

LESS STRESS = MORE PERFORMANCE

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Work-related stress is a significant occupational health issue. The UK Health and Safety Executive's guidance on work-related stress requires organisations to adopt a risk assessment / management approach to tackling stress at source. This paper describes an innovative employee involvement project, which used a simple stress risk assessment method to prevent or mitigate key work-related stressors associated with process plant commissioning. The project's straightforward approach to addressing work-related stress won a 2002 European Safety and Health Agency Good Practice Award for preventing work-related stress.

Work-related stress; risk assessment; risk management; good practice

THE SCALE OF WORK-RELATED STRESS

In 2000 the Health and Safety Executive announced its 'Securing Health Together' occupational health strategy¹. 'Securing Health Together' aims to achieve by 2010:

- a 20% reduction in work-related ill health to both workers and the public
- a 30% reduction work days lost to work-related ill health
- an opportunity for everyone not working due to ill health to rehabilitate back to work or gain access to work as appropriate

An important aspect of achieving these targets is addressing the topic of work-related stress, as HSE estimates stress-related illness to be responsible for the loss of 6.5 million working days each year², with one in five workers reporting their job is "very" or "extremely" stressful³.

RISK ASSESSMENT AND WORK-RELATED STRESS

Recent HSE guidance⁴ recommends that the 5 risk assessment steps⁵ be followed when tackling work-related stress. However, there are some difficulties in applying the risk assessment methodology, originally developed for physical hazards, to the examination of psychosocial hazards. A risk assessment for physical hazards is based on quantifying the hazard-harm relationship in order to gauge associated risk. Attempts to quantify this relationship for psychosocial hazards are problematic, as this relationship is influenced by individual differences. These difficulties can be illustrated through an example. Workload (potential hazard) may be perceived as positive and stimulating when at a certain optimum level, but can become a source of harm if too high, leading to feelings of stress and tiredness, or if too low, leading boredom and frustration. The main problem is that what is considered to be an optimum level will depend on the individual. Moreover, the harmful consequences of excessively high or low work demands may only be revealed after long periods of time, when the person's physical and mental health deteriorates, and may not be readily linked to the original hazard.

These difficulties have led some to argue that a risk assessment methodology is not a 'fruitful' method for the assessment of psychosocial risk. However, the opposing argument is that, compared to other stress management techniques, the risk assessment approach to stress is likely to be more effective, as the source is being addressed rather than the symptoms. The

argument is that the influence of individual differences is not sufficient reason to reject a risk assessment approach, but simply a significant factor to be taken into account when designing and implementing a stress risk assessment method. For a comprehensive review of the stress / stress risk assessment literature, an excellent free downloadable report is available⁶.

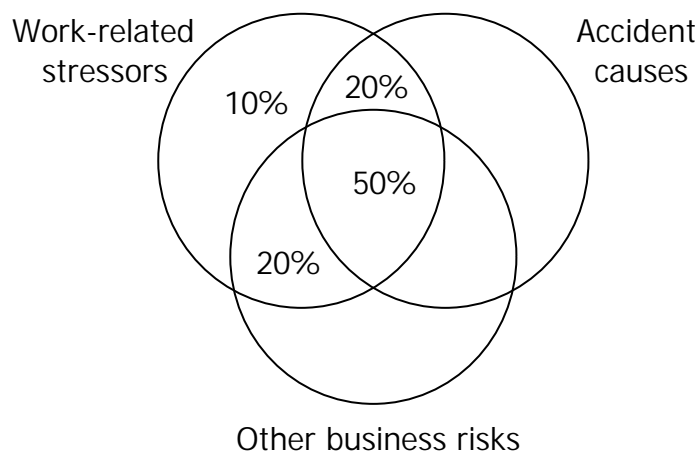
WORK-RELATED STRESS AND OTHER RISKS TO BUSINESS PERFORMANCE

A stress risk assessment involves identifying the main work-related stressors (sources of stress) affecting workers, and taking steps to prevent or mitigate their effects. However, the potential benefits of tackling work-related stressors extend beyond benefits for individual psychological health. Work-related stressors are typically conceptualised as causing harm to psychological health. The degree of overlap between common work-related stressors and recognised root causes of accidents was therefore examined. This was achieved by comparing two root cause analysis models used in the UK offshore oil and gas industry^{7,8} and HSE's human factors guidance⁹ with the common work-related stressors. This established that approx. 70% of common work-related stressors are also potential root causes of accidents. For example, "lack of training to do my job" is a recognised work-related stressor. Not being properly trained is also a recognised potential root cause of accidents. Moreover, lack of adequate training could cause other types of harm to a business, for example leading to customer dissatisfaction, poor quality work etc.

Establishing a link between promoting psychological health, preventing accidents and managing other business risks is likely to increase the relevance and uptake of a stress risk assessment.

Figure 1 below indicates the degree of overlap between 40 common work-related stressors, root causes of accidents and other types of business risks.

Figure 1: Different types of hazards



CONTEXT OF THIS PROJECT

BP's Grangemouth petrochemicals-manufacturing complex employs around 2000 people. The complex stabilises crude oil and gas piped from offshore platforms, refines and exports crude oil, and manufactures petrochemical products. It is a major contributor to the UK economy, and is a COMAH site. The Technology Scale-Up Group is responsible for demonstrating the new ATC chemical process technology.

PROBLEM

During 2001, the site's Technology Scale-Up Group was about to commission an extension to the ATC demonstration plant. This involved expanding the operator team from five to fifteen. A new plant with a new control system meant that all the team were facing fresh challenges, especially those coming from outside pilot plant operations.

The commissioning was being conducted against a backdrop of site staff reductions, leading to considerable job insecurity. From previous experience, the ATC project team recognised that plant commissioning can be a very demanding time for all concerned, as the commissioning team strive to overcome the inevitable technical challenges. Moreover, the ATC team wanted to do their utmost to avoid the new technology they were developing being associated with anything less than an excellent health and safety record. The ATC team had already taken steps to eliminate physical hazards and improve safety culture. They now wished to take action to prevent avoidable stress by identifying and mitigating any work-related sources of stress arising from the commissioning project.

SOLUTION

The stress prevention project began by forming a team of 6 people, which included the project manager and representatives of the two main groups working on the project: the day support team of engineers, project leaders and chemists and the shift operations team who operate and maintain the plant. The aim was to involve a cross-section of the workforce in cooperating to prevent work-related stress.

This project team met for a briefing on the nature, signs and symptoms and causes of stress, provided by a local Chartered Psychologist. The team then brainstormed all the likely sources of stress that might arise from the commissioning project. These were compared to a set of 40 common work-related stressors, and this generic set was expanded to include the stressors specific to the project. The day and operations team members then worked separately to prioritise their stressors, as these may differ due to their distinct role and tasks.

The stressors were sorted according to whether they were (a) relevant to the project (b) currently well controlled (c) likely to cause stress. For each of the two groups, this yielded a set of "top five" stressors on which there was a consensus about their potential to cause harm. Examples of the "top-five stressors from each group included high workload, job insecurity, and demands from others for unnecessary detail, and pressure from senior managers.

The team then worked together to complete the risk assessment process. They identified how or why each stressor caused harm, and shared ideas about what organisational and individual actions would mitigate the effects of the top-five stressors, and identified relevant, practical control measures. This involved discussing some very personal issues, such as the effects of job insecurity on other family members.

"It was a really open debate between all involved: day and shift teams" – Shift Technician

The proposed control measures were recorded and later shared and endorsed at a second workshop attended by the whole ATC team of 25 staff.

The most striking example of a stressor which was effectively identified and controlled, was “unnecessary detail”. This stressor, specific to the demands of plant commissioning, referred to the effects of other people not specifying the amount of technical detail they required, and the timescales involved. As a result, staff worked long and hard to promptly produce detailed technical information, which was often not required.

At the second workshop, where the stress prevention project team’s “top-five” stressors were shared and endorsed by the whole ATC team, a phrase was coined which became the watchword for dealing with unnecessary detail. This phrase – “the minimum requirements” – is now used by all team members to challenge others on the level of detail and deadlines attached to work they require. Adoption of the “minimum requirements” concept has had lasting benefits for managing workload amongst the ATC team. It has also changed how some team members deal with work-life balance issues. For example, Kenny Fraser is a shift technician with a young family, who at the time of the stress prevention project was also studying part-time for a chemical engineering degree. Kenny’s degree design project was at a crucial stage, leading to considerable personal stress as he tried to reconcile the demands of work, family and study. For Kenny, the “minimum requirements” concept was a breakthrough:

“The minimum requirement did not just impact on one specific thing...it changed my thinking in respect of my university design project. I was getting into too much detail, and I realised I could take some pressure off myself by making assumptions and estimates, which then allowed me to make good progress, get a bit more sleep and feel better at work. I found it was a win-win...” – Kenny Fraser, Shift Technician

EFFECTIVENESS OF THE RESULTS

The stress prevention project was evaluated to judge its effectiveness by interviewing a sample of people from the ATC team, including the project manager, day and shift team members. These interviews focused on how the project had impacted upon their perceptions and personal experience of stress, and whether & how their behaviour or the behaviour of others had changed. Their quotations have been used to illustrate the effectiveness of the project.

In summary, this relatively simple, low-cost stress prevention project was conducted by a cross-section of employees, with minimal external input. The project’s design and execution exceeds the requirements of UK legislation and regulatory guidance on preventing risks to health and safety arising from psychosocial hazards at work.

Framing stressors as a hazard to be controlled, just like the more familiar process and chemical hazards, was a logical extension to existing risk assessment processes, and opened a mature debate about otherwise delicate topics such as the effect of management style on others.

The project normalised discussion of stress and stressors amongst the team, and facilitated team spirit and open communication.

“ It was enormously beneficial for team bonding, and discussing human issues, which we don’t do often” – Ruth Robinson, Technologist

In the opinion of the external Chartered Psychologist who facilitated part of the project, this project is unique in (a) demonstrating considerable management foresight & leadership by taking action to prevent work-related stress, before any stress problem arose, (b) its use of a very simple yet robust employee involvement process added to existing risk assessment processes and (c) how lasting behavioural changes have been achieved in the ATC team, thus enhancing their existing health and safety culture.

COSTS / BENEFITS

The project costs were low. Apart from staff time, the main cost was external input from a Chartered Psychologist to explain the nature and symptoms of stress.

The project manager firmly believes that the project led to a deeper level of communication, sharing of feelings about work, and enhanced trust. This belief is also held by team members, for example:

“the whole team is now more open about confronting the issue of stress, and more likely to support and challenge colleagues under stress” - Technologist

“... my opinion is that it has helped to head off undue stress arising from the project – I’d firmly advocate that others do something like this – being proactive rather than reactive” – Stress Prevention Project Team Member

Others have commented on the benefits beyond the workplace:

“...one thing I found useful was highlighting the need to get the home / work balance right” – Shift Technician

Since the stress prevention project, the ATC team have had a perfect health and safety record, with no stress-related absence.

CONCLUSION

This project demonstrated that a proactive approach to anticipating potential stressors associated with a future events is possible, and how opening up a mature debate on such topics can bring benefits which extend beyond individual psychological health, as many work-related stressors are also potential accident causes or otherwise harmful to a business. The project’s simplicity and low cost means this approach is particularly suited to SMEs, who may be constrained by shortage of time, money and internal expertise.

The project won a European Safety and Health at Work Agency 2002 Good Practice Award, which were based on the theme of “Preventing psychosocial hazards at work, especially stress”. The awarding agency commended how successful the intervention had been in taking a preventative and holistic approach to stress at work at the beginning of the

project. They said "...it shows how at the design stage, future hazards can be identified and removed or reduced. The effects should be sustainable. It also illustrates how employees can be involved in the risk assessment and management process. The cost was low and the method straightforward so this initiative would be appropriate for others including SMEs. The initiative also illustrates appropriate use of an external expert – the chartered psychologist – to assist the team in the risk assessment process"¹⁰.

PRACTICAL STRESS RISK ASSESSMENT TOOLS

In conjunction with industry, the stress risk assessment method described, and two other stress risk assessment methods, have been developed into StressTools, a simple software package designed for use by non-specialists to identify and manage the risks associated with work-related stressors.

FURTHER INFORMATION

European Safety and Health Agency's Good Practice Awards <http://osha.eu.int/ew2002>

HSE's stress web-site – www.hse.gov.uk/stress

StressTools – www.keilcentre.co.uk

REFERENCES

- 1.HSE (2000) *Securing Health Together : A long-term occupational health strategy for England, Scotland and Wales*. HSE Books; Sudbury MISC 225
- 2.Health and Safety Commission (2001), *Strategic Plan 2001-2004*
www.hse.gov.uk/action/content
- 3.Smith, A; Johal, S, Wadsworth, E; Davey Smith, G & Peters, T (2000) *The Scale of Occupational Stress: the Bristol Stress and Health at Work Study* HSE Contract Research Project 265/ 2000
- 4.HSE (2001) *Tackling work-related Stress: A manager's guide to improving and maintaining employee health and well-being* HSG 218 HSE Books; Sudbury
5. HSE (1999) *5 steps to risk assessment* HSE Books, Sudbury INDG 163
6. European Agency for Safety and Health at Work (2000) *Research on Work-related Stress* ISBN 92-828-9255-7 downloadable free at
<http://agency.osha.eu.int/publications/reports/203/en/index.htm>
7. HSE (2000) *Factoring the Human into Safety* Offshore Technology Report OTO 2000/036
8. BP Amoco (undated) *Incident Investigation: root cause analysis training manual*

9. HSE (2000) *Reducing Error and Influencing Behaviour* HS(G)48

10. European Agency for Safety and Health at Work (2002) *Prevention of Psychosocial Risks and Stress at Work in Practice* ISBN 92-919-012-0