear that employers have a legal duty to:

“make a suitable and sufficient assessment of (a) the risks to the health and safety of his employees to which they are exposed whilst they are at work” (Regulation 3(1)) in order to go about “deciding which preventative and protective measures to take” (Regulation 4, Guidance 30).

Explicit reference is made to the design and management of work, and the organisational context to work, in the European Commission’s Directive on the Introduction of Measures to Encourage Improvements in the Safety & Health of Workers at Work 1989. This ‘Framework Directive’ states that employers should develop:

“a coherent overall prevention policy which covers technology, organisation of work, working conditions, social relationships and the influence of factors related to the working environment” (Article 6.2).

The objective has always been to prevent personal injury through work. Earlier, the Health & Safety at Work Etc. Act 1974 defined “personal injury” as including:

“any disease and any impairment of a person’s physical or mental condition”.

It is important to note that EU and UK legislation emphasises the need for employers to assess all risks to employees’ safety and health, and then to take preventative action where indicated and to an extent that it is judged reasonably practicable. Such action should focus first on the employing organisation as the generator of the risk. The priorities in law are therefore assessment and prevention, and reasonably practicable actions (as specifically defined in British law) focused on the organisation rather than the individual (see Figure 3). The EU and UK legislation advocates risk management as the favoured strategy for taking the measures necessary to ensure the safety and health of employees (EC, 1996). It should be noted that, irrespective of any group-based risk assessment and subsequent actions, employers maintain a duty of care to the individual employee.
Figure 3: European priorities in managing health and safety problems

In 1993, Cox suggested that the risk management approach could be applied not only to the more tangible and physical risks of work, but could also be adapted to deal with issues of work design and management, psychosocial and organisational hazards and work stress. This is the focus of this Report.

1.4 THIS REPORT

In summary, this Report concerns the development and testing of a risk management approach to work stress framed by current thinking in health and safety management, and by the EU and UK legislation on health and safety at work. It is presented in seven main sections (Part I) covering the background to the project, an overview of risk management, and then risk assessment, the translation process, risk reduction, evaluation and learning points. It is illustrated through six case studies based on the approach in practice. These are presented in Part II of the Report (Sections 9 and 10). Part III includes two appendices: a full description and discussion of the statistical techniques used during the case studies (Appendix I), and a glossary of the key terms used throughout the Report, providing brief explanations and definitions of some of the less familiar concepts and terms associated with the risk management approach to work stress (Appendix II).

The research and development work necessary for this Report has represented a major project line within what is now the Institute of Work, Health and Organisations (I-WHO), University of Nottingham Business School. It was funded by the Health & Safety Executive. Originally founded in stress theory (e.g., Cox, 1978, 1993), it was driven by ‘evaluation by practice’ and was necessarily shaped by the restrictions inherent in research with external organisations in field situations.

The Report is titled ‘Organisational Interventions for Work Stress: A Risk Management Approach’. The application of the risk management approach in its entirety is treated as the organisational intervention.
SECTION 2: RISK MANAGEMENT – AN OVERVIEW

This Report is concerned with the adaptation and validation of a risk management approach to work stress. Section 2 introduces ‘risk management’ as a general strategy for managing health and safety problems, and then outlines the model of risk management used to frame the work reported here.

It draws on the model of risk management as logical problem solving. However, it sets this process in the wider context of a general system for managing health and safety as described in the Health and Safety Executive’s 1996 publication “Successful Health & Safety Management” (HS(G)65).

2.1 RISK MANAGEMENT

The risk management approach to dealing with health and safety problems is clearly advocated by the European legislation and is described in some detail in the supporting guidance. It is, for example, referred to in the European Commission’s Framework Directive 1989, and in the Management of Health and Safety at Work Regulations 1999. It is described in the accompanying Approved Code of Practice (ACOP) and elaborated in the EC Guidance on Risk Assessment at Work (1996). It is implicit in the Health and Safety Executive’s publication (1996) Successful Health and Safety Management (HS(G)65).

Risk management represents systematic and logical problem-solving, and is often based on two distinct but intimately related cycles of activity: risk assessment and risk reduction. This is made clear in the EC Guidance on Risk Assessment at Work (1996: § 3.1). This Guidance states that risk management involves: “a systematic examination of all aspects of the work undertaken to consider what could cause injury or harm, whether the hazards could be eliminated, and if not what preventive or protective measures are, or should be, in place to control the risks”.

Risk management is essentially organisational problem solving applied to the reduction or containment of risk. Here the emphasis is on risk reduction. Various models of risk assessment exist in the health and safety literature. Most are structured and operate through a prescribed and rational sequence of actions. Decision making is a critical feature of organisational problem solving in general, and of risk management in particular. Einhorn & Hogarth (1981) have argued that such decision making can be broadly considered in terms of four interacting subprocesses: information acquisition, evaluation, action and feedback. The presence of feedback in models of problem solving and risk management implies that these processes are cyclical in nature and should be treated as activities that are on-going. It is, in this sense, that risk management is sometimes described as a vehicle for continuous improvement in health and safety. More sophisticated models of decision making (and organisational problem solving) are available in the literature (see Koopman and Pool, 1990). A typical model of risk management as problem solving is described below:
Steps 3 and 4 – the design and implementation of control strategies – has to be broadly interpreted in relation to the management of work stress. The objective of such strategies is to reduce the risk associated with exposure to stressful hazards and this might be achieved in a number of different ways; through primary prevention, timely management reaction, enhanced employee support, and treatment and rehabilitation (Cox, 1993; Cox, Griffiths and Rial-Gonzalez, 2000). Although it is argued here that the priority is prevention, in practice the control strategies adopted tend necessarily to be a mixture of these various approaches. It is at this stage in the overall process that there is an obvious interface between health and safety management, occupational health, and employee support and welfare.

2.2 HS(G)65. SUCCESSFUL HEALTH AND SAFETY MANAGEMENT

The Health and Safety Executive’s publication, Successful Health and Safety Management (HS(G)65), can be used to provide the wider context for the model outlined above. It describes the key elements of a general system for the management of health and safety, and proposes a model that relates these different elements through a number of information and control links. The publication discusses each element in turn. What is important here is that this system incorporates risk management and, at the same time, provides its wider context in terms of issues of policy and related organisation. The system is presented in Figure 4.

At the heart of the HS(G)65 system is a sequence of four activities – auditing, planning and implementing, measuring performance, and reviewing performance – which together with their various information and control links effectively describe the risk management process within the problem solving framework. Each of these activities is identifiable in the system presented and discussed in this Report. HS(G)65 is therefore a useful adjunct to the present Report.

2.3 OTHER POSSIBLE RISK MANAGEMENT MODELS

Various staged models of risk management exist in the health and safety literature, for example, Skinner (1962), Cox & Tait (1991), and van der Heijden & Stern (1992). These models vary in the emphasis that they place on particular stages of the overall process, according to their intended application or context. For example, Skinner’s (1962) model for microbiological hazards places an emphasis on risk assessment and describes five stages: hazard identification, risk characterisation, risk estimation, exposure and option evaluations. There are special considerations in deciding how a microbiological risk should be expressed (risk characterisation). There is also a question of which risk should be expressed. Even if
individuals are exposed to a pathogen, they may not become infected; if they do become infected they may not become ill; if they do also become ill they may not die. The choice of end-point (exposure, infection, disease, or death) is also very important. There are somewhat similar decisions to be made about the measurement of exposure; Covello (1992) has argued that instead of using a mean statistic or single estimator of exposure, risk assessment should work with the worst and best cases. This a strategy that is being actively considered by the Institute in relation to the dissemination of web-based information on good practice in the management of work stress.

There are now several substantive texts that together discuss not only the general principles of risk management and particular models (for example, Stranks, 1996; Hurst, 1998; Cox and Tait, 1998) but also their scientific and socio-political contexts (for example, Bate, 1997). All the models reviewed as part of this project incorporated or otherwise recognised five important elements or principles: that risk assessment is a crucial first step, that it has to have a declared focus (on a defined work population, workplace, set of operations or particular type of equipment, etc.), that it logically informs subsequent actions, that in turn those actions have to be evaluated using a multiplicity of measures, and that the whole process has to be actively managed.

![Diagram](image-url)

**Figure 4: HS(G)65: a system for health and safety management**

The general model chosen as the basis for the present research and development project is based on a general summary of systematic problem-solving processes as used both in applied psychology and in management science. Essentially the project is concerned with the adaptation of a general model of risk management to the particular problem and context of work stress.
2.4 THE ADAPTATION PROCESS

It is important to establish realistic expectations of what is achievable when adapting a general model of risk management for work stress. Two issues are important:

- First, there cannot be an exact point-by-point translation of models developed for more tangible and physical risks to situations involving work stress. There is a need to think logically and creatively when adapting such models. The issues that arise should be decided in the light of legal requirements and practical constraints, informed by scientific knowledge.

- Second, a risk management approach to work stress will not be ‘rocket science’ in terms of its specifications, the absolute accuracy and specificity of its measures or the mechanisms underpinning its decision making. Nor does it have to be. The goal is a “good enough” system to facilitate compliance with the health and safety legislation that provides a vehicle for progress in the improvement of working conditions.

2.5 RISK MANAGEMENT FOR WORK STRESS: FRAMEWORK MODEL

At the heart of most risk management models are two distinct but intimately related cycles of activity: risk assessment and risk reduction. These form the basic building blocks for the staged model adopted for this Report. However, in addition to risk assessment and risk management, other components are specified. These include ‘evaluation’ and ‘organisational learning and training’. The model also introduces a new linking stage between risk assessment and risk reduction, that of ‘the translation process’. Because all aspects of the risk management process should be evaluated, and not just the outcomes of the risk reduction stage, the ‘evaluation’ stage is treated as supra-ordinate to the other stages. This model of risk management is shown below (Figure 5), and is reflected in the structure of this Report (Sections 3 to 7). Each of the five components of risk management is discussed in turn. The risk reduction stage, in practice, tends to involve not only prevention but also actions more orientated towards individual health and welfare.

![Figure 5: A framework model of risk management for work stress](image-url)
There are parallels between the model adopted here (Figure 5) and the organisational intervention process being developed by applied researchers in the USA. The "interventions team" working as part of NORA (NIOSH, 1999) have developed a somewhat similar model based on an analysis-intervention cycle with an emphasis on the need for evaluation and for the feedback of evaluation data to inform earlier stages in the overall cycle (Goldenhar, Landsbergis & Sinclair, 1999) (see Figure 6 below).

![Figure 6: Intervention research in occupational safety and health: a conceptual model](image)

More recently, the Institute of Occupational Medicine, Scotland, has developed an 'Organisational Stress Health Audit (OHSA)', citing the work of the senior author and his colleagues at Nottingham, but focused on an analysis of the whole organisation largely using established research questionnaires (Lancaster, Pilkington and Graveling, 1999). Their point of reference for the OHSA as a risk management tool is the Control of Substances Hazardous to Health (COSHH) Regulations cited as 1988.
SECTION 3: RISK ASSESSMENT

Section 3 of this Report focuses on the development of an appropriate and adequate risk assessment for work stress. It is presented in five parts. The first is an overview that answers two basic questions. These are “what are we trying to achieve through a risk assessment for work stress?” and “given the plethora of scientific studies on work stress, do we need a new method of analysing stressful work situations and assessing the associated risks to health?”. The second part unpacks the logic underpinning the design of the system, while the third part addresses the main issues associated with the design that was adopted, including the use of employees’ expert knowledge and the related issue of reliability. Part four presents the heart of the matter, describing in detail the various steps and stages involved in completing an assessment, and, finally, part five describes how the information and data collected might be analysed.

3.1 OVERVIEW

Two questions require immediate answers:

- What are we trying to achieve through a risk assessment for work stress?

- Given the plethora of scientific studies on work stress, do we need a new method of analysing stressful work situations and assessing the associated risks to health?

What are we trying to achieve through a risk assessment for work stress?

We are trying to identify, for a defined employee group, with some certainty and in some detail, any significant sources of stress relating to its work and working conditions, that can be shown to be associated with an impairment of the health of that group or of their organisation. This is the objective of a risk assessment for work stress.

Several points are important to note, and influence the design of the assessment procedure (see Box below).

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2 Some of the points made in parts two and three were presented in a keynote paper to the 50th Anniversary Meeting of the Finnish Institute of Occupational Health, Helsinki (Cox & Griffiths, 1995).
Key issues in the design of a risk assessment for work stress:

- Work with a defined employee group (see Section 3.3.2)
- Identify significant (non trivial) sources of stress related to work and working conditions
- Provide evidence of associated impairment to health
- Use reliable methods to ensure the certainty with which conclusions about risks can be drawn
- Work at a level of detail which can inform any subsequent risk reduction activities

Many of the issues that need to be addressed determine the quality of the evidence being collected. These reflect the nature of that evidence, its reliability, and the method by which it is collected. The likely risk factors that the current assessment will identify are at the level of the group, and consensus at this level is important both as a test of the reliability of the information and as ‘part guarantor’ that those risk factors are not trivial.

The assessment data should be used to stimulate and inform discussion within the organisation. This discussion will be about the need for, and nature of, any subsequent risk reduction activity. However, there are other, slightly more distant, but important, uses of the assessment data (see below). In reviewing these, it becomes clear that the economic arguments for organisations investing in risk assessment for work stress can be strong.

Risk assessment data should:

- Help promote the improvement of the design and management of working conditions towards better employee and organisational health and performance
- Provide opportunities for organisational, management and employee development
- Reduce the likelihood of claims against the organisation for breach of duty of care, and improve its defence against such claims
- Strengthen the organisation’s position with regard to employee liability insurance
Do we need a new method of analysing stressful work situations and assessing associated risks to health?

There are a daunting number of research papers on work stress and health covering almost every conceivable work setting and occupation, and numerous reviews of such papers (e.g., Cox, 1993; Cox, Griffiths and Rial-Gonzalez, 2000; Cartwright & Cooper, 1996; Borg, 1990; Hiebert & Farber, 1984; Kasl, 1990; Cooper & Marshall, 1976). However, it has been argued (Cox & Cox, 1992, 1996; Cox, 1993; Cox, Griffiths and Rial-Gonzalez, 2000) that the approach traditionally adopted in research into the nature and effects of work stress is neither appropriate nor adequate as an assessment of the associated risks. This important point may be eventually tested in law.

The traditional approach to stress research has a number of methodological weaknesses in relation to the requirements of an adequate risk assessment for work stress (see Cox & Griffiths, 1995a). Many studies have simply identified and listed stressors with no attempt to establish the association between them and related effects on health. While others have attempted to use measures of working conditions to predict particular health outcomes, their focus has often been on the particular health outcome, and the research has been conducted out of theoretical rather than practical interest. The measures used have often been derived from high-level theories and models developed for comparing different jobs. As such, they ignore aspects of work particular to any one job. The question has been more ‘what problems do different work groups share?’ than ‘what are the problems of this particular work group?’

Few studies have selected or defined their samples or populations adequately enough for risk assessment purposes, nor have they sufficiently allowed for the situation or general context of those groups in their study designs and procedures. Such studies appear relatively uninterested in the actual situation of the sample or population being examined.

Most of the statistical analyses used in such studies have handled data at the level of the individual employee and not at the level of the employee group (the assessment group). This reflects a bias towards dealing with work stress as an individual problem.

Furthermore, such studies do not usually provide data sufficient for immediate use in risk reduction. An almost unavoidable corollary of this is that most “stress management” interventions are often divorced from, rather than contingent on, the process of problem analysis. They have therefore to use off-the-shelf designs, and, out of necessity, target the individual rather than the organisation (Cox, 1993).

The answer to the question – do we need a new method of analysing stressful situations and assessing associated risks? – is ‘YES’.

3.2 THE LOGIC AND STRATEGY

The logic underpinning this Report’s risk assessment strategy was framed by current thinking in health and safety management and set within the general model of risk management described in Section 2. It can be described by a six-stage process:

[1] Hazard identification: reliably identify the stressors which exist in relation to work and working conditions, for specified groups of employees, and make an assessment of the degree of exposure. Since many of the problems that give rise to the experience of stress at work are chronic in nature, the proportion of employees reporting a particular aspect of work as stressful may be a "good enough" group exposure statistic.
[2] **Assessment of harm**: collect evidence that exposure to such stressors is associated with impaired health in the group being assessed or of the wider organisation. This validation exercise should consider the possible detrimental effects of work stress in relation to a wide range of health-related outcomes, including symptoms of general malaise and specific disorders, and of organisational and health-related behaviours such as smoking and drinking, and sickness absence.

[3] **Identification of likely risk factors**: explore the associations between exposure to stressors and measures of harm to identify likely risk factors at the group level, and to make some estimate of their size and/or significance.

[4] **Description of underlying mechanisms**: understand and describe the possible mechanisms by which exposure to the stressors is associated with damage to the health of the assessment group or to the organisation.

[5] **Audit existing management control and employee support systems**: identify and assess all existing management systems both in relation to the control of stressors and the experience of work stress, and in relation to the provision of support for employees experiencing problems.

[6] **Recommendations on residual risk**: taking existing management control and employee support systems into proper account, make recommendations on the residual risk associated with the likely risk factors related to work stress.

This six-stage scheme is represented diagrammatically in Figure 7 below. This figure provides a schematic summary of the risk assessment strategy.

![Figure 7: Assessment strategy](image-url)
3.3 DESIGN ISSUES

The design of the procedures required by the six-stage risk assessment described above was guided by consideration of a number of scientific and legal issues: the key ones are discussed below. The elicitation and use of employees' expert knowledge, and the related issues of veracity and reliability, are of major importance.

3.3.1 The Focus on Working Conditions

The logic of the assessment method is partly determined by its focus. Existing UK and EU health and safety legislation is clear on this issue:

- The concern is for work and working conditions
- The focus is primarily on prevention
- The need is for organisational level interventions, because
- The organisation is the generator of the risk

Thus the risk assessment procedures were designed to provide information on the risks associated with the design and management of work and work environments, work groups and the organisation. It is concerned with the estimation of risk to health at the group level and not of risk to any specified individual. This focus also affects the choice of the statistical analyses used (see Section 3.6) and the subsequent design of interventions.

3.3.2 Working with Groups

The risk assessment method deals with work groups and the average worker as represented by the group mean. Therefore there is a need to define the work group being assessed, and a need to measure consensus within the group on the stressfulness, or otherwise, of their work and working conditions.

Definition of the Assessment Group

It is crucially important to define the work group being assessed, and this is usually done in terms of:

- The type of work being undertaken
- A specification of workplace or geographical locale
- A specification of organisational level

The group that is chosen for the risk assessment should be recognisable and meaningful within the context of the organisation. This is important for the assessment phase but is crucial for the design and management of any subsequent intervention. It is likely that the tighter the definition, and the more homogenous the group, the clearer the results of the risk assessment will be. The assessment group is also referred to in this Report as the assessment sample.

Consensus

In assessing group exposure to what are largely chronic stressors, some measure of agreement or consensus is necessary. Such measures will give information, relevant at the group level, not only on the reliability with which a stressor is being identified but also on the size of the problem.
3.3.3 Employees’ Expert Knowledge of Work

The evidence is that the world of work as experienced is what drives individual employees' behaviour and, in part, is what determines their health (see Cox, 1993; Cox, Griffiths and Rial-Gonzalez, 2000). The hazardous nature of stressors and their effects on health are mediated by employees’ experience and their knowledge of work (see Figure 2). That expert knowledge of work must be harvested for a risk assessment for work stress through the use of appropriate knowledge elicitation techniques. However, there is, among many employers, a fundamental mistrust of asking working people about their work. The common assumptions are that such data are inherently unreliable and biased.

The assumptions of unreliability and bias grow from the belief that the 'employee' is not a scientist (cf. Kelly, 1955), is incapable of proper reflection, is unreasonable, self-seeking and politically motivated, and is naturally 'a deceiver'. These are unsubstantiated beliefs but are frequently offered in rejection of employee involvement in the risk assessment process. Their rejection is essentially a political position often adopted as a defence against the possibility of organisational change. What this argument does establish, however, is the need to check the reliability and veracity both of the techniques that are used to harvest employees’ expert knowledge, and of the data collected. This can be done in a number of ways that may be used in combination to increase confidence in the assessment process.

In many situations, face validity (the common perception that the data are valid) is not a particularly powerful device. However, in the assessment situation, its importance cannot be under-estimated both as a test of the veracity (and acceptability) of the assessment data and as an initiation of the subsequent process of intervention. As such, establishing the face validity of the assessment data is an important part of the translation process (see Sections 4 & 5).

<table>
<thead>
<tr>
<th>Establishing the reliability &amp; veracity of employees’ expert knowledge of stressors by:</th>
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<tbody>
<tr>
<td>• Auditing the design of the measurement scales used against good scientific (psychometric) practice</td>
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<tr>
<td>• Formally testing the reliability (internal and test-retest) of those scales</td>
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<tr>
<td>• Measuring consensus (agreement) within the assessment group</td>
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<tr>
<td>• Triangulating the self report data with other sources of information available in the organisation, to ‘paint the big picture’</td>
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<tr>
<td>• Formally testing the concurrent validity of the data against health-related outcomes</td>
</tr>
<tr>
<td>• Testing the conceptual validity of the data against established findings in the scientific literature</td>
</tr>
<tr>
<td>• Testing the face validity of the data by feeding it back to the assessment group.</td>
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</table>

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3 Prevailing theories of expertise have been developed primarily in relation to intellectual tasks, but Scribner (1990) has argued convincingly that all work involves complex forms of practical and creative thinking. This view is echoed by Laufer and Glick (1998). Experience of work leads naturally to some degree of knowledge of it, or about it, and therefore to some expertise in relation to its problems and to problem solving.
3.3.4 Conceptualisation of Stressors

Deciding what are and what are not stressors is far from straightforward. It has often proved difficult in relation to the more tangible area of physical hazards4, and there are many important questions to be answered in relation to psychosocial and organisational hazards. For example, should the definition of psychosocial and organisational hazards include aspects of work and organisations such as ‘corporate policies, paid leave of absence, promotion, health insurance coverage, etc.’ (Landy et al., 1994), even if the presence or absence of such things can be associated with harm to employee health? Furthermore, psychosocial and organisational hazards can often be conceptualised as part of a continuum that is represented by the hazard at one end and by the complementary health-enhancing factor at the other (for example, from very low to very high job control). Physical hazards, such as exposure to asbestos, often have a very different structure being negative per se without offering any obvious benefit for employee health. Other than not being present, they lack any potential health-enhancing role.

Further checks on the reliability & veracity of employees’ expert knowledge of stressors:

- Social desirability effects (a common source of bias) can be tested for and screened out at several stages in the development of the assessment (Ferguson & Cox, 1994).

- Respondents’ patterns of reporting can be examined for halo effects: any evidence of differential effects would reduce the likelihood of the assessment data being driven by halo or similar effects (for example, negative affectivity).

- The use of different measurement techniques and different sources of data should reduce the likelihood of common method variance (Jick, 1979).

3.3.5 Measurement of Harm and Health

The definition and measurement of harm is no less challenging than those of stressors. It is not a simple task to achieve a reliable classification of harms, or measures of degrees of harm, even when one is concerned with physical rather than psychological or social outcomes. Moreover, a number of studies (Landy et al., 1994; Kasi, 1986, 1990; Johnson, 1996) have identified the difficulties encountered when researchers and practitioners have to decide on what particular indicators of harm they should use. Many such indicators, in practice, are flawed due to self-selection effects, complex methods of measurement and usage, recording and reporting problems, or confounding variables (uncontrollable, or unmeasured, influences on the data). A good example is offered here by the unreliable nature of medical certificates provided by general practitioners for absence from work.

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4 For example, there is currently an Internet-based project sponsored by the OECD to harmonise the definitions of the basic generic terms involved in the risk assessment of chemical hazards (OECD 1997)
3.3.6 Individual Differences

The estimation of risk at the group level is effectively the estimation of risk for the average employee, and can be contrasted with the estimation of risk for any specified individual. Where there is much difference between the two, then individual differences obviously exist. There are several points to note here. First, the individual differences that exist can only operate through the person's interaction with their work environment (etc.). There is no other logical pathway by which their effects can be made manifest. Second, there is no evidence that the individual differences that exist in respect to the effects of stressors on health, are any greater (or less) than those that exist in relation to other health hazards. Therefore, the existence of individual differences does not negate the overall assessment exercise. Rather, it adds an important extra dimension, and opens up questions about moderators (those factors that influence the strength and behaviour) of the stressor-health relationship. It should be noted here that despite these arguments and the fact of any group-based risk assessments, employers still have a duty of care to the individual.

3.3.7 ‘Rocket-Science’

Because of the state of current knowledge and because of the very nature of the problem, the quantification of the key variables in the assessment process and the estimation of risk cannot be ‘rocket science’. Indeed, one has to guard carefully against false accuracy. One has also to guard against allowing an unrealistic quest for more precise quantification to distract from the management of the key process issues (see Sections 4 through 7).

Not being ‘rocket science’ is not a problem in that legally a risk assessment has to be ‘suitable and sufficient’ (Management of Health and Safety at Work Regulations, 1999 (Regulation 3(1)) rather than perfect, or the ideal. The assessment has to be good enough to identify major threats to worker health and does not have to be refined sufficiently to pick up all the different nuances of complaint that could exist in any work group. Decided cases and agreed out-of-court settlements (see, for example, Griffiths, Cox & Stokes, 1996) can be used to ‘benchmark’ this exercise. An assessment must be good enough to detect, at the very least, the sort of stress-related problems that have been the subject of successful cases and settlements such as Walker vs Northumberland County Council (Industrial Relations Law Reports 35, 1995).

3.4 THE ASSESSMENT METHOD

This part of the Report sets out the practical steps involved in making a risk assessment for work stress. It concerns the overall strategy and the process by which that strategy can be applied in any particular situation.

Throughout this method of risk assessment for work stress, three important things must be borne in mind and their implications fully understood.

The method is not an off-the-shelf recipe to be mechanically followed, nor is it a set of universally applicable measures.

What is offered is a methodology: a strategy and a supporting process. Adherence to the logic and the principles that underpin the strategy and process are the important features of this approach. This has to be so because of the uniqueness of the work situation of each group of employees assessed.
The assessment process as applied, and the data collected, will vary according to a number of factors – factors that vary from organisation to organisation, and between assessment groups within the same organisation. The process is context dependent.

While maintaining the overall strategy, the process must be tailored to the needs and the situation of each assessment group. This may involve little change or it may require thoughtful modification of what is done and how it is done. The data collected will relate specifically to the group assessed and its work situation. It should be sufficiently detailed to allow the design of any interventions necessary for that group. This is not to say that, at an appropriate level, aspects of the assessment process and of the data cannot be generalised to other groups within the organisation, or even across organisations. This issue is an empirical one and is dealt with later (see Section 6).

The assessment process does not specify particular measures that must be used.

In all organisations, there should already exist some form of data collection, assessment, monitoring or surveillance systems, and related organisational records. Furthermore, special projects using particular measurement devices may have been conducted. A risk assessment should work within the framework of what is available given that:

- The measures used can be defended as psychometrically sound, appropriate for the task in hand, and properly applied and interpreted

- The measures provide sufficient information for the successful completion of the whole risk assessment against its stated objectives

Depending on how good they are, and how well they contribute to the overall assessment, existing measures may need to be supplemented or developed. What is important is collecting information that together allows the logic of the risk assessment to be worked through, conclusions drawn and justified, and recommendations made and supported by evidence.

3.5 TAILORING THE RISK ASSESSMENT

The risk assessment method must be tailored to the needs and situation of the particular group being assessed and to those of the organisation.

The extent to which any one group of employees shares problems with any other group is an important question, and one that can only be answered empirically. Undoubtedly there will be problems that, at some level of analysis, will be common across different work groups, workplaces, organisations or sectors; there will be others that will not.

The fact that a problem is not shared by many different groups does not mean that it is not important. An assessment that is capable only of dealing with the high level problems that are common across many different work groups is unlikely to prove adequate or appropriate in law with respect to the needs of any particular assessment group. Some degree of tailoring of the overall method to the specific situation of a defined work group is both practically and legally necessary. However, the acceptance of the need to define assessment groups and tailor risk assessments to their situation does not mean that each assessment has to "re-invent the wheel" from first principles. The general principles underpinning the assessment method hold wherever and whenever they are applied.
The tailoring process operates in respect to:

- The management of the assessment process to reflect the nature and political realities of the assessment group and the organisation
- The design of the instrument for identifying and assessing exposure to work stressors to reflect the reality of the assessment group's needs and situation
- The choice of measures to include for health-related outcomes to ensure coverage of all likely forms of harm. This choice may also be guided by the need to benchmark against existing normative data

### The objective of a risk assessment for work stress:

The risk assessment strategy and procedures used here were designed:

- For use with a defined and meaningful group of employees
- To identify, with some certainty and in some detail, non-trivial sources of stress relating to the work done by the group of employees and to their working conditions
- To identify sources of stress relating to the work done and the working conditions that are associated with an impairment of the health of the group or of the organisation

These sources of stress are termed *likely risk factors*.

### 3.6 THE OVERALL STRATEGY

The identification of likely risk factors associated with work stress begins with the exploration of employees’ expert knowledge of their work and working conditions. Their judgements on the adequacy (or acceptability) of important aspects of their work are central to the assessment process. Consensus within the assessment group on these situational judgements on work is an indication not only of the reliability of such judgements but also of the group’s exposure to work stressors. The reliability of employees’ expert judgements can be established in a variety of ways (see earlier Section 3.3).

The possible relationship between the stressors as identified by the group and their effects on health is treated as the basis for identifying likely risk factors. In the majority of situations, this relationship will be one of association, rather than causal, and will be the subject of either logical argument or statistical proof. Where statistical techniques are available, it may be most appropriate to use Odds Ratios, giving a group-level association appropriate to an expert judgement on work characteristics (see Appendix I).

The likely risks are balanced against the results of an audit of existing management control and employee support systems. At this stage, consideration can also be given to the possible impact of the positive aspects of work on health. This 'balancing' allows some understanding of the
residual risk to health. It is the notion of residual risk to health that provides the basis for the recommendations made and for the design of any subsequent interventions. A summary of this strategy was provided earlier in Figure 7.

In addition to the identification of likely risk factors and recommendations on residual risk, the assessment strategy and procedures allow for the identification of the major problems that might exist in relation to work and working conditions other than those affecting health (see Figure 8 below). These are the aspects of work and work conditions judged as inadequate by the majority of the assessment group, but not necessarily associated with any health outcomes. This provides a different sort of management information from that on likely risk factors.

Figure 8: Working conditions, inadequate aspects of work and likely risk factors
3.7 FIVE STEPS TO A RISK ASSESSMENT FOR WORK STRESS

The assessment process in practice can be summarised in five steps. These are described below. The related process issues are discussed later in this section.

The five steps for the risk assessment for work stress:

- Step 1: Familiarisation
- Step 2: Work Analysis Interviews
- Step 3: Assessment Survey
- Step 4: Audit of Existing Management Control and Employee Support Systems
- Step 5: Analysis and Interpretation of Assessment Data

Each step builds on information collected during the preceding steps. The initial steps (Steps 1 and 2) were designed to build a model of the work and working conditions of the assessment group that was good enough to support the design and later use of the assessment instrument (Step 3). This instrument would quantify the group’s exposure to all the significant stressors associated with its work and working conditions, and assess its health effects.

The five steps are largely sequential with one possible exception. The audit of existing management control and employee support systems can be conducted either:

- In parallel with the Work Analysis Interviews or
- Following the Analysis and Interpretation of Assessment Data

It is often most convenient to conduct it in parallel with the Work Analysis Interviews. In this case, the information collected can usefully contribute to the working model of the assessment group’s situation.

The different steps involve a range of activities and call on different types of skill. In the work described in this Report, this challenge was met effectively through team work. In each case study reported here (and in all those reported elsewhere), the risk assessments (and subsequent interventions) were conducted by at least two people working closely together. These people were selected, as appropriate to the case study, from a larger group of applied researchers all of whom were competent in relation to risk assessments for work stress.
These five steps can be mapped onto the overall assessment strategy (see Figure 7 above) as shown in Figure 9 below.

**Figure 9: Risk assessment strategy and procedures**

### 3.7.1 STEP 1: Familiarisation

The initial step – familiarisation – is very important. Indeed, its importance in relation to the success of the overall risk management approach cannot be over-stated. It provides the means for ‘getting in and getting started’, the vehicle for ‘getting on’, and shapes expectations in relation to ‘finishing and getting out’. Careful attention has to be paid to the planning and management of this first step.

Familiarisation has three related objectives. Each is important.

**Objectives of the first step: Familiarisation**

- Establishing the frameworks, organisation and arrangements that are necessary for the successful completion of the risk assessment: the Steering Group
- Helping the organisation, and its work groups, to get to know the project team and to understand the objectives and nature of the assessment exercise
- Allowing the team to understand the organisation and beginning the collection of the assessment data at the organisational level
Steering Group: Establishing the frameworks, organisation and arrangements that are necessary for the successful completion of the risk assessment.

One of the first steps in setting up a risk assessment for work stress is to establish a Steering Group to oversee and facilitate the project. It is important that such a Steering Group has both authority and credibility. Both will reflect (a) its terms of reference and (b) its membership. All key stakeholders should be involved in the Steering Group in some way. However, at the same time, the group should be kept as small as possible because it is to be a working group. Groups of more than seven or eight people can be difficult to manage.

In the projects completed by the Institute, it has often proved both convenient and effective to organise two different types of Steering Group: an overall project Steering Group – to manage the organisational and strategic issues – working with a more local Steering Group to manage the issues more directly relating to the assessment group chosen. The former groups tended to involve more senior staff, while the latter groups were closer to the “coal faces” and dealt with more technical and process-related issues.

Within each Steering Group, it proved extremely helpful to have a ‘project champion’, a person who acted as an advocate for the project and also provided the day-by-day contact and information necessary for its successful completion. It was necessary to develop a good working relationship between the project team and the project champion. Problems often occurred in the case study projects when their champions, for whatever reason, moved away. This usually created strategic and operational difficulties until a new and effective champion could be identified and agreed, and a good working relationship established with them.

The Steering Group should serve to both guide and give authority to the risk assessment while maintaining both the organisation’s and the employees’ sense of involvement. While the exact composition of the Steering Group will need to reflect the organisation’s structure and culture, it should represent the interests of all key stakeholders, including the employees.

The composition of the Steering Groups may vary, and did vary, across the case study projects. However, it is important for three groups to be represented:

- Senior and line management
- Occupational health, or health and safety management
- Trades unions, staff associations or employee representatives

Sometimes, specialist management was more appropriately represented by personnel or human resource functions than by those related to occupational health and safety. However, in most of the case studies, the latter group, by reason of their own professional training, had a deeper understanding of what was being attempted, and tended to be more supportive.
A Steering Group has a number of specific tasks to complete: these are presented below.

<table>
<thead>
<tr>
<th>Steering Group: Tasks</th>
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<tbody>
<tr>
<td>Representing all interests</td>
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<tr>
<td>Selecting the work groups to be assessed</td>
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<tr>
<td>Approving the assessment strategy</td>
</tr>
<tr>
<td>Planning and implementing the educational and marketing strategy for the project</td>
</tr>
<tr>
<td>Monitoring the assessment process</td>
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<tr>
<td>Discussing and approving progress, including:</td>
</tr>
<tr>
<td>“Signing off” (approving) the survey instrument</td>
</tr>
<tr>
<td>Accepting and discussing the presentation of the assessment data and related recommendations</td>
</tr>
<tr>
<td>Commenting on the assessment report</td>
</tr>
<tr>
<td>Establishing the next step: risk reduction</td>
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</table>

One of the Steering Group’s first tasks is to select the work groups to be involved in the risk assessment, and, in doing so, to provide the evidence to support that choice. It has to approve the strategy to be used. It then has to plan and implement the education and marketing activities that will introduce the risk assessment to those involved, and that will explain the strategy to them, win their trust and encourage their participation.

The Steering Group monitors the progress of the assessment, and acts, as necessary, as a sounding board or discussion forum. It has to approve progress, and, in particular, ‘sign off’ the final assessment instrument (survey). This survey provides the basis for the formal quantified assessment: those aspects of work and working conditions not included in this part of the exercise are deemed, within the terms of reference of the project, not to be problematic or stressful. The Steering Group may wish to provide others in the organisation with an up-date on the progress of the risk assessment.

The Steering Group also receives the feedback from the assessment, and provides a forum for discussing and exploring these data. This aspect of the project – the translation process – is discussed in more detail in Section 4. The Steering Group may wish to provide others in the organisation with a summary of the assessment data and report, and possibly a commentary on the Report and its recommendations. Whatever, it usually has to decide on the next step – designing and implementing any necessary risk reduction programme (see Sections 4 & 5).

**Helping the organisation, and the assessment groups, to get to know the project team, to understand the objectives and nature of the assessment exercise.**

It is important that all those involved in the risk assessment within the organisation understand the true nature of the exercise, and how it relates to them. It is also important that the project team has credibility and is trusted. These objectives can most effectively be met through a programme of meetings and discussions, and also by the provision of appropriate information.

The meetings and discussions can be formal or informal as appropriate. Information can be provided by a variety of means, printed (memos, articles in company magazines or newsletters, notices etc) and electronic (e-mails, bulletin boards, web pages, etc.). The provision of printed or electronic information, per se, is usually a passive form of education, and always needs
supplementing by more active and participatory exercises – meetings and discussions. Together the meetings, discussions and information dissemination form an educational process that is necessary to facilitate understanding, build trust, and shape appropriate expectations of what can and cannot be achieved. It is effectively a marketing process.

Careful attention has to be paid during the educational process and during the marketing of the project to the appropriateness of employees’ perceptions. In particular, attention has to be paid to the natural tendency to see all actions related to stress as being individually-focused and essentially clinical in nature. Misperceptions of this kind can not only damage employees’ trust in the project and their willingness to participate, but also inappropriately shape their expectations about what can and cannot be achieved.

**Getting to understand the organisation and beginning the collection of the assessment data at the organisational level.**

One of the objectives of the familiarisation stage is to begin building a model of the work and working conditions of the assessment groups. However, a necessary precursor to model building is to develop an understanding of the organisation: its structure, function and culture. It is particularly important to understand the history of the organisation and the origins of its current culture.

There are a number of methods available to gather the necessary information. However, there is a great deal of variation in both the quantity and quality of information held by organisations. Consequently, the usefulness of the various methods will vary from organisation to organisation. Discussions with key stakeholders may be necessary to get a “feel” for what is available.

Gathering relevant information can be achieved formally by collecting published information such as mission statements, organisational histories, and organisation charts, or less formally through discussions with key stakeholders; managers, employees and trades union representatives. Company reports and recruitment publicity are often useful sources of information. Walk-through observations of workplaces, meeting the people working there, are essential for quickly building an understanding of the organisation and of the assessment groups.

At the same time, it is necessary to review the data and data collection systems that exist within the organisation and that are relevant to the risk assessment. Particularly important will be data on employee absence, both short- and long-term, on labour turnover and transfers within the organisation (and - where available - reasons for leaving), on time keeping, on complaints, accidents and industrial relations problems, and on occupational health referrals.

The importance of such organisational data is not in what it says about particular employees, but partly in:

- The picture it paints of the overall organisation
- The comparisons it allows between sections or departments, functions, sites or levels and grades of employment

Data such as these may provide a justification for choosing a particular work group for assessment.
3.7.2 STEP 2: Work Analysis Interviews

The Work Analysis Interviews were designed to build on the information collected during STEP 1 (Familiarisation) concerning the nature of the work and working conditions of the assessment groups. They are used to develop a model of the work that is 'good enough' to allow the design of the assessment instrument for quantifying employee exposure to the stressors associated with their work and for assessing possible effects on health. Among other things, the interviews were designed to explore potential work-related stressors, and possibly related effects on health, and on health-related and organisational behaviour.

**Work Analysis Interviews: Focus in case study projects:**

- Building a brief description of the person's work, what they do, why and how, where and with whom
- Identifying its positive aspects and its problems (and sources of stress)
- Exploring how work-related problems are thought to affect the health of those carrying out that work
- Discovering what helps in relation to dealing with work stressors or otherwise coping with them

The interviews in the case study projects were semi-structured and allowed the interviewees an opportunity to talk about their work in their own words. The questions – and other prompts – asked about the common experience and behaviour of the work group rather than that of the individual employee. The objective was to elicit the employees' knowledge by asking them to make 'expert' judgements on their work on behalf of their colleagues in the assessment group.

Technically, this requires situational rather than psychological reasoning; for example, judgements such as 'this aspect of work is problematic because ...' rather than personal declarations such as 'I feel unhappy with this aspect of work'.

The interviews should be conducted with a structured sample of the assessment group. In the case study projects, the interviews were conducted either individually or in small focus groups, as best suited the organisation. They usually lasted about 30 minutes.

Ideally the necessary focus groups and the individual interviews should be conducted in several phases on a rolling basis. Each phase should cover a more-or-less representative sample of the assessment group, and the process should be continued until no new information is elicited.

The interviewees, however engaged, were asked to talk briefly about the nature of their work – what they did, why and how, where and with whom – its problems, and how work-related problems might affect the health of the work group. The interviews should end on a positive note, asking about the good aspects of work and what helps in dealing with work stressors or otherwise coping with them. The description of the potentially stressful aspects of work and working conditions presented earlier (see also Cox, 1993; Cox, Griffiths and Rial-Gonzalez, 2000) was used in the case study projects to prompt discussion of work and work problems.
3.7.3 STEP 3: The Assessment Survey

Step 3 involves the design and use of an instrument or questionnaire to survey all members of the assessment group to quantify exposure to the main stressors associated with their work and working conditions, and to measure the health of their group. The design of the assessment instrument draws on the information collected during STEP 1 (Familiarisation) and STEP 2 (Work Analysis Interviews). That information should have allowed a model to be built of the work and working conditions of the assessment group. That model should be sufficiently detailed to permit the identification of the major work-related stressors, measures of their likely effects on health and the positive aspects of work.

Design of the Assessment Instrument

The survey instrument should be as short as possible and focused. It should be presented in a format and using language that will be easily understood by the assessment group. The various questions and items that comprise the instrument should be simply constructed, unambiguous and have meaning in relation to the assessment group and the organisation. The questions, items and scales should be designed in accordance with good psychometric practice, and appropriately tested for reliability. The data from each assessment group should also be examined for sensitivity and for evidence of bias.

The survey instrument used in the case study projects was modular:

Survey instrument: Case study projects

- Module 1: Job and biographical information
- Module 2: Exposure to major work-related stressors
- Module 3: Health profile
- Module 4: Comments and other information

Module 1: Job and Biographical Information
The first module was concerned with two sets of information:

- Information concerning the employee’s job
- Biographical information

The former concerned the nature of the employee’s job (and grade) within the assessment group and organisation, their length of service, their hours of work and the organisation of those hours, and the nature of their duties. The biographical information largely concerned their age and gender.

There is often a tendency to collect more job related and biographical data than are necessary. This is not only bad practice psychometrically but also, effectively, an invasion of privacy. It should be possible always to justify the inclusion of all the questions in the assessment instrument in relation to the original objectives of that survey.
Module 2: Exposure to Major Work-related Stressors and the Positive Aspects of Work
This module was designed to capture employees’ expert judgements on the adequacy or otherwise of various aspects of their work and working conditions.

In the case studies, it was presented as a list of items identified for inclusion from the information collected during the first two steps in the assessment process: Familiarisation and the Work Analysis Interviews. The choice of items for inclusion was based on the triangulation of evidence from, at least, three sources among:

- Stake-holder discussions (Familiarisation)
- Walk-through observations (Familiarisation)
- Organisational records (Familiarisation)
- Work Analysis Interviews

The list of items derived from consideration of these different sources was supplemented from the available scientific evidence, where necessary, to provide complete coverage of all possible areas of difficulty as described earlier in this Report (and in Cox, 1993).

The items on this list of potentially stressful and positive aspects of work and working conditions were each associated with a five-point rating scale. Employees were asked to use their knowledge of their work to judge the adequacy of those items on behalf of their co-workers (from ‘could not be better’ through ‘adequate’, ‘neither adequate nor inadequate’ and ‘inadequate’ to ‘unacceptable’). The emphasis was on situational reasoning (see Section 3.7.2).

Questions were also asked about employees’ experience of harassment at work. These concerned the source, nature and frequency of harassment.

Module 3: Health Profile
Module 3 concerned health as measured by self report. In the case studies, health was broadly defined to include aspects of individual and organisational health.

Case study projects: Measures of health

Self report of:

- Non-specific symptoms of general malaise in relation to feelings of being 'worn out' and of anxiety and tension
- Musculoskeletal discomfort and pain
- Health-related behaviour including sleep duration and quality, smoking and drinking, exercise and diet
- Organisational behaviour including sickness absence, intention to leave organisation, organisational commitment and job satisfaction
The measure of general malaise used in the case study projects (see above) was the General Well-being Questionnaire (GWBQ) developed at Nottingham (Cox et al., 1983, 1984; Cox, 1988; Cox and Griffiths, 1995b). This instrument has been used elsewhere in many different studies of work design and management, and there are extensive normative data available. The measures of musculo-skeletal discomfort and pain used (Randall et al., 1998) and of absence, and other organisational behaviours (Thomson et al., 1998) have been described in detail elsewhere. The measures of health-related behaviour were designed to be consistent with those used by OPCS in the survey of the Health of the Nation (OPCS, 1990; Cox et al., 1996). When and where appropriate, these measures were substituted or supplemented by others available within the organisation.

Module 4: Comments and Other Information
The final module was designed to allow employees to comment on the overall exercise or on the design of the assessment survey instrument. It also provided space for employees to add to or elaborate on their judgements on their work and working conditions, or to record extra information about their health.

3.7.4 STEP 4: Audit of Existing Management Control and Employee Support Systems
The audit of existing management control and employee support systems was designed to explore the measures already taken by the organisation, both formal and informal, to deal with stress-related issues. It is necessary to audit these measures and then take them into consideration when subsequently deciding on the residual risk to employees and the recommendations.

The audit used in the case study projects was based on the standard form of enquiry used when auditing health and safety management systems. It explored areas of concern such as:

- Organisational culture and history
- Policy
- Organisation and arrangements supporting policy
- Occupational health and related provision
- Referral systems
- Management and employee training
- Management competence

The audit was conducted through visits to the appropriate parts of the organisation, functional and geographical, interviews and focus groups involving key stakeholders and 'experts' and the collection of written materials and electronically available information.

3.7.5 STEP 5: Analysis and Interpretation of Assessment Data
The data from STEP 3 (the Assessment Survey) were analysed to provide a commentary on the health of the assessment group, the major problems that the group faced in relation to their work and working conditions, the positive aspects of their work, and the likely risk factors for work stress. These data must be interpreted in the light of the other information collected during STEPS 1, 2 and 4, and, in particular, must take proper account of the measures that the organisation has already taken to deal with work stress (STEP 4).
3.7.6 The Analysis Sequence

The analysis was conducted in four basic steps (STEPS 5.1 – 5.4): a discussion of the statistical techniques available to support this sequence is offered in Appendix I.

**STEP 5.1: Identification of Stressors**

The first step was to use the data from module 2 of the assessment instrument to identify the major stressors reported by the assessment group and to assess group exposure. The question here was one of cut-off: to consider the full range of major problems but not list every individual complaint. A set of guidelines was needed to inform decisions on where the cut-off point should be set.

It has been argued that, because most work stressors are chronic in nature, both the identification of major stressors and the assessment of group exposure can be made in terms of the level of consensus (% agreement) on the presence of the stressor. Therefore identification of major stressors and group exposure was based on the proportion of workers reporting the problem, while taking into account the size of the assessment sample, the number of employees completing the survey instrument and the representativeness of this sub-group. 20% means something different in a returned sample of 20 from one of 200. The greater the size of the assessment group, the greater the response rate and the greater the representativeness of this sub-group, the smaller the % agreement that can be accepted as indicating a significant problem.

Usually, in the case studies, only those stressors that were agreed by the majority of employees (> 50%) were considered, and, in most cases, only those that commanded agreement from three-quarters or more of the assessment group (> 75%) were considered. Attention was paid to the weight of any subsequent legal argument in deciding these cut-offs: “the (vast) majority of employees agreed that this aspect of their work was a problem (stressor)”.

Those aspects of work reported as adequate or good by > 50% of the assessment sample should be considered in a similar way, and recommendations should be made to maintain or strengthen these.

**STEP 5.2 Health Profile**

The second step was to use the data from module 3 of the survey instrument to summarise the health profile of the assessment group. The question here was “how healthy is the group?” in relation to available comparative and normative data.

The health profile of the assessment sample should include a general statement of the overall health status and highlight any particular concerns regarding specific aspects of health. Attention should be drawn, if necessary, to any particular ‘at risk’ sub-groups, for example, by grade, age or gender, or by workplace.

**STEP 5.3 Likely Risk Factors**

The third step was to identify likely risk factors by exploring the associations between employees’ expert judgements on the adequacy of their work and working conditions and the report of health at the group level. This step combines data from STEPS 5.1 and 5.2. This may be based on statistical analysis or on logical argument. In the latter case, the argument that a stressor is or is not associated with harm to health should be able to stand the test of both logical and legal scrutiny.
The data were analysed to identify which of the major stressors showed evidence of association with negative health outcomes at the group level, and were thus likely to be risks to health. It is important to note that linkage was made at the level of association: it is not possible to tease out and draw precise conclusions about 'cause and effect' in such analyses. Not all the inadequate work characteristics identified will necessarily show an association with health outcomes.

In the case study projects, the main emphasis in the identification of likely risk factors was placed on:

- Non-specific symptoms of general malaise
- Musculoskeletal discomfort and pain
- Health-related behaviour, such as sleep duration and quality, smoking and drinking
- Sickness absence and intention to leave

The statistical strategy used to explore these relationships was based on the use of Odds Ratios (ORs) (see Appendix I). The use of this technique is important because it is consistent with the principles of the risk assessment method developed here. Whereas correlations take the scores of each individual as the data case and establish association at individual level, ORs take group-based frequencies allowing associations to be examined at the level of the whole group.

**STEP 5.4 Residual Risk and Recommendations**

Having identified the likely risk factors, consideration was given to three factors that might counter the risk to health:

- Existing management control systems
- Employee support systems
- The positive aspects of work

The first two factors were assessed as a result of the audit of management control and employee support systems (STEP 4), while the major positive aspects of work were identified in STEP 5.1 (above). As a result of such consideration, a statement on the residual risk to health, due to work stress, was made.

The balance between the negative aspects of work and working conditions, the positive aspects and measures taken to control stress-related problems and support employees cannot be formulaic, but has to be the subject of professional, legal and scientific judgement.

The final step was the formulation of recommendations on residual risk. In deciding on recommendations, it is necessary not only to identify likely risk factors and residual risk, but also to decide on the priorities for action. This decision may be informed by the statistical analysis of the data, and may involve information on the proportion of workers ‘exposed’ to the stressor, the strength of the stressor-harm relationship (risk), and the magnitude of the harm. It is likely that any formal calculation based on these dimensions would result in false accuracy and be misleading. Therefore it is suggested that, following common practice elsewhere, these data might be presented diagrammatically. A two-dimensional plot is suggested in Figure 10 below.
Figure 10: Suggested diagrammatic representation of priority of risk factors

It is argued that, in all but extreme situations, the harms caused by exposure to stressors will be broadly equivalent. Plotting magnitude of harm is therefore not necessary. The two dimensional plot is therefore of proportion of workers exposed to the stressor against the strength of the stress-harm relationship. The hypothetical diagonal is thus a dimension of triviality — importance, and the position and closeness of any stressor to this diagonal could inform subsequent decision making. While this plot is not intended to specify exact cut-off points for action, it can be a useful aid to decision making during the translation phase (see Section 4).

Likely Risk Groups

Having established the likely risk factors for the assessment group as a whole, it is then possible to examine if there are any particular ‘at risk groups’.

This can be achieved statistically by taking each of the likely risk factors, identifying from the OR calculation who is in the ‘response’ group for both variables, and running a breakdown on this group’s biographical and work details. The question to ask is: do those in the risk group belong to an identifiable sub group, or are they simply a random set of individuals distributed across the whole assessment group? The logic behind this step is that if the people “at risk” are grouped together by some work-related or biographical variable, then it is likely that the factor that they share contributes to the risk.

3.8 ISSUES OF INTERPRETATION

There are two issues that require further comment in relation to the interpretation of the risk assessment data, those of:

- Association
- Generalisation of findings
3.8.1 Association

The assessment method operates in terms of associations between stressors and health outcomes. This is good enough evidence for the overall risk management process. Re-working the process so that it provides a basis for causal inference may not be feasible in terms of the effort required. One only needs to consider the differential effort required to prove beyond reasonable doubt the effects of asbestos or radiation on health compared to those of job control on cardiovascular disease (see Kristensen, 1996).

The interpretation of such associations must be treated with caution. For example, consider the situation where an association is found between inadequate level of communication with line manager and employees’ reports of being worn out. It will remain unclear from the sort of data collected whether the inadequate levels of communication with their line manager cause employees to report feelings of being high ‘worn out’, or whether feeling ‘worn out’ causes them to report inadequate levels of communication with their line manager. There might be a third, underlying factor driving both. Associations must be stated and interpreted with caution.

Attempts have been made here to improve the judgements on work and working conditions by making them less subjective, asking employees to use situational reasoning in reaching those judgements (see Section 3.7.2). Employees have been asked about the adequacy of work characteristics, rather than about their feelings of dissatisfaction in relation to those work characteristics.

3.8.2 Generalisation of the Assessment Data

The generalisation of the assessment data and findings can occur at three levels:

- The comparison of raw data
- The comparison of aggregated data
- The comparison of risk factors

The raw data from the assessment can be directly compared across work groups where such comparisons are allowed by the tailoring process. In reality, this most often occurs in relation to the health related data, especially where standard measures have been deliberately included for the purposes of comparison.

Second, the data on stressors and exposure to stressors can be aggregated (grouped) by ‘category of stressor’. Suitably weighted, such data can be compared across groups and organisations. For example, two assessment groups might report very different ‘organisational stressors’ but when the data are suitably weighted it may be clear that for both groups ‘organisational stressors’ are the main problem area. Conversely, different assessment groups may report essentially the same profile of organisational stressors, but in one it is obvious that they are the main or only problem, while in the other they may be relatively minor compared with much greater problems elsewhere.

Third, the likely risk factors can be compared either directly or by category, or in terms of some underlying organisational pathology identified during the ‘translation’ process (see also Section 6.4.2).
SECTION 4: TRANSLATION

Section 4 of this Report is concerned with feeding back the assessment information to the organisation, and how such information is related to the exploration and design of any subsequent risk reduction programme. In all the case studies, these activities were found to be crucial. Their importance has resulted in them being conceptualised as a discrete phase of the risk management process: translation. A model of translation based on a medical analogy is described here.

It was believed initially that feeding back the results of the assessment and then deciding on and planning any subsequent interventions would be a straightforward process. However, during the research it became apparent that the related processes by which risk assessment results were used to inform the design, implementation and evaluation of subsequent risk reduction activities were more complex and important than had been anticipated. They represent a distinct phase in the overall risk management process. Discussions with the Finnish Institute of Occupational Health (FIOH) have since lent support to these conclusions. The processes that were involved in bridging the gap between the risk assessment and the risk reduction activities have been termed 'translation processes' (see Figure 11 below).

Figure 11: The 'translation processes'

The process of feeding back information was originally conceptualised as a simple link between the phases of risk assessment and risk reduction. No preconceptions existed, except that the discussions would be relatively brief and straightforward. However, in practice, they emerged as rather lengthy and deep. These discussions had a clear structure and progression, and it became obvious that they played a critical part in the success (or otherwise) of the final package of interventions. More specifically, analysis of these discussions indicated that they determined:

- The interventions that took place
- Whether these interventions were seen and implemented as a meaningful, coherent and practical programme of change
- The processes by which interventions were managed, supported and maintained
- The way in which the interventions were evaluated and, ultimately, their success
4.1 THE PROCESSES OF TRANSLATION

4.1.1 Feedback Activities

Feedback varied from case study to case study. However, a number of activities were common across the different studies. The first two centred on facilitating and stimulating the discussion of change:

- Feedback of risk assessment information to the organisation
- Discussion and further exploration of the feedback information

The subsequent activities centred around the planning of actions to tackle the issues that arose from the discussion of feedback information. These were:

- Designing possible interventions to reduce risk
- Prioritisation of feasible actions
- Designing the evaluation
- Marshalling of resources
- Planning the on-the-ground implementation

This section focuses on describing how the risk assessment results were fed back and discussed with organisations, and how this laid the groundwork for the design, implementation and evaluation of risk reduction activities (see Sections 5 & 6). It also presents a description of the ‘translation’ processes involved.

4.1.2 Managing Feedback to the Organisation

In order to inform and facilitate subsequent change, the information gained during the risk assessment exercise was fed back to the organisation.

In each of the case studies, feedback was focused initially on the Steering Group. The results of the risk assessment were first checked and informally discussed with the project champion, and then with other key stakeholders. This yielded useful information on how the results could be best positioned and best presented. It also allowed the project team to gauge initial reactions and identify outstanding issues. The information was then more formally presented to the Steering Group. This was usually a three-step process. First, the report was introduced to the Steering Group, discussed, and copies distributed for comment. Then those comments were gathered, considered and the Report amended if necessary. It was always made clear that it was the project team who would decide on the necessity and nature of any amendments to the report. Finally, the report was formally handed over to the Steering Group and the organisation.

It was considered crucial, in all the case studies, that feedback on the assessment should not be restricted to the Steering Group. Not only was this ethically important, but the promise of wider feedback was often a significant factor in securing employee ‘buy-in’ to the intervention design and risk reduction activities. Consequently, agreements were usually reached at the outset that a brief summary of the report would be fed back to the assessment group. In many cases, organisations greatly improved on this minimal position (see below).
Feedback to employees:

- Circulation of a summary of the assessment report (sometimes including the Steering Group’s response to the results) to the assessment group or to all employees
- Presentation of the assessment report to the assessment group or a meeting of all employees
- Coverage of the assessment exercise in the company newsletter or magazine
- Provision of a special publication (handout, memo, newsletter etc.) on the assessment project

A format emerged for the presentations and reports on the assessment information. This is described below. It had three basic elements.

The first part of the feedback focused on the description of the assessment exercise, placing it in the context of the overall risk management project (and re-iterating some of the key principles). This was also an opportunity to check on expectations and to re-market the overall project. The second part of the presentation focused on the key findings from the assessment. The final part briefly presented the recommendations. Rather than a set of prescriptive actions, recommendations centred on the problems that the organisation should discuss, and on the possible strategies for designing interventions. It began to explore the answer to the question: “What next?”. Generally, aids to planning and a schedule for discussions about risk reduction were also introduced at this stage.

Translation: Feedback format

- A ‘recap’ of the nature of the project and its justification
- A brief review of the risk assessment methodology and activities
- A description of the situation, work and working conditions of the assessment group (to indicate how ‘representative’ those returning questionnaires were of the assessment group as a whole)
- A profile of its ‘health’ (broadly defined), compared, where possible, to normative or comparative data without and within the organisation (see Section 3.7)
- An account of the likely risk factors related to working conditions and systems, and ‘at risk’ groups, with some indication of ‘priorities for discussion’ (see Section 3.7)
- A review of existing and relevant management control and employee support systems, both formal and informal
- A summary of the recommendations: “what next?”
4.2 IMPLEMENTING TRANSLATION PROCESSES

Prior to the actual research, models of risk management suggested that feedback of results had two simple objectives:

- To inform the Steering Group of the results of the risk assessment, and to stimulate discussion and exploration of the findings

- To determine, agree and justify the need (or otherwise) for reasonably practicable steps to reduce the risk to employees associated with the likely risk factors and hazards

Initially, it was expected that these twin objectives would be met fairly easily within one or two sessions, even allowing for a wide range of political and emotional reactions to the feedback that might slow down and distort the process. What happened in practice was that even two feedback sessions always proved inadequate to the task, somewhat irrespective of the time allowed for them. There were always requests for further meetings. This was largely due to three factors:

- The information load involved and the Steering Groups’ need for time and space to digest that information

- The emotional reaction to the information presented and the need to work through immediate ‘gut reactions’ and to decide on organisationally acceptable ‘scripts’ to describe the findings

- The political implications of the information presented within the organisation, and the need to consider these carefully

During the series of meetings that evolved, the discussion usually shifted away from the individual risk factors, initially considered one by one and in isolation - as with the items on a shopping list - to an exploration of the linkages between them. Eventually the linkages between the various risk factors and other stressors were used as the bases for discussing and planning action.

Discussing and exploring the linkages between the risk factors and other stressors in order to identify a smaller number of underlying factors led to the Steering Groups producing structured accounts of what was happening – acceptable scripts. These accounts represented interpretations of the risk assessment results within the framework of the Steering Groups’ organisational experience and expertise. It produced a more parsimonious model of ‘causation’. Often additional information was requested by the Steering Groups to support their models, and, where it was possible and ethical, this was offered by the project team. The structured accounts provided more manageable and economic foundations on which to build risk reduction programmes.

The translation phase illustrates the importance of the Steering Groups and the need for them to be composed of stakeholders with good organisational knowledge.

4.3 MEDICAL ANALOGY

A medical analogy (see Figure 12) proved useful in describing the translation processes. The argument is that the focus of discussion usually shifts away from the detailed and separate risk factors towards the discussion of possible underlying pathologies. The focus shifts away from individual symptoms of occupational and organisational ‘ill health’ (the risk factors) to the identification and understanding of such pathologies (the underlying processes linking the risk
factors). The underlying pathologies become the target of the intervention programme, and in this way, the maximum number of individual risk factors can be dealt with by the minimum number of organisational interventions. In terms of the medical analogy, this process is similar to the way in which a physician will attempt to identify (and subsequently treat) the underlying cause of a variety of presenting symptoms.

![Figure 12: The medical analogy]

### 4.3.1 Different Patterns of Response

Some organisations progressed faster than others towards actual risk reduction. Overall, there appeared to be a negative association between the speed with which the feedback data were discussed and interventions decided, on the one hand, and the likelihood that the organisation dealt with the underlying pathologies - as opposed to dealing with individual symptoms - on the other. In other words, the faster a Steering Group moved to intervene, the more likely it was to focus on the individual risk factors and treat each intervention as a separate issue, producing more of a rag-bag of disparate interventions than a coherent and meaningful risk reduction programme.

There were four problems with such a strategy - or lack of strategy:

- The strategy resulted in a wide variety of interventions aimed at a variety of risk factors that lacked coherence and meaning
- The strategy was therefore difficult to describe and to justify
- It was difficult to manage effectively - either as an organisational project or as an exercise in people or group management
- It did not offer the most effective vehicle for prevention – in terms of the medical analogy, the approach focused on treating the symptoms, rather than the underlying pathology.
4.3.2 Lessons from Elsewhere

Not surprisingly, during the translation process discussions focused on the nature of possible interventions and intervention strategies. At this point, most organisations appeared keen to draw on ‘best practice’ examples from other organisations. It was not uncommon for the Steering Group to ask the project team for information about what other organisations had tried and how they had proceeded. While examples from other organisations taking part in the overall research and development programme were discussed, the project team was careful not to breach confidentiality nor to present these as prescriptive solutions (see Sections 5 & 6). Rather, they were used to illustrate a number of aids to risk reduction planning (see Section 5). Reference was always made to the scientific literature and to the accumulating experience of the project team.

Sadly, there is not yet a coherent body of ‘good practice’ information easily available to organisations, although the European Agency for Safety and Health at Work (Bilbao) is collecting and evaluating the information that does exist for dissemination through the Internet. To date, this project offers the largest and most coherent collection of case studies on organisational interventions for work stress framed by a risk management approach.
SECTION 5: RISK REDUCTION

Section 5 of this Report focuses on the design, implementation and management of interventions to reduce risk that were necessary as a result of the assessment exercise. The evaluation of such interventions is dealt with in Section 6. This section is presented in three parts. The first concerns the design of the risk reduction programme and the possible intervention strategies that might be incorporated into that programme. The second part considers the planning and implementation of those interventions, and introduces several aids to planning. The final part looks at the monitoring and management of the risk reduction programme and the feedback of results to the organisation.

5.1 DESIGN

A risk reduction programme should logically begin as an exercise in work and organisational re-design but, in practice, will often need to involve the enhancement of employee support and the development of other occupational health and welfare services. It involves change with people at the heart of that process. Therefore, education and training are powerful tools.

This part of the Report attempts two things. First, it briefly discusses the nature of risk reduction programmes and offers a possible taxonomy. Second, it explores the planning of such interventions and other related processes.

5.1.1 A Taxonomy of Intervention Strategies

The scientific literature on risk reduction in relation to work stress is sparse. Exhaustive reviews of the published literature have failed to produce more than a handful of studies concerned with work or organisational re-design or closely related actions (e.g. Jackson, 1983; Israel et al., 1996). Of course, there are many more studies dealing with individual stress management, but few of them are methodologically sound (Cox, 1993; Parkes & Sparkes, 1998). Apart from these more academic reviews of stress management interventions (e.g., van der Hek & Plomp, 1997; Dollard & Winefield, 1996), much of what is published as advice is too prescriptive. It tends to be limited to didactic prescriptions and recommendations (e.g., Briner, 1997; Kompier et al., 1998), guidance on what amounts to ‘good management practice’ with some psychological content (e.g., International Federation, 1992, and various publications by NIOSH in the USA) or generic standard recipes for a healthier work environment (e.g. Landy, 1992; Locke, 1976). The European Commission’s 1996 ‘Guidance on Risk Assessment at Work’ gives cursory consideration to risk management in Section 5 under the heading ‘Actions as a result of risk assessment at work’. It offers only a generic flowchart of options to choose from depending on the results of the assessment. The scientific literature that is available has been discussed in more detail by the authors elsewhere (Cox, Griffiths and Rial-Gonzalez, 2000).

Despite this, taxonomies have been offered of organisational (and individual) interventions for work stress. Several have adopted a three-level model of prevention: primary, secondary, and tertiary. These models are often focused on the individual, not the organisation, and prevention is conceptualised as the avoidance of individual ill-health (so that treatment represents tertiary prevention). There have been two slightly different versions of this taxonomy advanced in the literature on stress management (see Cox, 1993). The first, the more traditional model, distinguishes between:
• Primary prevention as the redesign or re-engineering of work, work systems and technologies, and of work organisations

• Secondary prevention as employee training

• Tertiary prevention as treatment and the subsequent rehabilitation of employees

However, Cox (1993) offered a modified account which takes a more organisational perspective, effectively answering the question “what can the organisation do?”. This account makes two important changes to the traditional model:

• It redefines primary prevention in relation to contemporary stress theory to include employee training

• It refocuses secondary prevention on the organisation’s response to employee problems as they arise

Employee training is treated in this model as primary prevention on theoretical grounds. The basic stress equation (Cox, 1993) talks of a critical balance between the demands on people and their ability to cope taking into account needs and resource issues, as well as control and support factors. Reducing stress, so defined, might be achieved by either re-engineering organisational demands, control and support or by increasing the employee’s ability to cope (most obviously through training). Training is conceived of as enhancing task related knowledge and skills rather than involving exercises in unsubstantiated, individually focused therapies.

Secondary prevention is conceived in terms of an adequate and timely reaction involving management awareness and training, organisational culture, management and related referral systems, and the availability of appropriate and adequate resources.

5.1.2 Drawbacks of Taxonomies

The existence of such taxonomies might suggest that a particular stress-related problem has an obvious solution by way of a guaranteed and mechanically determined intervention. This has led to the vain hope that organisational interventions might be menu driven, rather like a particular drug being prescribed for a particular disease. If this approach were valid, and it is not, the informed organisation would use a diagnostic tool to identify its main problem and then, consulting the appropriate menu, determine the single intervention (treatment) that would solve that problem. This, of course, is not what happens in reality. Organisations are complex, and their wider environments turbulent. It is naïve to assume that such a menu driven approach would ever be appropriate.

5.1.3 Integrated Solutions to Complex Problems

In all of the case studies, packages of interventions emerged. They were driven as much by the conceptualisation of the underlying organisational pathologies as by the list of individual risk factors (see Section 4). The interventions were tailored to suit the situation of the assessment groups and their organisations. They were usually integrated to provide a meaningful and manageable package. Where this did not happen, interventions were deemed to be less successful.
5.1.4 A Balanced Approach

In all of the case studies, the emphasis was placed on primary and secondary prevention as defined by Cox (1993), and as required by the European and UK legislation. However, in most cases actions were also taken, or had already been taken, to provide enhanced support and welfare for troubled, worried or otherwise stressed employees.

For many reasons - humane, legal, ethical and commercial - it would have been difficult to argue only for primary or secondary prevention, forcing the exclusion of tertiary measures. As the project progressed, the notion of a balanced approach emerged in which the first consideration was prevention, but attention was also paid to the need for enhanced support and better welfare provision. It was made clear, however, that enhancing employee support alone is not recommended as an adequate risk reduction programme.

5.2 PLANNING AND IMPLEMENTATION

Often, in the case studies, the Steering Group felt that its task was complete when it had taken feedback from the assessment, worked through the translation process and determined the design of an intervention programme. This was not so. In reality, its planning activities had just begun. It had then carefully to consider identifying, marshalling and activating the resources required to support the intervention, its implementation and evaluation.

5.2.1 The Role of the Steering Group

The planning, implementation and evaluation of the intervention programme usually remained the responsibility of the original Steering Group. This ensured continuity. However, the Steering Group as originally constituted was not always the most appropriate or most empowered body to carry through the risk reduction programme. In several of the case studies, the Steering Group either changed its membership or, occasionally, delegated responsibility for the intervention to another body. The latter strategy did not usually work as well as the former.

Many of the key issues in planning and implementation were determined by the social and political processes that characterised the organisation. Progress was easier in those cases where the Steering Group had been constituted to include the main stakeholders than in those that had not. The Steering Group was able to act more effectively when it included not only employee representatives, but also:

- Those with the organisational power to decide and act on the outcomes of the assessment
- Those who would be involved in any intervention as managers, trades unionists or functional specialists (i.e., those who could support and maintain the interventions)
- Those who were able to command the necessary resources

While this was not always obvious to the Steering Groups at the outset, it often became so painfully so in some cases - during the translation and risk reduction phases.

5.2.2 Aids to Planning

Steering Groups often requested help in framing their discussions of likely interventions. In these situations, one or all of the following three 'planning aids' were offered: each represents a conceptual framework for thinking about the design and implementation of risk reduction programmes:
The classical stress equation, as exemplified by the work of Karasek & Theorell (1990), the Michigan School (French, Caplan & van Harrison, 1982), and Cox and his colleagues at Nottingham (Cox, 1993; Cox & Griffiths, 1995b), and presented in terms of a balance between demands and ability to cope considering the level of control and social support available.

Steering Groups often found it useful to analyse likely risk factors and the underlying organisational pathologies in terms of this equation and explore the different ways of re-establishing the essential balance (by re-engineering demands and control, through employee training, and through enhanced support).

A modification of Newman and Beehr’s (1979) three-dimensional stress management matrix. This considers [1] the target of any intervention (the individual, their group or the organisation), [2] the strategy used (prevention, timely reaction, or treatment and rehabilitation), and [3] the agency of change (the individual employee, their group, the organisation or external consultants / providers).

This matrix helped Steering Groups to organise their emerging strategies and understand the differences and similarities between the various aspects of those strategies. This, in turn, helped promote the integration and management of the different elements of their intervention programmes. Essentially, this matrix forces questions about “what are we trying to achieve?”, “at what level?”, “how?”, and “whose responsibility will it be?”.

The total organisation planning matrix is a three dimensional matrix that considers the time frame for all actions, the part of the organisation / person responsible for them, and the resources needed. Actions are named and conceptualised in terms of their objectives and mechanisms. Reference can be made back to the classical stress equation and to the Newman and Beehr (1979) matrix.

Finally, this total organisation planning matrix prompted more practical thinking; moving planning from a conceptual stage towards practical implementation.

5.3 LEVEL AND COSTS OF INTERVENTIONS

The interventions that emerged in the case studies were generally of three types:

- **Level 1**: Interventions that directly addressed the likely risk factors, individually or through an attack on the underlying organisational pathologies or strengthened the positive aspects of work

- **Level 2**: Actions that were built into on-going initiatives or that modified those initiatives

- **Level 3**: Information that changed existing ways of thinking about employee problems, and the design and management of work

Often a package of interventions was developed that involved both level 1 and 2 interventions and included both preventive and supportive actions (a balanced approach). Such packages were subject to formal evaluation. It was more difficult to evaluate level 3 changes.

The likely cost of any risk reduction exercise was often questioned in advance. In practice, the costs were not as great as was commonly anticipated. Many of the changes that were part of the final package of interventions were themselves relatively low cost, and many could be enacted
within existing budgets. In these cases, the risk assessment data had informed and focused existing activities such as organisational development and, in particular, management development and training. Only in a relatively small number of cases were completely new initiatives enacted that were outside existing budget allocations.

5.4 EVALUATION STRATEGY

It was stressed throughout the project that the evaluation of the risk reduction programme should be planned in parallel with the development of the programme itself. This was the case in all the case studies. The evaluations were based on the stated objectives of the programmes in question.

The evaluations were an exercise in applied science. The methodological issues surrounding evaluation are dealt with in the next section.

The evaluation strategy was based on four sources of information:

- An Intervention Inventory that assessed the extent and degree of penetration of the intervention actions within the target groups and areas. It measured employees’ knowledge of, and involvement in, those actions, and their reactions to them.

- A re-distribution of the appropriate parts of the assessment survey to those involved in or affected by the intervention programme and to comparison groups where possible.

- Interviews with samples of employees and stakeholders focused on the impact and perceived success of the intervention programme.

- A review of available organisational records spanning the period of the intervention programme.

5.4.1 Comparisons: Evaluating Organisational Penetration and Impact

In general, evaluation was based on the changes that occurred across the period of the intervention as a factor of its organisational penetration (see section 6). Where possible, the evaluation sought to compare groups or areas that were and were not involved in, or affected by, the intervention programme before and after the intervention. However, it was not often possible to establish or clearly identify such groups or areas. Therefore comparisons were made in terms of the extent to which the interventions penetrated the organisation – the groups and areas involved.

Several comparisons could be made as a result of determining (1) whether or not employees were aware of the interventions, (2) whether or not they were involved in them, or (3) whether or not employees perceived their jobs to be affected by them. These comparisons were arranged in a hierarchical structure:

- Employees who were aware of the interventions vs those who did not,

- Among those who were aware, those employees who were involved with the interventions vs those who were not,

- Among those who were involved, those employees who perceived their jobs to be affected by the interventions vs those who did not.
The amount of data available and their distribution across the potential groups determined which comparisons could be made. In several organisations, the data that the organisation routinely collected and recorded were not sufficient or well enough organised to be used in the evaluation. In nearly all case studies, informal and formal interviews were conducted.

5.5 MONITORING AND MANAGEMENT

In all the case studies, the Steering Groups monitored the progress of the intervention programme and its evaluation in much the same way as they monitored the risk assessment exercise. This was one of their key functions.

Because the risk reduction phase is concerned with change, it is both politically and emotionally sensitive. Both reactions and resistance to change, and the over-enthusiastic or inappropriate promotion of change, had to be monitored and managed. Steering Groups played an important role in smoothing the passage of the intervention programme, and the active involvement and support of the project champion was critical. In one of the case studies, the organisation appointed a small group of Change Managers to facilitate the intervention programme. These operated alongside the Steering Group in explaining and marketing the planned changes, reducing anxieties and rewarding compliance. This group made a noticeable and positive difference.

Monitoring progress is both a formal and an informal exercise, and it needs to exploit all available channels of communication, being alert to rumour and gossip, both of which can powerfully shape employee perceptions of and reactions to change.

5.6 PROCESS ISSUES

There are several important principles that must be honoured in the design and management of any risk reduction programme in order to increase the likelihood that it will prove effective. These are described below.

<table>
<thead>
<tr>
<th>Design and management of risk reduction programmes - Good practice principles:</th>
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<tr>
<td>• Gain visible and active support of key stakeholders and opinion formers, including senior management and trades unions</td>
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<td>• Explain the basis and rationale behind the change to employees and place it in its organisational context</td>
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<td>• Provide a realistic vision of what may be achieved</td>
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<td>• Involve employees in the change process recognising their expertise</td>
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<td>• Encourage employees to own the change process and develop their sense of control over it</td>
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<tr>
<td>• Inform, reassure and support employees during the change process, providing any necessary training at the appropriate time</td>
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<td>• Provide regular feedback on how well the change is progressing</td>
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These principles of good practice reflect the participative approach that characterised the entire project - risk assessment, translation and risk reduction. This was not simply an exercise in democracy at work. It is well established that one component driving the experience of work stress is the feeling of not being in control (cf. Cox, 1993). Participation should reduce such feelings, and the method itself should contribute to an improvement in relation to the experience of work stress.

An important part of the process of participation is to educate the employees involved in relation to the planned change, and to offer some vision of what is to be achieved. This vision must reflect the objectives of the intervention programme. The evaluation of the programme provides information on whether or not the vision is being achieved. This information should be fed back to the Steering Group and the employees both during the change process and at the end of the formal evaluation.

5.7 FINAL FEEDBACK TO THE ORGANISATION

The information gained from the evaluation of the intervention programme was fed back to the organisation. As with earlier feedback, it was focused on the Steering Group.

In the case studies, the final feedback process mirrored that for the risk assessment exercise. Results were first checked and informally discussed with the project champion, and then with other key stakeholders. They were then formally presented to and discussed with the Steering Group. The three-step process described earlier was used in the majority of cases. In many cases, further presentations of the overall project were requested, often as a prelude to discussing further work. This work was usually an extension of the overall project to other parts of the organisation, the training of the organisation's staff in the use of the method, or an invitation to continue dealing with specific problems.

It was felt important in all the case studies that feedback on the effectiveness of the intervention programme should not be restricted to the Steering Group. Consequently, agreements were reached, in most cases, that at least an executive summary of the final report would be fed back to the assessment group. Again, in many cases, organisations greatly improved on this.

Feedback, Reports and Case Studies

All participating organisations received detailed reports on their own projects. With the permission of the organisations, six projects have been written up and included in this Report. All the case studies were reported to and discussed with the Health and Safety Executive during the progress of the project. Scientific papers are being published on various aspects of this research and development work.
SECTION 6: EVALUATION AND GENERALISATION

Section 6 of this Report focuses on the methodological issues that surround the evaluation of risk reduction programmes. It reflects in part the arguments between experimental and applied scientists, and between the purist and the pragmatist. Together these arguments have been referred to as the 'Science Wars' (Sardar, 2000). This section is important as it provides the context within which the quality of the evidence provided by this project, and by risk management projects in general, will be judged. It is presented in two parts. The first deals with the design and analysis of evaluation studies in field situations, and addresses the debate over their value. The second part deals with the issue of generalisation. Essentially, it asks in what ways can a very context dependent method provide general lessons.

6.1 SCIENCE OF EVALUATION

The science of evaluation needs to be adaptable. This is because the exact form of any evaluation will be affected by factors such as:

- The nature of the action or situation being evaluated
- The context in which the action or situation occurs and is evaluated
- The use to which that evaluation will be put

In the artificial world of the laboratory where perfect control can be exercised by the scientists involved, an adequate evaluation of a manipulation or intervention equates to the practice of the experimental method. However, in most situations outside the laboratory the necessary level of control is neither practically, nor ethically, possible. In such cases, the methodology of evaluation can only approximate to the experimental method (quasi-experimentation) and will often fail to provide the crucial test of causality sought by most 'pure' scientists.

A dilemma immediately arises: if the ideal is not possible, is it worth accepting the next best thing? To many pure scientists, isolated from the real world pressures to act, the answer can be “NO”. To the applied scientist, the ideal is a goal to be aimed for, not a cross on which potentially useful data should be ‘crucified’. All information that may promote our ability to solve pressing problems has to be collected and considered as carefully as possible in its social and organisational contexts. The real challenge within the case studies was to adapt and create evaluation methodologies that gave useful information as to the effectiveness of the various interventions and that facilitated further progress.

Cook and Campbell (1979) have discussed the science of quasi experimentation – experimentation where laboratory levels of control are not possible– in some depth in their seminal book of that name. There are several characteristics of quasi-experimentation that are worth noting in relation to the design of evaluation studies in real world situations. These are discussed below.

Essentially, the whole design issue is an exercise in creative logic; the goal being the ability to draw ‘good enough’ conclusions about the effectiveness of imposed (or naturally occurring) change against a turbulent organisational background. ‘Good enough’ conclusions, as their name implies, are not perfect statements of causal relationships: they are suggestions, of varying strength and generalisability, about associations between actions and outcomes. They often include some degree of expert judgement, and this must be honestly and conservatively given. Those that object to the inclusion of this type of evidence in an evaluation study must
think carefully of their acceptance of similar processes when they consult their general
practitioner with regard to their health or any number of other experts whose judgement is
relies upon to make decisions in everyday life. Good enough conclusions may also be context
dependent, and recognition of this fact places them squarely in the realm of post-normal science
(Sardar, 2000).

6.2 DESIGNS AND MEASURES

Evaluation designs must involve sensible comparisons that bear on the actions or events being
evaluated and on the context for those actions and evaluations. Multiple and structured
comparisons prove more powerful in the generation of 'good enough' conclusions than single
comparisons.

Evaluations and measures are of two types. They can be:

- Process based (what and how things happened and issues of compliance)
- Outcome based (what the result was; the difference that was made)

A consideration of the relative value of these two types of measure has to take into
consideration the design of the study in relation to the issue of comparisons (see above).

Single outcome-based measures taken after an action or event offer little information of value
towards a 'good enough' conclusion. Slightly more information is offered in this sort of
situation by 'process-based' measures. Even so, their value is limited. Outcome-based measures
taken before and after an action or event offer slightly more information, especially about
change, and their value may be enhanced if they are combined with process-based measures.
Better still is the bringing together of before-after comparisons with those among groups that
are more or less affected by the actions or events. Here the organisational penetration of the
intervention may be treated as an independent variable or co-variate. As described earlier in
section 5.4, in the case studies organisational penetration was assessed hierarchically allowing
for three meaningful sets of comparisons: first, according to the level of awareness, second,
according to the level of involvement, and, third, according to the degree to which the job was
affected. The lowest level of penetration was 'not aware' while the highest level of penetration
was 'aware, involved and job affected'.

An important point here is that added value may be achieved towards a 'good enough'
conclusion from sensibly combining different types of measure and by not focusing entirely on
outcome-based measures.

6.3 SAMPLES AND POPULATIONS

It must be made clear whether the evaluation is based on a sample drawn from a larger
population or whether it is based on a population in its entirety. The explicit definition of all
samples and populations is important. These issues have implications for the statistics
employed, how the results are interpreted, and how the results are generalised (see Section 6.4).

Much of experimental science is based on sampling from a larger population so that the study is
manageable, and the method of sampling chosen is such that the results of the study-on-a-
sample might be generalised to the larger population. This strategy is often focused on macro
groups—if not people-in-general—on the assumption that there are fundamental and somewhat
simple rules of behaviour that can be applied at a high level of generality across all situations. This is a very pervasive, but erroneous, assumption within the psychological sciences.

There are two common problems with this approach. First, it is likely, from the available evidence, that human behaviour is context dependent (driven by any number of factors that vary across specific situations) and complex. Consequently, simple fundamental rules either do not exist, or will be so simple as to be useless in predicting and managing real world situations. It is clear from studies in chaos and complexity that even if simple rules of behaviour can be sustained, their combination usually produces situations that are unpredictable. Second, in many experiments insufficient attention is paid to sampling issues and, as a result, many of the generalisations that are made are questionable and may falsely inform the assumption of simple rules of behaviour.

In contrast to laboratory-based science, field (applied) science is more concerned with particular situations and specific groups and problems rather than with people-in-general and simple rules of behaviour. This influences the nature of applied studies with regard to samples, populations and the choice of sampling strategy. It also influences the choice of statistical tests, the application of these tests and the interpretation of the results gained. It constrains generalisation, by definition, but this is not a prime issue for many applied situations.

The limitations of the design used must be carefully considered. The threats to causal inference must be identified and understood in relation to the use of statistics, the formulation of conclusions, the caveats placed on those conclusions and the extent to which they might be generalised.

6.4 GENERALISATION

The current project is heavily contextualised in terms of its objectives and its deliverables. However, the issue of generalisability has been considered (below) at three levels:

- Individual case study results
- The generalisation of the data from these case studies
- The transferability of the framework and processes involved

6.4.1 Individual Case Studies

The project has examined the success, or otherwise, of both risk assessments and subsequent interventions across many case studies. The results have been presented separately, and useful information can be drawn from each study (see Sections 9 and 10).

6.4.2 The Generalisation of Case Study Data

Although the results from the case studies are context dependent (valid within the study population and its organisational setting), they can also be generalised. Generalisation of the risk assessment data may occur at three levels (see also Section 3.8.2):

- Comparison of basic data relating to hazards and health 'outcomes'
- Comparison of likely risk factors (across companies and sectors)
• The grouping of the hazard data by the categories suggested in Cox (1993), or by factor analysis or similar techniques, to produce a higher level of profiling

Further, it may be possible formally to generalise results using statistical techniques such as meta-analysis. Thus, an overall commentary will provide an outline of the major risk factors identified in the risk assessments for work stress.

Initial findings suggest, for example, that common risks factors include those not very strongly emphasised in the literature on occupational health (e.g., poor communication with senior management, lack of adequate consultation processes, intimidation and harassment, inadequacy of feedback and appraisal systems). This is one advantage of using a context-based, tailored approach, where assessment instruments are designed for, and in consultation with, each organisation, rather than using imposed ‘off the shelf’ packages (see Section 6.4.3).

Although the results of each case study intervention are context dependent and valid within the specific work group and its organisational setting, general lessons can be learnt. What can be provided is a commentary on the general feasibility of various types of intervention, evidence that they work, and an outline of the nature and breadth of possible interventions.

6.4.3 Transferability of the Framework and Processes

As part of the requirement to undertake risk assessments and evaluate interventions, the Institute has developed a practicable framework and supporting processes and instruments (technology). The tailored assessment has been found to be the strength of this approach by all of the organisations involved. They have, by and large, rejected the alternative approach based on the imposition of standardised questionnaires, usually at a distance, which cannot deliver the level of detail required to inform the sensible development of a subsequent risk reduction phase. For much the same reasons, they have also questioned the usefulness of addressing the whole organisation at once and as if a single homogenous entity. There is a growing dissatisfaction with these alternative approaches that, in any case, are not always sympathetic to the spirit of the recommended consultation processes.

SECTION 7: LEARNING POINTS

This section of Part I of the Report provides a commentary on some of the main process learning points that arose during the development work and in the case studies. Others are discussed in more detail in the six case studies presented in Part II of the Report (Sections 9 and 10).

7.1 PROJECT CHAMPIONS: KEY PLAYERS

In all six case studies, the project champion was either an occupational health physician or a health and safety manager. It became clear that the risk management approach appealed more to these groups than it did to human resource or personnel managers. All the project champions were enthusiastic and supportive of the risk management approach. Their dedication to and day-to-day involvement in the projects proved crucial, particularly in providing a reliable contact point within the organisation and in ensuring that the necessary procedures were properly carried out.

Despite the enthusiasm shown by project champions it was necessary to ensure that they were fully briefed about the risk management approach, its logic, process and procedures. It was also important to ensure that their expectations were consistent with those of the project team.

7.2 SENIOR MANAGERS: SUPPORT AND SHARED UNDERSTANDING

It was always necessary to obtain the full understanding and support of senior managers. Their support had to be secured at the start of the project and made both visible and tangible.

Usually, the support of senior managers was gained with the help of the project champion. The project began with a series of formal presentations by the project team at which some, or all, senior managers were present. These presentations were designed to explain and sell the project: a number of different arguments were developed to persuade senior managers to buy into this research and development work (see Box below). Establishing the link between good health and good business was important.

Senior managers were encouraged to raise any concerns and discuss expectations with the project team so that their questions could be answered. It was important, at this stage, that their expectations were realistically shaped and, on occasions, constrained.

7.3 'TERMS AND CONDITIONS' DOCUMENT

The project team saw the need to formalise the process of agreeing the project with the organisation. When senior management had bought into the project, and it was clear that it would proceed, the organisation was asked to sign up to a 'Terms and Conditions' document. Although this had no legal status, the discussion of its content and the act of signing ensured that the organisation and the project team were working within the same framework. In particular it ensured that senior managers were committed to act upon the results of the risk assessment, and to move into designing and implementing the risk reduction programme.
Arguments developed for selling the risk assessment to senior management:

- Improving the health and satisfaction of the organisation's employees (the *humane* sell)
- Meeting legal requirements to assess all risks to employee health and helping to defend against future litigation (the *legal* sell)
- Selling 'good health is good business' at the individual level: promoting employee health to improve their availability for work and the quality of their work
- Selling 'good health is good business' at the organisational level: improving employee health to reduce sickness absence, insurance costs, and to improve company image
- Selling 'good management practice': conducting a risk assessment to provide good management information for organisational and management development

7.4 STEERING GROUPS

Ideally, the Steering Groups should involve or represent all key stakeholders, including senior and local managers, union representatives and members of the assessment group (see Section 3.7.1). The Steering Group should be well balanced and remain small enough to be an effective working group. This was not always achieved in practice. Discussions over the composition of the Steering Group often exposed the internal politics of the organisation, and, on several occasions, it proved challenging to the project team to ensure that the group was well balanced. Failure to achieve a reasonable composition for the Steering Group always threatened the credibility and perceived independence of the assessment exercise, and thus the success of the overall project.

7.5 CHOOSING THE GROUP TO BE ASSESSED

Steering Groups often had clear views about the groups that should be assessed, usually because they were widely held within the organisation to be 'at risk' from work stress. The project team's task was often to challenge these ideas and to ask for evidence to support commonly held views about being 'at risk'.

Two key factors in determining the success of an assessment proved to be:

- The homogeneity of the assessment group and of their geographical location
- The resources that were available to support the assessment both at organisational and group-levels
There were often local political issues underpinning the choice of the assessment group. For example, one of the assembly operations assessed in a company in the north of England was part of a larger site that included another somewhat similar operation. From informal discussions with the project champion, it became apparent that the former was perceived by its employees as the ‘poor relation’ to the latter and with some justification. The latter was based in more pleasant and better equipped surroundings. One of the reasons for choosing the former operation for the assessment was to demonstrate the organisation’s concern for its workforce.

7.6 MARKETING THE PROJECT

The way in which the project was marketed within the organisation, and, in particular, to the assessment groups in question, proved crucial to its success.

It became custom and practice to work with the project champion and the Steering Group to identify the full range of media and methods available for explaining and selling the project. It always proved important to decide which would be the most suitable for the different groups involved, and which would give the project the highest and most appropriate profile. The six case studies presented at the end of this Report adopted quite different marketing methods.

One case study involved a presentation by the project team on aims and objectives to all members of the assessment sample in an interactive session. This was supported by the distribution of a handout. This was the most suitable method where members of the assessment group were sceptical about the aims of the project and mistrusting of their management. It allowed the project team the opportunity directly and publicly to address the group’s concerns. In other case studies, the project was marketed by means of:

- Briefing notes sent by internal mail
- Memos sent via electronic mail
- Presentations to health and safety representatives to be ‘passed down’ to the assessment groups
- Articles in the organisations newsletter (or similar)

The content of the marketing material – the descriptions offered and the arguments used - was always carefully considered. Besides offering an honest and non-threatening account of the assessment exercise, material had to be user-friendly and accessible and had to guarantee confidentiality.

An important lesson learnt from one of the case studies was that the marketing material should be addressed directly to each employee in the assessment group and not to a job title. Not only did this personalise the approach and encourage a sense of involvement, but it occasionally minimised errors and gaps in communication. In the case study mentioned above, the structure of the shift pattern used by the organisation meant that while several people shared a job title, only one received the memo marketing the project. There was no overlap in the changeover between shifts and information on the project was not passed on.

7.7 PROJECT NAMING

The amount of time spent discussing the naming of the project and its subsequent importance to the success of the project was surprising. Although most organisations were attracted to the
project because it offered knowledge of how to manage work stress, most then proved nervous of labelling it in that way. Three reasons were offered:

- Labelling the initiative as a ‘stress’ project would suggest an individual and clinical approach to most employees rather than a focus on work and working conditions

- Stress was too political and emotional an issue

- The organisation (or assessment group) would be labelled as ‘stressed’ whatever the outcome and this sort of publicity could be damaging both internally and externally

In most cases, the projects were labelled in a way that suggested that they were associated with routine health and safety activities or other existing and non-controversial projects. Often an informative but neutral title was used. ‘Work and Well-being’ was a frequent choice.

7.8 BARRIERS AND FACILITATORS

Risk management has to work against a backdrop of change and development. Barriers to progress can arise from insufficient resources, or a failure to empower the project sufficiently. Other less obvious underlying factors can hamper effective risk management. Many are bipolar: the flip side of the argument being that these factors, in a more favourable state, can facilitate risk management.

These barriers and facilitators have the potential to impact upon a number of stages of the risk management process. However, their impact was felt most during intervention design and subsequent implementation. The project team encountered a number of such factors. Some of the most influential and important included:

- Level of anxiety about the future of the organisation or of the specific work group

- Geographical spread of the assessment group and the effectiveness of the communication links across that group

- Changes in management personnel, structure, or ‘culture’ particularly relating to the project champion and Steering Group

- Changes in business goals and strategy

- Re-structuring of the organisation or its activities

- Changes in staffing levels

- Variation in local circumstances and working conditions affecting the assessment group

- Opportunities for natural or deliberate variation in the implementation of risk reduction across the assessment group

- Amount of management driven change occurring separately from the risk management activities

Two other important factors also impact upon the evaluation of the interventions. These are:
• Employees’ awareness of risk reduction (including their involvement in risk reduction)

• Employees’ reactions to the interventions

The importance of these two factors was discussed in Section 5.4.

7.9 COMPLETION

Despite their declared intentions to complete the whole risk management project, some organisations were reluctant to engage in the process of change necessary for effective risk reduction. Fear of costs or political turbulence dominated the thinking of some members of Steering Groups. Interestingly, the economic fears were more easily overcome than the political. Most risk reduction exercises were not very costly. Political fears were often overcome by senior management taking ownership of the programme or by pressure from the trades unions.

At a more operational level, insufficient resources were often allocated by organisations to support the evaluation exercise, and that exercise was not sufficiently empowered within the organisation, again unless senior management had taken ownership. Both of these shortcomings can contribute to a failure effectively to evaluate the risk reduction programme.

There has been much interest expressed, across Europe and in the USA, in the process and results of this research project. We hope that this work will, when appropriately disseminated in academic and professional conferences and publications, contribute to the further development of knowledge and theory in this important area.

We do hope that stress management will be increasingly subsumed under ‘good management’ practice and organisational development principles (Landsbergis and Vivona-Vaughan, 1995). Stress management is good management. Good management is stress management.
SECTION 8: REFERENCES


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