

The perceptions of line and senior managers in relation to occupational health issues

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Perceptions of line and senior managers in relation to their role in managing workplace injury and illness were investigated with a large UK manufacturing company. The significance of this research to occupational health practitioners lies in the fact that increased understanding of the perceptions of senior and line managers is fundamental to the success of occupational safety and health programmes. Documentary analysis and semi-structured interviews were used to assess perceptions. The findings showed that the managers had a much sounder understanding of their role in injury prevention than that related to illness prevention. The way in which information relating to injury and illness data is presented to managers to aid decision making was found likely to be a fruitful area for further research.

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INTRODUCTION

Research has shown¹ that latent failures in working organizations are of fundamental importance in the causation of occupational injury. They are also likely to play as important a role in the causation of occupational illness. Latent failures are defined as those actions and decisions which are remote from the time and place of the incident. They are often decisions taken by line and senior managers relating to work structure and organization.

Examples of the contribution of latent failures to injuries caused by work are, sadly, many. They can be found in the reports of major incidents such as the sinking of the *Herald of Free Enterprise*² and the fire at King's Cross Underground Station,³ both the result of decisions taken by line and senior managers some time prior to the accidents. Reason⁴ has commented that the potential for spawning latent failures is greatest at the higher levels of management within an organization. Much responsibility is, therefore, placed on line and senior managers to reduce occupational illness and injury. This responsibility is allocated both by the organizations they work for and by legislation.

The ability of managers to take effective action and make effective decisions in managing occupational safety and health (OSH) issues is dependant on a number of interrelated factors, both personal and environmental.⁵ Personal factors include their own knowledge, skills and understanding, whilst environmental factors relate, *inter alia*, to the relative priorities of other managerial issues within their employing organization. However, little research has attempted to improve our understanding of the shapers of managers' perceptions within the personal and environmental factors referred to above. This is in clear contrast to the profusion of research relating to other organizational issues such as managing individuals⁶ or innovation in production and marketing techniques,⁷ for example.

There is some evidence^{8,9} that safety issues are not perceived as being controllable by managers in the same way as other issues within their sphere of responsibility. The precise reasons for this are not clear, but may partly be due to the phenomenon Groeneweg⁹ describes as an attribution effect, i.e. the tendency for managers to perceive the power to prevent accidents as resting with the workforce, the solution being to persuade the workforce to behave more 'safely'.

This paper gives the findings of Phase 1 of a research programme which is attempting to investigate shapers of management perceptions in relation to their responsibilities in managing OSH. The programme is being

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carried out in the form of a series of case studies with a major UK manufacturing company. The company is an established manufacturer operating several sites in the UK which range from engineering to chemicals manufacture.

The significance of this research to occupational health practitioners lies in the fact that increased understanding of the perceptions of senior and line managers is fundamental to the success of occupational safety and health programmes. Occupational physicians and occupational safety and health practitioners cannot operate isolated from these considerations. The 'technical' elements of medical or engineering solutions must be supported by systems of work which are effectively managed for the reasons discussed above.

AIMS

The aims of the whole study are as follows:

Phase 1: to investigate the perceptions of line and senior managers in the organization under study in relation to their OSH role, thereby to begin to clarify the shapers of perception which may result in decisions leading to latent failures.

Phase 2: to design and trial an intervention strategy which helps the organization to address the main findings of Phase 1.

METHOD

The following methodology applies to Phase 1, the subject of this paper. A mixture of document analysis¹⁰ and semi-structured, focused interview techniques¹¹ were used.

Document analysis

The document analysis was of two types: (1) injury report analysis and (2) sickness absence analysis.

Injury reports. A random sample of 20% ($n=316$) of all company injury reports for the period January 1992–September 1993 inclusive was taken from the company's major UK sites. Injury reports pass through a prescribed route within the organization once initiated. This route always includes the immediate line manager of the injured party. The managers are required to comment on the incident and give recommendations regarding prevention strategies. The more severe the injury, the further up the hierarchy the document is passed for comment. In the case of fatalities or other severe injuries, an internal board of enquiry is established. However, these are relatively rare events: 63% ($n=199$) of the sample reports relate to minor abrasions, contusions and lacerations.

The injury reports were analyzed to discover the

written responses of line managers in relation to preventive measures. The responses were categorized by type, following the failure classification developed by Reason.⁴ This classification identifies failures in planned events which lead to accidental injury as being 'active' or 'latent'. Active failures are those which immediately lead to the injury and are commonly associated with the behaviour of operators. Latent failures, as discussed above, are those which are dormant in the work system and are the result of actions and decisions, usually of managers, which are implemented distant from the accident site in both time and space.

Sickness absence analysis. The researchers were keen to gauge the perceptions of managers relating to broad occupational health issues as well as the more narrow topic of injury prevention. However, access to occupational health data proved much more difficult to secure than that relating to occupational injury. Occupational health provision varies at the company's sites and few data were available. Therefore, sickness absence data were crudely analyzed in order to produce a vehicle for discussions on occupational health with the managers during the interview phase—admittedly a less than ideal method. However, the analysis and subsequent discussion did reveal some worthwhile issues.

The absence records of three representative sites (one engineering, one chemical production, one administration) for the period January 1992–October 1993 inclusive were analyzed using a statistical spreadsheet. This analysis was somewhat superficial in nature but at least enabled a general picture of sickness absence to be obtained at those sites. A fundamental part of sickness absence analysis is the reclassification of the many and various reported symptoms to allow analysis. The classifications used here are based upon the Registrar General's occupational mortality classifications, with some alterations and additions to take account of conditions which seem to occur more frequently in the organization under study. The resulting classifications were: headaches; ear conditions; eye conditions; musculoskeletal conditions; skin conditions; circulatory conditions; respiratory conditions; gastric conditions; uro-genitary conditions; injuries; stress and anxiety; ill-defined conditions; and infectious diseases.

Interviews

The semi-structured, focused interviews were carried out with a sample ($n=63$) of managers from line and senior levels at the company's eight major sites. The sample was structured to allow representation from the main groupings in both administration and operations departments. Each of the interviews lasted approximately 1–1.5 hours and addressed the following points:

- The interviewees' opinions of what causes accidental injury and what constitutes a typical accident in their organization
- Their perception of their own role in preventing occupational injury
- Their views on how health may be affected by occupation
- Their perception of their own role in reducing occupational ill health

The main issues arising from responses to these questions are discussed below.

RESULTS AND DISCUSSION

Documentary analysis

Injury reports. The responses of the managers on the injury reports were analyzed to determine where these responses fitted in the categories Active Failure, Active/Latent Failure and Latent Failure. This analysis was carried out to provide evidence of managerial perceptions relating to the causes of accidental injury and their actions in relation to possible preventive measures. These findings could then be compared with the responses to the interview questions to demonstrate the extent of managerial understanding of accident causation. Below are examples of the responses found during the analysis which illustrate typical responses in each of the three groupings. During the analysis it became clear that there was not an unbroken line between active and latent failures and that some of the responses contained elements of both types. It was therefore necessary to have the active/latent category.

Active failures alone

For example:

- *Person failure:* These responses showed the manager to perceive an element of culpability on behalf of the injured party. There was a focus on personal awareness, e.g. 'the person should be more careful' or 'the person should pay more attention'.
- *Safety awareness training:* These responses were typified by general, undirected comments such as 'this person requires more training in safety awareness'.
- *Removal of immediate obstacle:* In these responses there was no questioning as to why the object may have been there in the first place or how a future recurrence may be avoided.

Active failures with some consideration given to latent failures

For example:

- *Job training or instruction:* Responses emphasized the need for specific task training or retraining.
- *Man-machine mismatch:* These comments did highlight possible man-machine mismatches, but tended to concentrate upon the man rather than the machine.

Latent failures alone

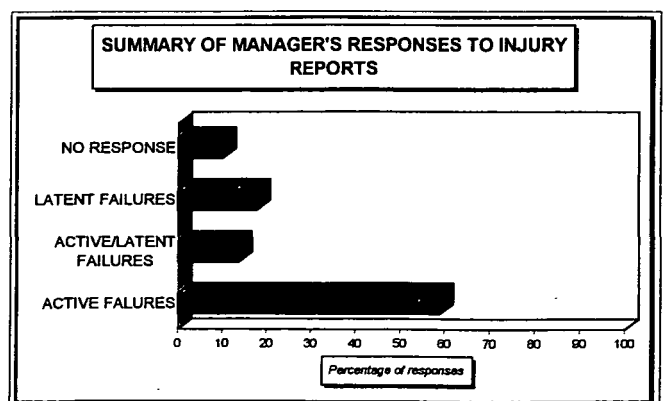
For example:

- *Alternative design, method or procedure:* These responses gave consideration to changes in systems or procedures.
- *Organizational failure:* Comments here related to, for example, conflicting goals or work overload.
- *Investigation or review of work systems:* Comments in this category recommended further reviews of work systems to eliminate latent failures, although the term 'latent failures' was not actually used.

The graph at Figure 1 shows the relative split of responses in the three major categories. The split between categories is 58% active failures, 15% active/latent failures, 17% latent failures and 10% no response. This shows an emphasis upon citing operator failure as being the major contributor to accident causation. However, as discussed above, the majority of reports relate to minor injuries which are the result of what may be classed as 'everyday activities'. Examples of these are a bruised ankle from falling off the edge of a kerb or a cut finger from picking up a sharp piece of metal. Admittedly it is sometimes difficult to see how managers might make comments which relate to latent failures when faced with injury reports of this type. It is far more likely that they will exhort the injured persons in these examples to take more care when walking along the pavement or to ensure that protective gloves are always worn.

The findings of this analysis do point up the importance of the way information is collected and how it

Figure 1.

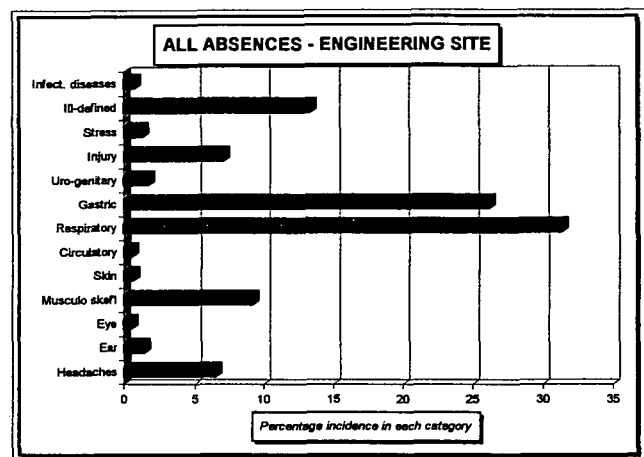


is presented in shaping perceptions. Part of the day-to-day information managers receive relating to safety issues in this organization is in the form of injury reports. This is likely to be true for a great many UK firms. Managers' perceptions of the likelihood of serious injuries occurring may be influenced by receiving much information relating to minor injuries. The *potential* for serious injury to occur may then appear correspondingly lower than it actually is. The organization studied here carries out a range of checks and inspections of safety issues such as housekeeping, guarding of machinery and other similar items which are also fed back to the line managers. However, these inspections do not address more latent issues such as communication failures or breakdowns in safety systems. Another important feature of this organization's methods of measuring OSH performance is the importance attached to the counting of lost time injuries. Lost time accident incidence rates are used as measures of Company and site safety performance. The effect these types of information have on managers' perceptions, and even on their behaviour, is a fruitful area for further research.

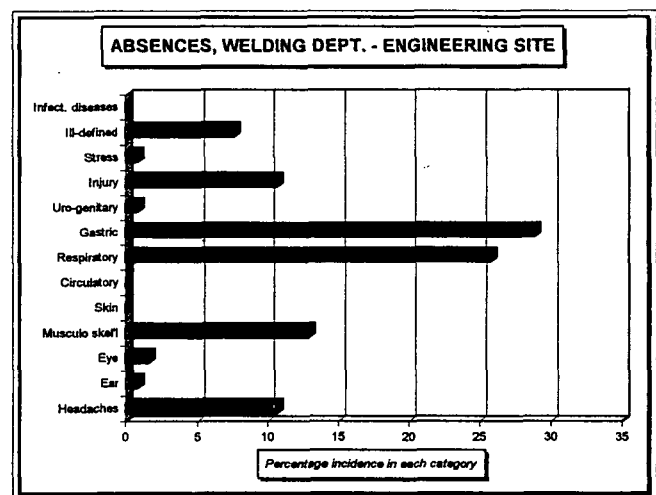
Sickness absence analysis. The authors understand the difficulties in drawing conclusions from data such as sickness absence.¹² Self-reported and self-diagnosed illness is liable to inaccuracies from a number of sources. Amongst these are: (1) the obscuring of one illness by reporting other symptoms, e.g. reporting gastric upset when the real reason for absence may be stress; (2) misdiagnosis; (3) misrepresentation, i.e. citing sickness as the reason for absence when it is due to some other cause; (4) low motivation to attend work, e.g. due to a boring or repetitive job.

Absences lasting more than seven days require a medical practitioner's certificate (Med 3) which contains a diagnosis of the illness. Whilst these are much more likely to be accurate than self-diagnosed spells of illness, the absence may still be liable to be affected by some of the points listed above. Despite all these difficulties and more, it remains that sickness absence records do provide a body of data which partly relate to the illnesses suffered by the workforce. Whilst no hard and fast conclusions may be drawn from the analysis carried out in this study, the picture which these data present does show some groupings and variations by department or occupation type which are worthy of further investigation. An example of this can be seen in Figure 2. Graph A shows the results of the analysis for the engineering site overall. Graph B shows the results for the welding department. The welding department graph shows a variation in some of the causes of absence compared to the site as a whole. In particular, the welding department's contribution to all site absences due to headaches, musculoskeletal conditions, respiratory conditions (including colds and 'flu') and injuries were elevated as shown. The likely causes of these variations are manifold and impossible to assign from the data shown

Figure 2.



GRAPH A



GRAPH B

here. However, the researchers were interested to see if presenting these graphs to managers might raise questions relating to health.

When these graphs were shown to managers at the site in question, one line manager began to recall complaints from the welders relating to poor levels of lighting, amongst other things, which he considered may be worthy of investigation in relation to the number of absences due to headaches. However, company senior managers who were shown the results of the analysis were skeptical of its meaning in health terms. The company is currently involved in an absence reduction programme, which has proved effective in reducing lost time. This programme includes a counselling system which requires all persons having time off due to sickness to be interviewed by their manager on their return. The senior managers shown the sickness absence results tended to concentrate upon the time loss element rather than any health information which the data might contain. This may be conditioned by the current absence reduction drive.

Interviews. When asked questions regarding their opinions of what constituted a typical accident in their organization, all respondents felt that the typical accident was one which resulted in minor injury. When asked their opinions of what causes accidents, 75% of first responses cited carelessness and complacency in the injured party as being the major cause. However, 25% of first responses did acknowledge the impact of work systems within the organization and the inherent risks of the work being carried out as fundamental causes. This proportional split in views corresponds reasonably well with the findings of the accident report analysis discussed earlier.

The interviewees were also asked their opinions regarding 'accident proneness' i.e. the relative likelihood of individuals to have accidents. Seventy-five per cent of respondents believed that some people are more prone to have accidents than others. Of these respondents, 67% of first responses relating to cause of the phenomenon cited personal characteristics such as IQ, level of educational attainment and innate personality, although 28% of total responses did cite the varying exposures to risk and/or the carrying out of boring or repetitive tasks as the greatest influences on accident tendency. Work carried out by researchers in the field of accident proneness¹³ has, in fact, failed to identify personal factors which are stable and common to 'accident prone' people, although the tendency for some people to have more accidents than others has been established.

When asked about how they viewed their own role in injury prevention, the responses during the discussions broke down into seven categories, all respondents citing a mix of the following:

- Identifying hazards, which included such activities as hazard spotting, carrying out inspections and audits and recording accidents and near misses.
- Controlling plant safety, which included ensuring PPE was available, guards provided for equipment where necessary, correct design of processes, layout of plant and systems working correctly.
- Communication with the workforce, which included responding to requests, acting as a sounding board, communicating with individuals, organizing local safety committees and carrying out safety audits with safety representatives.
- Training/education, which included giving presentations, cascade training, promoting good practice and giving advice.
- Controlling people, which included supervision, monitoring, control and counselling of employees, and monitoring and reducing lost time accidents.
- Demonstrating commitment which included being a figurehead, demonstrating involvement, promoting safety, promoting awareness and implementing the company's policy.

- Controlling the working environment, including eliminating problems at source.

This list reflects the issues generally held to be central to managing the practical elements of managing OSH issues. One notable feature of the responses to the interview questions was the clear commitment to safety issues displayed by the managers. They were not asked the question directly, but many respondents took the opportunity to say they were committed to reducing accidental injury during the discussions. Of course, interviewer interference levels are likely to be high when questions relate to an emotive topic such as personal injury. It is highly unlikely that anyone would admit to a low level of commitment under these circumstances. However, the documentary analysis phase may support the tenet of commitment, partly through the high response rate on the injury report forms (90%). Even though most of the injuries were minor and related to everyday activities, generally the reports were diligently completed by the relevant managers.

Discussions around the subject of occupational health, as opposed to injury, elicited the widest variation in comments. Many respondents did not have any real views on the links between occupation and ill health and had made no connection between the two in their minds. Of those who did identify links, 33% of first responses related to back strains and 22% of first responses related to stress. Other conditions cited were dermatitis, general muscle strains and possible respiratory effects. Twenty per cent of respondents felt that >5% of their site's sickness absence was due to occupational ill health. The remaining 80% saw <5% or none of the sickness absence being related to working conditions. Those respondents who cited stress and related anxiety conditions as being particularly important work-related health effects, seemed to form their views from experience of significant levels of stress throughout the organization at all levels of responsibility. Some respondents did feel that middle and senior managers were more liable to be affected by stress, but all respondents who discussed stress felt that it was a 'taboo' subject and that the organization would show little sympathy to a stress sufferer.

None of the respondents could truly define their role in the prevention of occupational ill health. There was a significant discrepancy between the answers to defining their role in injury prevention, which were quite detailed as shown above, and the lack of any firm ideas about their role in ill health prevention. There was clearly a feeling that occupational illness was not something over which they had much control and neither was it generally felt to be suffered much in this organization. In many cases the discussions relating to occupational ill health quickly moved away from how to prevent the illnesses to how to prevent sickness absence and claims against the company.

CONCLUSIONS AND RECOMMENDATIONS

The organization under study is a classic bureaucracy¹⁴ with well-defined systems, generally clear role definition and an apparent commitment to reducing accidental injury. Collection of injury data is efficient, but illness data is less well compiled. Line and senior managers have a generally clear comprehension of their role in injury prevention, but are much less clear regarding the relevance of their role in prevention of ill-health. They have a tendency to cite operator error as being the major contributory factor to accident causation, but this appears to be due in part to the way in which they receive information regarding injuries.

The tendency to see accident causation as largely being a feature of operator error is potentially dangerous, if it blinds an organization to the importance of latent failures. The authors have therefore suggested the trial of a safety and health review system which addresses organizational issues, as well as some more traditional hardware items. The reasons for choosing to trial a review are twofold: (1) the results will hopefully provide useful information to the organization regarding the efficiency of some of its OSH control systems and shift the emphasis away from the counting of lost time accidents; and (2) the researcher's interest is to observe any changes to the perception of OSH issues in the managers who are involved in carrying out the review. The system will require them to ask questions which do not appear to be widely or formally asked at present.

The model for the topics covered by the review is the list of General Failure Types modified by Reason, Groeneweg, *et al.*⁹ This trial is currently underway.

The major recommendation for future research which has resulted from this study is in the area of the impact and influence of OSH data upon management decisions. Research in other management fields shows that perspectives can be greatly influenced by

the way in which data are presented.¹⁵ However, little research has been carried out in the field of data relating to occupational injury and ill health.

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