

MANAGING STRESS IN A SAFETY CRITICAL INDUSTRY

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BP Amoco's Grangemouth petrochemicals complex is one of their largest operating assets. It comprises an integrated crude oil stabilisation plant, oil refinery, chemicals plant and crude oil export terminal, and employs over 2000 people. Like many other businesses, the petrochemicals complex is not immune from competitive pressures. During the past ten years, the site has undergone a number of major organisational changes, all designed to ensure that the business is positioned to perform competitively. Site leadership are keenly aware that whilst pressure can help individual performance, stress is always bad for your health, and is never good for any business. At Grangemouth, there is the added dimension of people working in a safety-critical industry.

Following a stress audit in part of their business, Grangemouth site leadership recognised the need for a comprehensive educational programme for all employees on the nature, symptoms, and resources available to tackle stress. An employee-led working party, with specialist support, designed and implemented an innovative multi-media educational programme which included a bespoke video, an intranet web-site, a booklet for every employee and a poster campaign. The preventative emphasis of the educational programme complements the Health and Safety Executive's guidance for employers on stress at work. This paper describes the background to this project, its aims, the development and implementation process and results achieved to date. Delegates will have an opportunity to view sections of the video and the intranet web-site.

INTRODUCTION

In the early 1990's, UK Health and Safety Executive research found that an estimated 183,000 workers believed they had suffered work-related stress, depression or anxiety in the preceding year, and over 50% of them believed their condition was caused, not merely made worse, by work.

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At Grangemouth, there is the added dimension of people working in a safety-critical industry. The requirement is for employees to understand the difference between pressure and stress and to know what to do if they feel things are not in balance. Equally, it is vital that

managers are aware of the issue and the damage that stress can cause. Finally, there must be effective, readily accessible support mechanisms available to employees so that any stress issues are recognised and dealt with at an early stage.

THE NATURE OF PRESSURE AND STRESS

Stress is best regarded as a *perceived* imbalance between *demands* and *resources* (see Figure 1). We can readily identify external demands made by employers, customers or family members to take on work, responsibilities and meet targets etc. We try to meet demands by deploying external resources such as our time, other people and money. What is less well appreciated is the existence of internal demands and resources. We can demand perfection in our work when adequacy will do, and fail to develop and deploy self-confidence to meet challenges which are within our grasp. When demands and resources are roughly in balance, *pressure* results. Pressure is generally a positive experience. We may be very busy, but are able to meet challenges. When too many (or too few) demands are made on our resources, stress can result, and performance suffers.

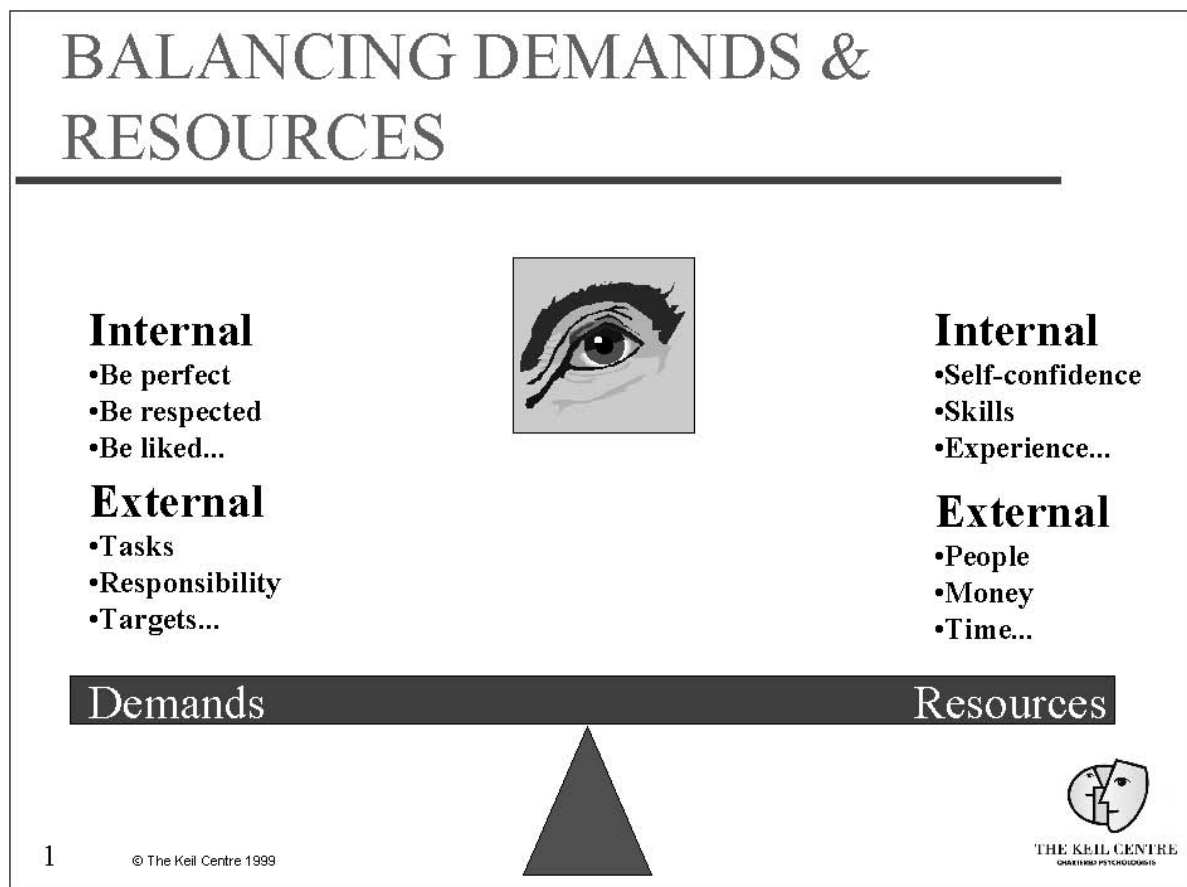


Figure 1: Balancing Demands and Resources

Our *perception* of the demands / resources balance is very important. For example, we may actually possess the ability and resources to meet new challenges, but our perception of our own ability is clouded by self-doubt.

At an individual level, stress manifests itself via a range of physiological, psychological and behavioural symptoms, e.g. insomnia, muscle tension, lowered concentration and mood, and increased irritability. Organisational symptoms can include high turnover, absenteeism, lowered productivity and a reduction in creativity and willingness to take risks¹.

OPTIMUM PERFORMANCE

For optimum performance, we should all aim to stay within the pressure zone, which is illustrated in the stress-performance curve. Our performance can suffer when we are significantly over- or under- aroused (Fig 2).

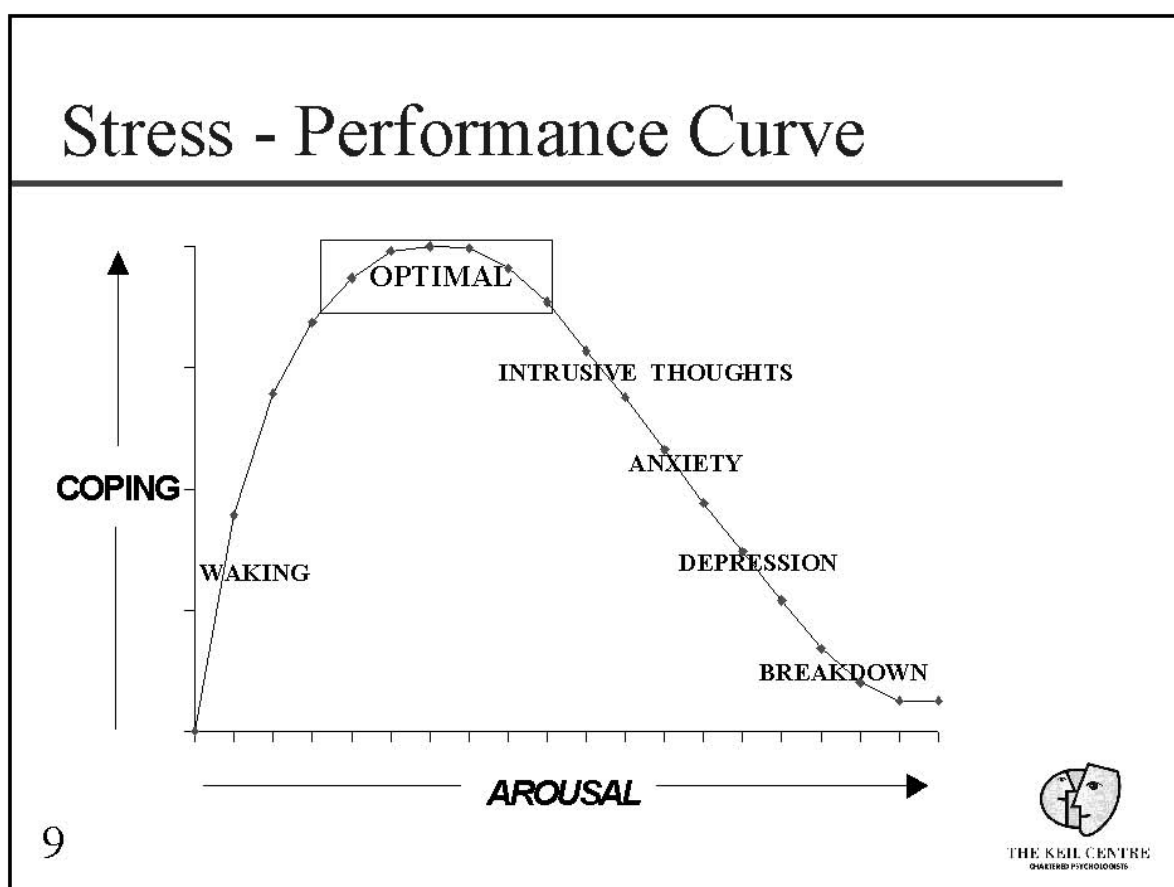


Figure 2: Stress – Performance Curve

THE PROBLEM

The Grangemouth site has a well-established occupational health service. In 1996 they became aware of an increasing number of stress-related referrals from the Chemicals business. Once senior management had been appraised of this trend, they commissioned an in-depth examination of any organisational causes. In line with the Health and Safety Executive's² guidance on work-related stress, their emphasis was clearly on prevention at source, wherever possible. This was achieved by a series of employee focus groups, tasked with identifying causes and suggesting potential solutions. The employee focus groups were facilitated by a Chartered Psychologist from The Keil Centre.

FOCUS ON PREVENTION AT SOURCE

The focus group output included six aspects of how the Chemicals business was organised and managed, which were believed to be contributing to stress levels on the site. These included aspects of:

- Reward systems
- Pace of change
- Senior management visibility
- Design of shift systems
- Management/employee communication
- Working hours and development of a “long-hours culture”.

Over the past two years senior management have acted on these topics, identified as stressors by the focus groups, and have thereby endeavoured to tackle the stress problem at source. For example, a new reward model has been launched, which will allow more flexibility in salary progression based on an individual’s contribution, and a bonus for achieving team targets.

THE NEED FOR EDUCATION

In addition to these preventative actions, it was also apparent that an educational programme was required on the nature, causes and remedies of stress. It was important to raise the awareness of all employees about their role in tackling stress, as the preventative actions would take time to have an impact.

EMPLOYEE INVOLVEMENT IN DEVELOPING A SOLUTION

A cross-site vertical slice working party led by Ian Fyfe, HR Adviser at BP Grangemouth, was given the task of devising an educational programme about stress, accessible to all employees. Membership included manufacturing technicians and engineers, managers, occupational health professionals and trade union representatives. The working party was assisted by Ian Tierney and Ronny Lardner, Chartered Psychologists at The Keil Centre. Employee involvement was chosen for programme development so the final product was relevant to the site, credible, hard-hitting and ownership was maximised.

Each working party member consulted with ten of their colleagues on programme design. Views were sought on key messages and content, and what would attract or turn people off. Many held a strong view that the final product must emphasise both management’s role in preventing work-related stress, and individual responsibilities. A purely individual approach would be a major turn-off.

The working party distilled key messages for the programme, including the strong emphasis on prevention, senior management endorsement, how to recognise stress and its symptoms, and management’s role. An analysis of likely costs and benefits was also completed. The aim was self-education, and demystification of stress so people are able to discuss it openly and be sign-posted to help available.

To get the message across to all employees and their families, including many shift-workers, BP called upon the expertise of Picardy Productions, Scotland's largest independent video production company.

Working together, BP, The Keil Centre and Picardy devised a comprehensive multi-media educational package with a bespoke seventeen-minute video, a site-wide intranet web-site with video clips, a pocket-sized booklet posted to every employee's home address and a poster campaign. For those employees who wished to explore the topic in greater detail, guidance on the resources available within BP Grangemouth is provided, with key contacts.

The video featured many BP employees, including the site leader, a health and safety representative, an occupational health nurse and a training and development leader. A range of 24-hour operations are depicted.

An interesting aspect of the project was the development of an intranet web-site. As the majority of employees have access to a networked PC, the web-site is easily accessible at all times and can be readily updated.

REACTIONS SO FAR.....

The educational programme was rolled out across the site in December 1999. Working party member Charlie Sim, a manufacturing engineer who was involved in developing the educational programme, has been monitoring its impact. In the first few days, the web-site was accessed by 900 users, and has now clocked up thousands of sessions. Charlie has found people are clearly more aware of stress symptoms, causes and the range of help available. Increased patterns of referral for stress-related problems have been noted by the Occupational Health Service, which can clearly be attributed to the educational programme. The programme's strength lies in its multi-media nature. It has achieved an impact which would be difficult using a video, web-site or printed material alone. Employees confirm the programme has met their expectations, and other progressive organisations are looking to learn from BP's experience.

Ian Fyfe commented, "the key issue was how to develop a programme which will endure and will be used as a resource for many years to come. The involvement of employees at all levels and representing key interest groups was also important so that the final product was something of real value and practical use. - The expertise of the Keil Centre and Picardy gave the product a credibility and depth which we could not have attained working on our own. I am delighted with the final product and with the reaction we have had from employees. It is important that we continue to monitor the effects of the programme in order to measure its impact on our business."

ABOUT THE AUTHORS

Ronny Lardner is a Chartered Occupational Psychologist with The Keil Centre, Edinburgh, a private practice of chartered occupational and clinical psychologists specialising in applied psychology in organisations. He has a particular interest in human factors and health and safety. He and his colleagues have considerable experience of the prevention, management and treatment of work-related stress in process industries. He can be contacted on telephone 44 131 667 8059 fax 44 131 667 7946 email ronny@keilcentre.co.uk

Ian Fyfe is a Human Resource Adviser with BP Amoco. Recent projects have included designing a team-based reward system, surveying shiftworkers's preferences for different shift patterns, implementation of the Working Time Regulations 1998 and developing a substance abuse policy for BP Grangemouth. He can be contacted on 44 1324 493290 email FyfeI@BP.com

REFERENCES

1. Lardner, R (1997) "Is it possible to control occupational stress" in Proceedings of IChemE Hazards XIII symposium on Process Safety – The Future, Manchester, UK, 22-24 April 1997, p 25-29
 2. Health and Safety Executive, 1995, Stress at work: a guide for employers
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