Workplace trauma and its management
Review of the literature

Prepared by
The Institute for Employment Studies
for the Health and Safety Executive
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Since the beginning of the century there has been a growing awareness of the psychiatric impact of certain severe stressors on an individual’s ability to function effectively, in both their personal and professional lives. In more recent years, attention has been focused on the psychological consequences for those exposed directly to, or working in the aftermath of, extremely traumatic incidents. There has also been much recent debate around trauma management and the treatment of traumatic symptoms.

This report provides the findings from a major review of the research literature on Post-Traumatic Stress Disorder (PTSD) and trauma related mental health. It examines the historical development of our understanding of trauma, and the current definitions available for PTSD.

The organisational and legal implications of trauma are explored, as well as the data available on the scale and prevalence of trauma for different occupational groups.

The report then moves on to look at trauma management practices and establishes what is known about the efficacy of different approaches.

Finally, conclusions and recommendations from the literature are presented.

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The project was conducted on behalf of the Health and Safety Executive (HSE).
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Executive Summary

Introduction

This research project was commissioned by the Health and Safety Executive. The objectives for the study were laid out at the start of the research project. The primary objectives were:

- To provide a comprehensive picture of current knowledge about the impact of traumatic incidents on employees' mental health.
- To establish the extent to which there is consensus on those forms of response which work best.
- To assess whether the research evidence is sufficient to provide general guidance on best practice for employers.

The evolution of a concept

- Although it took the Vietnam War to generate a large volume of research into post-traumatic stress reactions, the impact of death and disaster upon human beings had been noted throughout history.
- Early researchers in this field were usually physicians who often resorted to physiological explanations for patient's symptoms. Although reactions to traumatic events were often described in similar terms, a large number of cause-named symptoms were offered as diagnoses, eg Railway Spine.
- In the early 20th century psychological causes began to be offered as an explanation of symptoms. Psychological explanations came to dominate thinking from the mid-20th century.
- Post-Traumatic Stress Disorder was first listed as such in the Diagnostic and Statistical Manual, third edition, in 1980. It has since been revised, clarified and extended. The World Health Organisation also have a definition of PTSD in their International Classification of Diseases.

PTSD's place in the mental health lexicon

- The current working definition of PTSD is provided by the American Psychological Association and is referred to in this report as DSM-IV.
People suffering from PTSD display three sets of symptoms: they re-experience events, for example through flashbacks or nightmares; they attempt to avoid situations or things which remind them of the trauma (avoidance and numbing); and they show signs of hyper-arousal. To meet the DSM-IV diagnostic criteria for PTSD a person must also have been exposed to a traumatic event and reacted to it in a horrified, helpless, or fearful manner.

It is to be expected that people who have been exposed to a traumatic event will show some reaction in the immediate aftermath.

However, not every reaction to traumatic events will lead to a person suffering Post-Traumatic Stress Disorder. PTSD is one extreme manifestation of symptoms following a traumatic event. Other diagnoses are available, namely Acute Stress Disorder or Adjustment Disorder.

A diagnosis of PTSD is difficult as there may be co-existing and interacting mental health issues which complicate the symptom profile.

The type or severity of the traumatic incident has been suggested to have an impact on the development of PTSD. However, more recent thinking has suggested that the relationship between dose and response is more complicated than at first believed.

The literature also suggests that traumatic events with certain features, e.g. torture, bereavement, witnessing death, are more 'toxic' that other traumas.

Identifying sufferers

There are three main ways of measuring who has PTSD: self-report measures, structured interviews and objective measures (including psycho-physiological measurement).

Self-report measures are generally in a questionnaire format. A person is asked about their general mental health and/or experience of PTSD related symptoms. Although they are relatively cheap and easy to administer, they have certain limitations. They rarely reflect the full range of PTSD symptoms, or the diagnostic criteria. There are statistical methods for assessing the usefulness of different self-report measures but its usefulness for other groups is likely to be influenced by the similarity of the population for whom the test was developed.

Structured interviews are generally administered by a mental health practitioner which makes them more expensive and therefore more often used to determine PTSD in individuals rather than whole populations.
Objective tests to determine if an individual has PTSD are seldom used as they are not yet able to distinguish subtle differences between diagnostic categories.

Disasters, trauma and organisations

The literature illustrates the increasing scale and frequency of events which can be classified as trauma inducing.

Crisis management — ‘when’, not ‘if’

- Perrow (1984) pointed out that systems will fail. Organisational systems in particular are based upon fallible human beings, health and safety systems included. Organisations should be able to foresee events and use a range of preventative and reactive actions.

- Organisational culture has an impact on both the likelihood of, and response to, traumatic events. Organisations can be classified as ‘crisis-prone’ or ‘crisis-prepared’. Crisis-prone organisations have a weaker grip on risks and probability than the crisis-prepared.

- Those events which trigger trauma have two main characteristics. They are often assessed as being of low probability. Secondly, one minor system failure tends to lead to another. Both combine to make it more likely that organisations will fail to take occurrences seriously and delay their response until it is too late and a disaster is unpreventable.

- Several authors have conceptualised crisis management as a three phase process — the pre-crisis phase, crisis impact and rescue, recovery or demise. This conceptualisation allows the development of a managerial-focused crisis prevention model concentrating on prevention, minimisation and re-establishing reputation, as appropriate.

- In crisis management, internal factors have a very important role to play in an organisation’s decline or recovery. Given that internal factors are potentially easier to address than external factors, it would seem possible for organisations to become more crisis prepared.

- During crises, Quarantelli (1988) identifies as a major problem the poor, incomplete or inefficient flow of information. Effective communication is therefore vital and needs to be ‘bottom up’ as well as ‘top down’ to enable the full and timely implementation of control decisions.

PTSD at work — the lessons from ‘at-risk’ occupations

- Most of the published literature concentrates on large scale, news-worthy disasters and may therefore be unrepresentative
of the 'typical' organisation's experience of traumatised employees.

- When the levels of PTSD in the general population are calculated, the most reasonable looking estimates are in the region of a current prevalence of 0.5 per cent and a lifetime incidence of 1.3 per cent.

- Therefore although an individual's chances of suffering PTSD are relatively low, employers are likely to have one or more sufferers in their employment at some time.

- However, it can be said that exposure to traumatic events varies by occupation, and employees may well suffer from trauma symptoms without experiencing full PTSD.

- For some occupations, exposure may be unavoidable, eg soldiers in combat. Groups such as emergency workers may be subjected to traumatic experiences with varying levels of frequency. For other employees, trauma exposure may be sequential, but less individually devastating, eg accident and emergency work.

- This is important because the literature suggests that the nature and intensity of the trauma experience can influence the prevalence and symptomology of PTSD.

- Research also suggests that employees other than those directly involved in the traumatic incident may also suffer some traumatic reaction and hence attention should be paid to the full complement of staff following an incident.

- In the studies of emergency services personnel, factors which were within the organisation's control, for example being well managed and organised, part of a cohesive team, preparation and training, were associated with lower levels of PTSD. The research suggests a list of pointers for the development of programmes to protect employees.

- Other organisational issues include staff not reporting violent incidents, as they accept it as part of the job, and the impact of a changing incidence and pattern of crime.

**Organisations' responses**

- Good quality evaluations of trauma management programmes are relatively scarce. In part, this is due to inherent research design problems associated with traumatic events.

- Pre-incident interventions include: recruitment and selection criteria, general training and stress-specific training. These have been used most often in military and emergency service settings.
• Debriefing is the most common post-incident intervention and has a long development history, dating back to the First World War. Debriefing may also be known as ‘critical incident stress debriefing’ (Mitchell, 1983) or ‘psychological debriefing’ (Dyregrov, 1989).

• Debriefing aims to mitigate the harmful effects of traumatic stress and to accelerate normal recovery patterns. However, debriefing is contentious because there is a shortage of sound empirical research into its efficacy.

• Uncontrolled studies of debriefing are interesting but fail to prove that it is the debriefing process which delivers, for example, the reduced absenteeism, etc. claimed for it.

• Both uncontrolled studies and comparison studies support the idea that traumatised individuals feel that they benefit from the debriefing process. Furthermore, one comparison study raises pertinent questions as to the timing of the debriefing process.

• However, the controlled studies to date suggest that, at best, the impact on the debriefed individuals (in terms of traumatic symptoms) is neutral. What is more, the effect of debriefing in one study was found to cause further harm by retraumatising individuals. It is thought to be the intense re-exposure to the traumatic event in the debriefing process that causes the damage.

• There is no evidence that debriefing in a clinical setting has the same effect as debriefing in a work or occupational context. Consequently, employers using debriefing need to be absolutely clear about what they aim to achieve through debriefing and be aware that the process may have deleterious side effects.

• A range of other post-incident interventions have been reported. These include; ‘mental first aid’ (which has been used in work contexts); cognitive and behavioural treatments, for example, imaginal flooding; inpatient treatment; pharmacotherapy. Each of these methods has been credited with varying levels of success, although cognitive and behavioural processes appear to have the best success rates at present.
1. Introduction

1.1 Background

Since the beginning of the century there has been a growing awareness of the psychiatric impact of certain severe stressors on an individual's ability to function effectively, in both their personal and professional lives. In more recent years, attention has been focused on the psychological consequences for those exposed directly to, or working in the aftermath of, extremely traumatic incidents.

The pattern of harm which follows traumatic events has to some extent been charted, although not without great (and ongoing) debate on both the definition and parameters of Post-Traumatic Stress Disorder (PTSD). As a result, psychologists and psychiatrists are now turning their attention to developing responses that serve to minimise further psychological harm, post-trauma. However, different research approaches, in different settings have produced varying findings on the efficacy of response to treatment. As a result, persuasive evidence about which responses work best, and whether their efficacy can be replicated across different work settings, is limited.

With this in mind, the HSE commissioned a research project to help clarify these issues and to determine whether sufficient is now known to offer employers guidance on best practice. The full research objectives are spelled out in detail in the following section.

1.2 Research objectives and methodology

The objectives for the study were laid out at the start of the research project. The primary objectives were to:

- provide a comprehensive picture of current knowledge about the impact of traumatic incidents on employees' mental health
- establish the extent to which there is consensus on those forms of response which work best
- assess whether the research evidence is sufficient to provide general guidance on best practice for employers.
A collection of methodological tools were chosen to achieve these objectives. In particular:

- a review of the literature to date
- establishing, through case studies, current best practice
- analysis of expert opinion using the Delphi technique.

Since then, the HSE decided that the original proposal, for one report which covered all of the objectives, could be bettered by separating the literature review element of the research from the field work. Therefore, while this report covers all of the above objectives, it does so from an academic perspective, using the literature on PTSD only. It was undertaken during the period February to December 1997.

A second report will be issued during 1998, which will address the second half of the research project specification. The second report will include the research into best practice in organisations and the results of the Delphi exercise.

1.3 Structure of the report

The second chapter of the report aims to provide a reasonably comprehensive introduction to PTSD and will:

- examine PTSD from a historical perspective, describing how the concept has developed from early, diverse classifications such as ‘Soldier’s Heart’ to a modern understanding of trauma related disorders
- identify how the symptoms of PTSD have appeared consistently in descriptions of the psychological profile of traumatised people
- describe the halting progress in the understanding of trauma-related mental ill-health, beginning with the earliest theories about physical causes, the ultimate dominance of psychological explanations, and the eventual legitimisation of the phrase ‘Post-Traumatic Stress Disorder’
- consider the path taken through various modern definitions of PTSD before providing a deeper description of the two major current diagnoses, ie those provided in the American Psychological Association’s Diagnostic and Statistical Manual of Mental Disorder (DSM-IV, APA 1994), and the World Health Organisation’s alternative diagnostic guidelines of the International Classification of Nervous and Mental Diseases (ICD-10).

Chapter 3 considers diagnosis and measurement issues. PTSD is a term which is rapidly growing in recognition and is often used to describe a whole range of post-incident reactions. This chapter:
clarifies the other trauma related disorders which are available to describe traumatic reactions, and

- outlines the different methods of assessment available to determine who has PTSD, and how severely they are affected.

Chapter 4 discusses the relevance of the PTSD literature for organisations. In particular:

- It firstly takes a broad look at the crisis management literature and the role of the organisation in the crisis management process.

- It then considers evidence on the type and nature of other incidents which have been associated with post-incident reactions.

- Finally, it examines the legal implications for employers in terms of risk assessment and mental health issues, with a particular emphasis on post-incident reactions.

The above chapters provide background on what PTSD is, how it has developed, definitions, relevance to organisations, and legal implications. It forms a suitable summary for those who want an understanding of PTSD without going into the practicalities of prevalence and treatment etc.

Subsequent chapters in the report then provide more detailed information for those involved at a more practical level.

The major occupational groups for which some evidence of the prevalence of traumatic reactions can be found are described in detail in Chapter 5. It covers not only trauma arising from major accidents and disasters, but also from more personal events such as violence at work and road traffic accidents.

In Chapter 6, the literature on managing post-incident reactions is considered. It aims to:

- identify the different types of trauma management that exist, and

- assess the research evidence on specific responses to traumatic events, including defusing, debriefing, etc. which may aid both trauma sufferers and colleagues who might also be affected.

Chapter 7 looks briefly at some of the few case studies of organisational responses to trauma that have been outlined in the literature. It considers the practices that are in place and identifies issues for the fieldwork and for future research.

Chapter 8 covers conclusions and the recommendations emanating from the review.
2. Changing Definitions

2.1 The historical perspective

It was in 1980 when a classifiable psychiatric syndrome first became formally defined and termed ‘Post-Traumatic Stress Disorder’ (APA, 1980). This formal acknowledgement was partly encouraged by the large number of Vietnam veterans who were suffering from a post-Vietnam syndrome involving varying combinations of ‘anxiety and hyperarousal, depression and guilt, impulsive or violent behaviour, social alienation or isolation, and often substance abuse’ (APA, 1994). Additionally, this clustering of symptoms was also being recognised in non-military situations, such as victims of disasters and violent crimes.

2.1.1 From Soldier’s Heart to Post-Traumatic Stress Disorder

In a recent review of the evolution of the PTSD concept, Wilson (1995) highlighted the growing awareness of the psychiatric impact of certain severe stressors on an individual’s ability to function effectively. Although the work of Freud was seen as a starting point for research focusing on the impact of extreme stressors, attention was drawn to this area as a result of the large number of cases identified as ‘Shell Shock’ or ‘Battle Fatigue’, observed in soldiers during World War I.

In fact, people’s reactions to traumatic events have been noted throughout recorded history, even as early as 2,500 years ago. Everly (1995; reporting Holmes, 1985) reported the recording of post-traumatic stress reactions in participants in sixth century BC warfare.

The individual’s reaction to unusually stressful events continually appeared in historical accounts, through the diaries of both Samuel Pepys, following the great fire of London, and Charles Dickens, following a rail accident (Daly, 1983 and Trimble, 1981; both reported in Volpe, 1996).

In the late 19th and early 20th century, a number of names were given to disorders which would now be recognised as bearing strong similarities to PTSD. Early psychologists recognised that a variety of traumatic events produced similar symptoms, and so quite general names were given to the condition they were attempting to define and classify. For example, traumatophobia or
Table 2.1 Major stages in the emergence of PTSD

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Physiological Explanations</th>
<th>Psychological Explanations</th>
<th>Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late 19th century</td>
<td>Physiological explanations</td>
<td>eg Railway Spine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Psychological explanations</td>
<td>eg Nervous Shock</td>
<td></td>
</tr>
<tr>
<td>Early 20th century</td>
<td>Physiological explanations</td>
<td>eg Shell Shock</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Psychological explanations</td>
<td>fragmented, cause-related syndromes eg Child Abuse Syndrome</td>
<td></td>
</tr>
<tr>
<td>Mid-20th century</td>
<td>Psychological explanations</td>
<td>DSM-I — Gross Stress Reaction (1952)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>predominates</td>
<td>DSM-II — Adjustment Reaction (1968)</td>
<td></td>
</tr>
<tr>
<td>1980-1994</td>
<td></td>
<td>POST-TRAUMATIC STRESS DISORDER</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DSM-III (1980)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DSM-III-R (1987)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICD-10 (1992)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DSM-IV (APA, 1994)</td>
<td></td>
</tr>
</tbody>
</table>

Source: IES, 1998

nervous shock (Rado, 1942; Page 1885, as described in Foa et al., 1989).

Physicians, however, preferred to give the disorder names which involved a description of the traumatic event and/or an element suggesting a physiological cause for the symptoms. For example, Railway Spine, Soldier’s Heart, Battle Fatigue, Shell Shock and War Neurosis.

The pattern of creating a ‘new’ disorder with a discrete name for each type of trauma continued into the mid-20th century, despite the symptomology being very consistent for all of the disorders. Examples include Post-Vietnam Syndrome, Child Abuse Syndrome and Battered Wife Syndrome.

This approach led to a confusing collection of different syndromes which falsely tie certain symptoms to a particular event, despite evidence that not all victims would develop the syndrome. The various syndromes overlapped with what is now called PTSD, but failed to connect the full range of symptoms to a generic ‘traumatic’ event.

As common ground was being sought, new names for human reactions to trauma and stress were developed by psychologists. For example, conditions called Traumatic Neurosis and Gross Stress Reaction (DSM-I), and Transient Situational Disturbance (DSM-II), were identified.¹

¹ DSM is the abbreviation for the Diagnostic and Statistical Manual of Mental Disorders, published by the American Psychiatric Association.
‘Post-Traumatic Stress Disorder’ was first established as a condition in 1980. It has been revised several times since then. The World Health Organisation also has its own definition of PTSD, published in its International Classification of Mental and Behavioural Disorders, known as ICD-10.

2.1.2 Old symptoms, new definitions

It can be seen that certain features of trauma-related psychological illness appear and reappear over time. For example, the fact that external rather than internal trauma may cause severe problems for survivors was noted by Erichsen in 1866; Cannon in 1914; and Kardiner and Spiegel in 1947.

The symptoms of PTSD fall into three groups. These can also be traced through the history of research into trauma-related illness.

The first group of symptoms, re-living or re-experiencing the event, were noted by (among others) Freud in 1917, and Kardiner and Spiegel in 1947. The second group of symptoms in the modern definition are those of general numbing and avoidance of reminders of the trauma. These symptoms were noted by Janet in 1889, and Lindemann in 1944.

Heightened awareness — for example, an exaggerated startle response — is the final part of the modern PTSD symptomology. This element appears in the works of Cannon in 1914/1939 and Kardiner in 1941.

It has been argued that PTSD came to general notice due to the plight of Vietnam War veterans. However, it can be seen that in previous work, the same symptoms were observed in different research populations, ie martial and non-martial. The next section goes on to examine the genesis of PTSD in more detail.

2.2 The genesis of PTSD

2.2.1 Early researchers’ theories of trauma

The earliest research into phenomena most clearly resembling modern day PTSD can be traced to the middle of the last century. Table 2.2 overleaf presents a synthesis of the majority of noted works (Kleber and Brom, 1992; van der Kolk, 1995; Wilson, 1995; Foa et al., 1989; and Weisäeth and Eitinger, 1991a).

2.2.2 Freud on traumatic events

Working at the same time and influenced by these writers, Freud developed his own psychological theories, which were to have a major impact on subsequent research information and conceptualisation of trauma.
<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
<th>Profession</th>
<th>Descriptor</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erichsen</td>
<td>1866</td>
<td>Physician</td>
<td>‘Railway spine’</td>
<td>Although ‘railway spine’ was not Erichsen’s description, it was the name by which the condition became famous. Erichsen identified certain symptoms following accidents: traumatic hystera, neurasthenia, hypochondriasis or melancholia. Erichsen considered this the result of concussion to the spine.</td>
</tr>
<tr>
<td>Eulenburg</td>
<td>1878</td>
<td>Physician</td>
<td>Psychic trauma</td>
<td>Psychic trauma was the reaction of outcry and fear following an extreme shock and physical injury.</td>
</tr>
<tr>
<td>Charcot</td>
<td>1880s</td>
<td>Psychiatrist</td>
<td>Traumatic hystera/ Choc Nerveux</td>
<td>Began with shock evaluated from a physical aspect but moved towards a psychological explanation over time. Charcot’s theories gave prominence to conversion symptoms or hystera. Unduly traumatic events lead to the development of a particular hystera: traumatic hystera.</td>
</tr>
<tr>
<td>Page</td>
<td>1883</td>
<td>Surgeon</td>
<td>Nervous shock</td>
<td>The first to isolate psychological reactions from physical injuries caused by catastrophes. Page proposed that symptoms of nervous shock were of psychological rather than physiological origin.</td>
</tr>
<tr>
<td>Oppenheim</td>
<td>1888</td>
<td>Neurologist</td>
<td>Traumatic neurosis/ Schreck Neurose</td>
<td>Oppenheim studied the neuropsychiatric effects of injuries and identified four associated conditions: hystera, neurasthenia, organic syndromes and traumatic neurosis. Oppenheim considered these conditions resulted from the effects of head injuries, i.e that the cause of the symptoms was of physical origin, namely molecular changes from electrical processes in the central nervous system.</td>
</tr>
<tr>
<td>Janet</td>
<td>1889, 1904 &amp; 1925</td>
<td>Physician</td>
<td>Psychological misery</td>
<td>Janet was the first to conceptualise the influence of traumatic events upon psychological functioning. Dissociation (i.e splitting off thoughts, actions or feelings from conscious awareness) was promoted as the key concept which explained symptoms. Overwhelming experiences may cause dissociation when the person fails to master the intense emotions generated. Unable to integrate these memories, the subject may develop symptoms of amnesia, narrowing of consciousness, obsessional preoccupations and somatic symptoms (i.e hyper-vigilance and numbing). These symptoms are the unconscious memories of the traumatic event. They are not recognised by the person as memories, although they continue to plague the individual.</td>
</tr>
<tr>
<td>Stierlin</td>
<td>1909 &amp; 1911</td>
<td>Researcher</td>
<td></td>
<td>Observed the survivors of a mining disaster, railway accident and natural disaster. Found that violent emotion and fright were the most important aetiological factors and that unfortunate social conditions and personal disposition were key indicators of neurosis.</td>
</tr>
</tbody>
</table>

*Freud’s conceptualisation of traumatic neurosis dominated thinking in the medical-psychiatric profession from about 1895 to the end of the Vietnam War era in the United States (1962-1975).*

Wilson 1995, p. 10

Freud revised and refined his theories surrounding the causes and classification of mental symptoms following traumatic events over a number of years. His work fluctuated in the extent to which traumatic events were seen as important in causing traumatic neurosis or hystera. His early research was influenced by Charcot and Janet (Kleber and Brom, 1992). A psychological explanation (hystera) for symptoms following traumatic events was proposed.
At around 1893, and working with Breuer, Freud refined his theory to propose that reactions to trauma could be distinguished from hysteria by looking at the nature of the stressor: a single shocking event caused traumatic neurosis, whereas hysteria was triggered by a number of partial traumata. A similar distinction between traumatic events reappeared in the more recent work of Terr (1991), although today the conditions and symptoms of each type of trauma are considered manifestations of one syndrome — PTSD.

In the final years of the 19th century, Freud proposed that neurosis was the result of stressors in childhood. Soon (by 1895), Freud identified child sex abuse as the cause of symptoms — the famous ‘Seduction Theory’ (Kleber and Brom, 1992).

By 1897, and for whatever reason, Freud decided that his theory of childhood abuse causing hysteria was incorrect. Instead, he proposed that memories of abuse were fantasy, and a product of an Oedipal desire (Kleber and Brom, 1992). Although he considered his patients’ reports of abuse to be fictitious, he believed that ultimately the distinction between fantasy and reality was unimportant. The emotional reaction to the ‘event’ was the source of the neurosis (Wilson, 1995).

Around the turn of the century, Freud appeared to shift away from a PTSD paradigm of neurosis to a one centred around intrapsychic fantasy (Wilson, 1995), and the number of references to traumatic events in Freud’s work declined after 1900 (Kleber and Brom, 1992). Wilson suggested the implications of this shift to an Oedipal model were:

- minimising the role of the external, event-based experiences, and, additionally:
- placing an emphasis on pre-morbid psychic functioning as an explanation of symptoms.

These were important influences on the thinking about trauma at the time. The shift in Freud’s paradigm led to the belief, codified in DSM-I, that traumatic events have transient and acute effects. Prolonged symptoms could be attributed to pre-existing mental conditions.

Trauma re-emerged as a theme in Freud’s work on World War I. At this time, Freud returned to his initial ‘psycho-energetic stimulus-response’ model. This differed from his work at the turn of the century in that it recognised (with war neuroses) that the threat to the individual or ‘ego’ is external, eg physical injury, and therefore the nature of the event became more significant in understanding neuroses.

Wilson analysed letters in Freud’s Introductory Letters on Psychoanalysis, of 1917. He suggests that the text implied that Freud:
• recognised that external stressors created illness. For example, he mentions World War I, railway accidents, physical injuries, fatal accidents, and child abuse. Also, these events triggered traumatic neurosis with ‘special frequency’.

• believed traumatic neuroses were not the same as spontaneous neuroses, ie that traumatic neuroses were a psychological reaction to an external event; and

• had identified the core PTSD symptom clusters 70 years before they were spelled out in DSM-III-R, ie intrusive imagery, psychological hyperactivity and the re-living of events.

Trauma reappears as a central theme in Freud’s work towards the end of the 1920s. Beyond the Pleasure Principle was published in 1928 and was built on the stimulus barrier theory. This work developed the idea of the protective shield of the ego. Traumatic events were those external stressors strong enough to break through the protective shield and cause injury by flooding the mental apparatus with large amounts of stimulus (Wilson, 1995).

Freud now saw trauma as:

• an external stressor, ie an event which overwhelms normal ego functioning

• involving a change in the steady state: disequilibrium

• causing a reduction of ego defensive and coping capacity

• involving a problem of mastery — other stressors can then take on traumatic proportions, suggesting the possibility of long-term PTSD or other co-morbid conditions (Wilson, 1995).

All of these elements are found in the initial definitions of PTSD. Wilson proposes that not only did Freud grasp the essence of PTSD in the early 20th century, but his concept of traumatic neurosis was essentially rewritten as the DSM-I category, ‘Gross Stress Reaction’.

However, although Wilson stated that:

‘Freud’s contribution to understanding PTSD-like states was in recognising the power of trauma to change ego states and adaptive behaviour’.

Kleber and Brom point out that the word ‘traumatic’ does not appear consistently in Freud’s later work. They suggest this is evidence that Freud was still struggling to understand the nature and effects of traumatic events, and how they related to other neuroses.

Nevertheless, Wilson maintains that it was Freud’s perspective which influenced the early PTSD paradigm. As a result, pre-morbid determinants (pre-existing conditions) became a primary consideration, while the nature, magnitude and social-historical context of the trauma event became less important in
understanding reactions and symptoms. Whatever the source, early support for this idea shaped later definitions of PTSD.

2.2.3 From World War I to the Vietnam era

Despite the work of Freud and the other scientists on neurosis, for the first half of the 20th century physical explanations for reactions to traumatic events were generally preferred.

During most of World War I, an organic cause for the symptoms displayed by soldiers was promoted, for example Shell Shock. Mott saw Shell Shock as the direct neurocortical consequence of heavy artillery bombardment. The brain was damaged by the displacement of air, carbon monoxide poisoning, and flying shrapnel (Williams, 1992; and Kleber and Brom, 1992).

Organic causes of Shell Shock were preferred, according to Ahrenfeld (1958; as discussed in Weisæth and Eitinger, 1991a) because a psychological explanation of the condition did not fit with the idealised representation of the British soldier as a mentally fit hero, free from blemish. A physical injury was a more acceptable explanation for symptoms.

In clinical settings, the use of the term ‘Shell Shock’ to explain psychological symptoms began to decline around 1917, when it was recognised that soldiers not exposed to heavy artillery also became ill (Weisæth and Eitinger, 1991a; Kleber and Brom, 1992). 1917 marked the start of mental treatment for sufferers (Weisæth, and Eitinger, 1991a). Gersons and Carlier (1992) described the treatment (involving hypnosis) as following Janet’s principles (see Table 2:2).

The gradual shift in emphasis from physical to psychological explanations for reactions to trauma can be seen in the work of Cannon, who offered a dual physiological and psychological explanation in 1914 and 1939 (Gersons, 1992). Cannon described how a person’s reaction to impending danger was displayed in fighting and escaping behaviour. This behaviour could be described in both a psychological and physiological sense. Cannon thought that trauma disrupted the body’s equilibrium, called homeostasis.

Later, Selye (1975; also discussed by Gersons) took this idea further and suggested that the area between normal equilibrium, and a physical and mental breakdown (heterostatis) was the battleground where the stressful event was dealt with. The individual, unable to win the battle with the stressor, is stuck in heterostatis. Both theories seek to explain the irritability and other symptoms associated with PTSD, which may be viewed as psychological reactions to threats, experienced as fear.

Psychological explanations for trauma-related mental and physical symptoms gradually came to dominate research. This
can be seen, for example, in Kardiner’s 1941 work, in which a psychological explanation of the effects of an external stressor was offered. Kardiner differentiated between traumatic neurosis and other neuroses on the basis that a traumatic neurosis was a ‘physioneurosis’, related to an actual threat. Kardiner considered that patients with traumatic neurosis remained on constant alert for an environmental threat, and this displayed itself as chronic overarousal (Kleber and Brom, 1992).

The effects of external stressors were further explored in 1945 by two sets of researchers — Grinker and Speigel, and Fenichel. All suggested that traumatic neurosis was not unique as a psychological disease, as it was similar in cause and effect to all other neuroses. Traumatic neurosis was distinguished only by the gravity, acuteness and nature of the events. Further, Grinker and Speigel suggested that personal characteristics and experiences affected the reaction to the trauma.

Shortly after World War II, Kardiner and Speigel (Williams, 1992) proposed that combat exhaustion was the attempt by traumatised soldiers to restore their self integrity through defence mechanisms and compensatory efforts. Kardiner and Speigel noted that these attempts failed, resulting in symptoms such as persistent startle response, aggression, irritability, nightmares and a fixation with the traumatic event. The functioning of the central nervous system was thought to be permanently changed as a result of the traumatic neurosis (Brett et al., 1988).

World events influenced progress in understanding PTSD-like illness. At the end of World War II ‘combat exhaustion’ was seen in large numbers of ex-servicemen (Williams, 1992), and in the aftermath of the War, the role of a sexually charged or other psychic conflict (as proposed by Freud) generally appeared less significant. The emphasis shifted to investigating external and recent trauma rather than any predisposing characteristics. Traumatic neurosis was therefore treated differently to the approach of traditional psychopathology (Kleber and Brom, 1992).

Green et al. (1985) proposed that the link between trauma and subsequent psychological consequences was a relatively new idea. She traced the genesis of this idea to the follow-up studies of survivors of concentration camps and Japanese nuclear explosions. These studies demonstrated that the previously ‘normal’ individual could suffer from disorders following severe trauma. Pointing to a World War II combat veterans study by Saul and Lyons (1961), Green et al. identified research which looked at the fit between the person and their environment, as a method of understanding symptoms.

Outside of the martial arena, Lindemann (1944) assessed the psychological consequences upon the survivors of a night club fire in which 500 people died. Influenced by Freud’s 1917 work, Trauer und Melancholie, and by Cannon’s idea of homeostasis,
Lindemann described the variety of grief symptoms. He labelled the disorder observed as 'acute grief syndrome' and considered there to be a direct link between the trauma and grief symptoms. The syndrome was noted in people who had no previous psychic problems and who had functioned normally in the past.

Gersons suggests Lindemann's work posed a series of interesting questions, namely: 'what is the limit of a normal reaction to a traumatic situation?' (he suggested four to six weeks); 'what role does the social environment play in enabling people to endure crisis?'. These questions are still pertinent.

Within this discourse, further definitional issues emerge. Firstly, can traumatic events be seen as those at one end of the scale of life events, or is there something about certain occurrences which differentiates them from all other events, eg the threat to life, as per Gruber and Spiegel? If events lie upon a scale, then how is an arbitrary decision about where the line is drawn between traumatic stressors and other unpleasant events avoided?

Secondly (and following on from point one) Green et al. considered that work like that of Saul and Lyons led to an unresolved confusion about the relative importance of the severity of the trauma, in comparison to the presence and detection of a predisposing weaknesses in the patient.

Both of these issues have been addressed with variable success in the modern definitions of PTSD. They are discussed in Section 2.4.

2.2.4 'Post-Traumatic Stress Disorder' emerges

Post-Traumatic Stress Disorder was first listed by that name in the Diagnostic and Statistical Manual of the American Psychological Association in 1980 — DSM-III. In the two previous editions of the manual, PTSD-type disorders were best addressed by the categories of Gross Stress Reaction (DSM-I) and adjustment disorder of adult life (DSM-II).

DSM-I: Gross Stress Reaction (1952)

GSR was part of the category 'Transient Situational Personality Disorders' and relied heavily on Freud’s late 1920s work. Both the name and the narrative for this condition implied that acute reactions to unusual stress would resolve quickly. If symptoms did not recede quickly, then an underlying pre-morbid condition and alternative diagnosis was required. Also, the narrative implied that rapid intervention could resolve the symptoms, no matter how stressful the event had been.

The description of the stressor suggested that the condition was caused by great, unusual or intolerable stress, such that previously ‘normal’ personalities would be overwhelmed (in line with
Freud’s thinking on penetrating the shield of ego and overwhelming normal functioning).

As Brett et al. (1988) noted, this classification was unusual among the mental diseases, in that the aetiology (cause) was the primary defining feature, rather than the symptoms.

**DSM-II: Adjustment Reaction to Adult Life (1968)**

In 1968, the second edition of DSM was published with post-traumatic reactions described under Adjustment Reaction to Adult Life. The 1968 changes in the diagnostic and theoretical scheme for disorders related to catastrophic stress were considered puzzling, regressive and to reflect the ‘paucity of hard-headed thinking and empirical enquiry’ (Wilson, 1995).

Although it was implicit that traumatic events could cause a psychological reaction rather than embody the principles involved, the DSM committee produced a long appendix, listing and categorising traumatic events. No indicating symptoms were categorised, just the types of event, of which a bizarre three were chosen as illustrative — unwanted pregnancy, military combat and death row.

Again, there was an emphasis on the temporary and reactive aspects of the disorder (Gersons and Carbier, 1992), and the aetiology remained the primary defining feature (Brett et al., 1988).

As with DSM-I, if symptoms of trauma did not resolve themselves quickly then the patient would be given a non-trauma related diagnosis to identify the underlying pre-morbid condition (Williams, 1992 and Green et al., 1985).

**DSM-III: Post-Traumatic Stress Disorder (1980)**

Although initially a controversial inclusion in the third edition of the APA’s manual, Post-Traumatic Stress Disorder was generally welcomed by mental health workers (see, for example, Friedman, 1996a; Green et al., 1985). It was included as an anxiety disorder (Wilson, 1995) and it has been suggested that its inclusion followed from the numbers of Vietnam veterans reporting symptoms (often with delayed onset) and the increasing numbers of victims of natural and manmade disasters (Goodwin, 1997). Like DSM-I and DSM-II, the emphasis remained on the traumatic event rather than pre-morbid conditions.

The very name of the disorder was considered significant by Wilson (1995): post-traumatic means after injury. This title recognises a change in the state of well-being and associated patterns of reactions/symptoms.
The traumatic event was now described in the most generic terms, i.e., a recognisable stressor which would evoke significant symptoms of distress in almost anyone. Hence, the magnitude of the stressor was acknowledged as important (evoking: ‘significant symptoms in almost everyone’). Friedman (1996a) noted that the concept of trauma was associated with catastrophic stressors rather than very painful stressors that ‘constitute the normal vicissitudes of life’, i.e., there is an implicit difference between traumatic and other stressors.

PTSD remained the only diagnosis where aetiological considerations were central to the diagnosis (Brett et al, 1988). However, in this edition of the manual, there was also a significant move by the authors away from descriptions of the traumatic event to descriptions of the impact upon individuals.

Three categories of symptoms were noted:

- re-experiencing
- numbing, and
- other (miscellaneous) symptoms.

To fulfil the diagnostic criteria, a patient had to display four symptoms from across the three groups (including one from each). Brett et al. (1988) considered that the first two followed from Freud’s observation of the dual response to trauma, namely attempts to remember or repeat, and attempts to avoid or defend against the memories. Wilson (1995) also saw Freud’s fingerprints on the criteria, and considered the criteria reflected the systemic impact of trauma on emotional expressiveness, cognitive processes, motivation, etc.

It took over a century for a comprehensive description of post-traumatic stress reactions to emerge.

However, the same groups of symptoms (avoidance, re-experiencing and increased arousal), albeit with different explanations, were noticed by various researchers over this time. It is only comparatively recently that the cause of these symptoms has been agreed to be psychological rather than physical trauma.

2.3 Current definitions of post-trauma reactions

2.3.1 Evolution — DSM-III-R, DSM-IV (APA 1994), and ICD-10

DSM-III-R was published in 1987 and PTSD remained (despite much debate) in the anxiety disorder section. Wilson (1995) has suggested that the controversy surrounding the inclusion of PTSD in DSM-III resulted in much research and clinical work. The revisions were based upon this.
The diagnostic categories were increased to five:

1. Exposure to an event outside of the range of usual human experience, which would be distressing to almost everyone.
2. Re-experiencing symptoms.
3. Avoidance/numbing symptoms.
4. Increased arousal symptoms.
5. Symptoms of one month or longer duration.

The trauma

The wording of the trauma statement underwent an important change, namely that the trauma should be outside of the range of usual human experience. Wilson (1995) suggested that the new trauma statement recognised that traumatic events could be placed on a stress continuum, and it therefore allowed a much wider range of possible causes. What is more, the definition of exposure to a traumatic event now included not just being subject to a traumatic event oneself, but also witnessing one, or learning about a trauma affecting a close (family) member.

Symptoms

Some of the symptoms which had appeared in the miscellaneous category in DSM-III were deleted from the DSM-III-R diagnosis (eg survivor guilt) as they were not present in all cases. Others were re-categorised as either re-experiencing or avoidance/numbing symptoms. The remaining symptoms listed in the miscellaneous category were all associated with increased arousal. Additionally, each category of symptom types was expanded to include more examples of re-experiencing avoidance and arousal. Brett et al. considered that these changes resulted in a more parsimonious model, which addressed previous inconsistencies and duplications.

In total, 17 symptoms were now listed within the three symptom categories, of which the patient must display six, including at least one from each of the three clusters. Additionally, the definition specified that none of the symptoms must have existed before the trauma.

Time considerations

The final diagnostic category made the requirement that symptoms needed to be present for at least one month. This time period was considered entirely arbitrary by Gersons and Carlier (1992). However, other researchers suggested this time period was included to differentiate between transient grief or adjustment reactions, and PTSD (Brett et al., 1988; and Wilson, 1995).
No division was made between acute and chronic PTSD due to the 'lack of a substantive rationale for maintaining, and a clear proposal for describing, the distinction' (Brett et al., 1988). However, the possibility of delayed onset of the disorder was allowed.

Following the inclusion of PTSD in the American Psychiatric Association’s Handbook, the World Health Organisation expanded their classifications of acute reaction to stress and adjustment disorders to include a more detailed description of stress responses.

2.3.2 International Classification of Diseases (ICD-10)

In 1992, the World Health Organisation published their Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines (ICD-10). A new section (F43) was included — reaction to severe stress, and adjustment disorders, which included PTSD. Hence, the condition became available for diagnosis world-wide (Weisæth and Eiting, 1991a).

In ICD-10, the definition of trauma was couched in looser terms — an exceptionally threatening or catastrophic event which would cause pervasive distress in almost everyone. The symptomology was arranged in a very similar way to DSM-III-R, ie three groups of symptoms.

The ICD-10 descriptions also included the possibility of enduring personality change (ie of three or four years duration) as a result of trauma (Kleber and Brom, 1992; Weisæth and Eiting, 1991). Delayed and protracted versions of the disease were also available as a diagnosis. Shortly after the introduction of ICD-10 a revised version of the DSM definition of PTSD was introduced (DSM-IV, APA, 1994).

2.3.3 DSM-IV (APA, 1994)

The DSM-IV (introduced in 1994) displayed minor changes from DSM-III-R (Wilson, 1995) in the definition of trauma and the addition of symptoms and additional diagnostic criteria. (The text of the diagnostic criteria are reproduced in Appendix 1.) The changes are assessed in turn below.

Definition of trauma

An important change to the definition of trauma was that the phrase 'outside the range of usual human experience' was dropped from the DSM-IV (APA, 1994) diagnostic criteria. Instead, the criteria now had two elements to the identification of trauma in the diagnosis of PTSD. Firstly, the individual must have experienced or witnessed a traumatic event, and secondly,
they must have responded in an intensely fearful, helpless or horrified manner.

In other words, the emphasis shifted from the nature of the event, to the reaction of the individual.

Additional diagnostic criteria

The three main symptom groups (re-living/re-experiencing, numbing and avoidance, hyper-vigilance) were maintained, but there was a second change with particular significance to this study of workplace PTSD. Criterion F was added, in which it was stated that the disturbance to behaviour caused by the trauma would result in:

'. . . clinically significant distress or impairment in social, occupational, or other important areas of functioning.'

DSM-IV(APA, 1994) — emphasis added

It was always implicit in previous definitions of PTSD that the symptoms were severe enough to cause this type of impairment. However, this was the first time that occupational function was mentioned directly.

Other minor changes involved the re-introduction of the acute and chronic forms of the disorder in the manual (Wilson, 1995). The condition is labelled ‘acute’ if the symptoms last for less than three months. Alternatively, if symptoms persist for three months or more the PTSD is described as ‘chronic’.

The DSM-IV (APA, 1994) guidelines also contained two additional pieces of information. Firstly, there is the acknowledgement that the nature of the trauma may impact on the severity of the symptoms. The authors suggested that if the trauma was of human design (eg torture) then symptoms may be especially severe and long lasting.

The second issue surrounds proximity to the traumatic event. In DSM-IV (APA, 1994) an individual may be traumatised by direct personal experience or witnessing of a catastrophic event, and also by learning about such an event affecting a close associate or family member.

Neither of these issues are mentioned in the ICD-10 descriptions.

A comparison of the main features of the two current definitions of PTSD is presented in Table 2:3 overleaf.
<table>
<thead>
<tr>
<th></th>
<th>DSM-IV (APA, 1994)</th>
<th>ICD-10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Definition of traumatic event</td>
<td>Threat of death/personal injury etc. to self, loved one or learning about such a threat/incident AND a hornified/fearful/helpless response to the incident.</td>
<td>Stressful event or situation of exceptionally threatening or catastrophic nature which causes pervasive distress.</td>
</tr>
<tr>
<td>The ‘Clapham omnibus' test?</td>
<td>Dropped since DSM-II-R</td>
<td>Requires that the trauma be likely to cause pervasive distress in almost anyone.</td>
</tr>
<tr>
<td>(ie would the event cause</td>
<td>States that pre-existing mental disorders may influence the course of the disorder but PTSD can affect anyone. However, symptoms such as anxiety and increased arousal are only ‘counted’ as present if they were not noted before the traumatic event.</td>
<td>States that predisposing factors or a previous history of neurotic illness may lower the threshold but will not be sufficient or necessary to explain the disorder.</td>
</tr>
<tr>
<td>distress to most reasonable people?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-disposition?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continued v one-off trauma</td>
<td>Not mentioned explicitly although text refers to ‘an event’ in diagnostic features but ‘an event or events’ in diagnostic criteria.</td>
<td>Explicitly states that the stressful event may be short or long lasting. Refers to impact of acute severe stress or continued trauma.</td>
</tr>
<tr>
<td>(Type 1 and type 2 traumata)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of disorder</td>
<td>Requires symptoms to be present for at least one month for diagnosis. Suggests duration in excess of 12 months is not uncommon.</td>
<td>No minimum period for displaying symptoms is specified. Suggests a small proportion of patients will suffer chronic PTSD lasting many years.</td>
</tr>
<tr>
<td><strong>Diagnosis features</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response of subject to trauma</td>
<td>Essential criterion for diagnosis: subject must react with fear, helplessness, anxiety, etc.</td>
<td>Not mentioned.</td>
</tr>
<tr>
<td>Delay before onset</td>
<td>Possibly, delay may be months or years although symptoms usually begin within three months of the traumatic event.</td>
<td>Normal latency period of a few weeks to months. However, PTSD not generally to be diagnosed if onset more than six months after the traumatic event. After six months, a diagnosis may still be possible if there are no better alternative diagnoses and PTSD criteria are otherwise met.</td>
</tr>
<tr>
<td>Life-impact</td>
<td>Disturbance causes distress, impairment of social, occupational or other functioning. Such impairment is essential to the diagnosis.</td>
<td>An enduring personality change is considered a possible outcome.</td>
</tr>
<tr>
<td><strong>Symptoms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clusters</td>
<td>1 Persistent re-experiencing of the traumatic event</td>
<td>1 Repetitive and intrusive recollections or re-enactment</td>
</tr>
<tr>
<td></td>
<td>2 Avoidance of stimuli associated with the event and numbing.</td>
<td>2 Emotional detachment/numbing/avoidance</td>
</tr>
<tr>
<td></td>
<td>3 Increased arousal</td>
<td>3 Mood disorder and behavioural abnormalities</td>
</tr>
<tr>
<td>Essential to diagnosis?</td>
<td>At least one symptom from group 1 must be present.</td>
<td>Symptoms from group 1 must be present.</td>
</tr>
<tr>
<td></td>
<td>Three or more symptoms from group 2 must be present.</td>
<td>Symptoms from group 2 are often present but not considered essential to the diagnosis.</td>
</tr>
<tr>
<td></td>
<td>Two or more symptoms from group 3 must be present.</td>
<td>Symptoms from group 3 are not essential to the diagnosis.</td>
</tr>
</tbody>
</table>
ICD-10 and DSM-IV (APA, 1994) are the two alternative diagnostic tools available to practitioners working with people exposed to traumatic events. One of the most important aspects of the current definitions is that they go beyond the symptomology and recognise the impact of the condition upon both the individual and those they must interact with. In this respect, and of particular relevance to this review, occupational functioning is now specifically mentioned in DSM-IV (APA, 1994).

The current definitions are the result of many research studies, and no doubt both the definitions of PTSD and diagnostic criteria will continue to be revised in the light of continuing research.

With the introduction of PTSD into the International Classification of Diseases, the diagnosis became available world-wide. However, the slightly later DSM-IV (APA, 1994) definition is more rigorous in terms of both the definition of trauma and the qualifying symptomology. It is important to be aware of which of the various definitions are being used when a diagnosis of PTSD is proposed, or when considering reports of the proportion of people who suffer from the disorder.
3. Diagnosis and Measurement

As the literature on the prevalence of PTSD will show, not everyone who is exposed to a trauma will develop PTSD. The diagnostic criteria allow for other reactions to extreme events, and these are discussed in this chapter.

Once familiar with the diagnostic criteria for PTSD and related disorders, it is useful to consider ways of measuring who has the condition. This forms the second part of this chapter and provides a background for the work presented in Chapter 4, about the prevalence of PTSD in the world at large, and in specific occupations.

3.1 When a reaction to trauma isn’t PTSD

DSM-IV (APA, 1994) offers other potential diagnoses to practitioners faced with people who have suffered extreme trauma. In addition to PTSD, Acute Stress Disorder and Adjustment Disorder are available within the scheme. However, the guidelines state that:

'Some symptomology following exposure to an extreme stress is ubiquitous and often does not require any diagnosis.'

(DSM-IV, p. 431)

3.1.1 Acute Stress Disorder

Given that some reaction to a traumatic event is to be expected, ASD should only be considered if the symptoms:

• last at least two days, and
• cause clinically significant distress or impairment to social, occupational or other necessary functions.

From this, it is possible to infer that reactions to traumatic events which last for very short periods, eg two days, are normal reactions.

Essentially, the symptomology of ASD closely mirrors that of PTSD, except for the duration of the disorder. If the symptoms of ASD persist for longer than one month, the diagnostic guidelines suggest a diagnosis of PTSD should be considered.
3.1.2 Adjustment Disorder

A clarification of the relationship between PTSD and Adjustment Disorder, is provided in the *Differential Diagnosis* for PTSD:

> 'In Post-Traumatic Stress Disorder, the stressor must be of an extreme (ie life threatening) nature. In contrast, in Adjustment Disorder, the stressor can be of any severity. The diagnosis of Adjustment Disorder is appropriate both for situations in which the response to an extreme stressor does not meet the criteria for Post-Traumatic Stress Disorder (or another specific mental disorder) and for situations in which the symptom pattern of Post-Traumatic Stress Disorder occurs in response to a stressor that is not extreme (eg spouse leaving, being fired).'

(DSM-IV, p. 427)

In other words, Adjustment Disorder provides a 'catch all' diagnosis where either:

- the response to a traumatic event lasts longer than two days and does not fulfil the diagnostic criteria for Acute Stress Disorder, or
- PTSD symptoms are observed in response to a less extreme stressor.

3.1.3 Differentiating between the three

While all three (PTSD, Acute Stress Disorder and Adjustment Disorder) require the presence of a psycho-social stressor, PTSD and Acute Stress Disorder are characterised by the presence of an extreme stressor and a specific constellation of symptoms. In contrast, Adjustment Disorder can be triggered by a stressor of any severity and may involve a wide range of possible symptoms.

3.1.4 Complicating factors

Blank (1994) emphasised that when making a differential diagnosis, the practitioner needs to consider the possibility that:

- the individual has other disorders with overlapping features, or,
- has PTSD co-existing with other unrelated disorders, or
- that the major features (eg anxiety, depression or substance abuse) have masked the underlying PTSD, leading to a delay in detecting the condition and/or misdiagnosis.
3.2 Towards the assessment of traumatised people

From the many studies focusing on post-incident stress, it is clear that there are several methods of measuring strain and related psychiatric symptoms. The following section provides a brief overview of the methods of assessment.

There are three main ways of measuring who has PTSD:

- with self-report questionnaires
- through structured interviews
- objective measures, including psychophysiological measurement.

3.3 Self-report measures

In order to diagnose sufferers of PTSD, practitioners or researchers may ask people to answer a questionnaire about their general mental well-being, and/or about their experience of particular symptoms associated with PTSD. This is commonly done through self-report questionnaires.

When assessing the value of different self-report measures, there are a number of indicators to consider:

- test-retest reliability (ie how often the same result is obtained when the test is repeated)
- internal consistency (ie the extent to which items in the same scale are measuring the same thing. This is usually expressed statistically through the Alpha coefficient). An alpha value of 1.0 is the perfect result, only obtainable in theory. In practice, an alpha value of 0.6 to 0.7 is the lowest acceptable value.
- sensitivity (ie is the test able to pick up very low levels of symptoms in individuals and populations?). This is expressed as a percentage; the higher the value, the better the test performs.
• specificity (ie how well the test differentiates PTSD from other mental health problems). This is also expressed as a percentage; the higher the value, the better the test performs.

• how well a test correlates with other PTSD measures.

Allen (1994) reviewed recent knowledge of the psychometric assessment of PTSD, and commented on a number of methodological and epidemiological issues. The following represents a summary and extension of the material presented by Allen.

In general, the ability of these tools to predict who and how many people will develop PTSD seemed to achieve better results among groups with greater concentrations of PTSD sufferers. A typical example of this is found in studies of combat veterans. This causes problems when the tests are used among other populations where the base rate of PTSD sufferers is lower. This is because tests with anything less than perfect ‘specificity’ (ie <100 per cent) will generate some false positives (ie suggest that certain individuals have PTSD when they do not). When the number of people in the population being studied with PTSD is already quite small, only a few false positives mean that the test’s rate for identifying true cases is low.

Allen also noted that for all self-report instruments, there is the problem of faking. People may give false answers for any number of reasons, but particularly if they are pursuing a compensation claim. Alternatively, those exposed to trauma may exaggerate their symptoms in order to gain access to help or treatment, or simply to please the questionnaire administrator. For all these reasons, Allen concludes that self-report measures ‘should be used cautiously in forensic and clinical settings’ (p. 331).

To counter these problems, clinicians tend to use a mixture of assessment tools, including general as well as specific PTSD measures. One tool alone is not sufficient to make a reliable diagnosis. Allen reported Kulkia et al.’s (1991) advocacy of assessing PTSD from several methods, multiple sources and at different points in time.

3.3.1 General indicators of mental health

One of the most commonly used is The General Health Questionnaire (GHQ; Goldberg and Williams, 1988). It was designed as a self-administered screening test aimed at detecting psychiatric disorders among respondents in community settings and non-psychiatric clinical settings. The GHQ focuses on two sorts of phenomena:

• inability to continue to carry out one’s normal ‘healthy’ functions, assessed with reference to cognitive functioning, happiness, and capability
• appearance of new phenomena of a distressing nature, including experience of strain, depression, low self-esteem, and also sleep problems.

The GHQ is often used in British and Commonwealth studies and clearly is designed as a general indicator of clinical status rather than specifically detecting any given syndrome. The GHQ detects recent changes (ie over the last four weeks compared to ‘usual’). The GHQ is rarely used alone. More often it is used in conjunction with other PTSD specific measures (eg 3.4.2 to 3.4.5) to provide general information on the population being studied.

There are a number of other similar questionnaires, including:

• Beck’s Depression Inventory (BDI; Beck et al., 1979)
• Spielberger’s State Anxiety
• Manifest Anxiety Scale
• Brief Symptom Inventory (BSI; Derogatis and Melisaratos, 1983)
• Symptoms Check List (SCL-90).

These represent the measures most commonly used in studies of PTSD. However, while they can indicate that an individual has a problem, they cannot indicate a reaction, or a specific clinical diagnosis of a disorder.

3.3.2 The Impact of Events Scale

The Impact of Events Scale (IES; Horowitz et al., 1979; Zilberg et al., 1982) was the first measure of trauma related symptoms and remains one of the most commonly used questionnaires in studies of post-incident reaction. It focuses on avoidance and intrusive experiences, does not assess the wider range of PTSD symptoms identified in DSM-IV, and hence cannot indicate diagnostic status.

The respondent rates the frequency of occurrence of 15 symptom statements, usually over the past week. The IES correlates well with other PTSD measures, has acceptable internal consistencies for the two scales (alpha=.78 for intrusion and .82 for avoidance symptoms) and has a test-retest reliability of .89 for symptoms of intrusion and .79 for avoidance.

Adequate normative information (ie what a particular score means for that group of people) for the IES is limited, though some recent work has identified its utility as a dichotomous indicator of PTSD symptoms (see Neal et al., 1994, below).

3.3.3 Minnesota Multiphasic Personality Inventory (MMPI)

Two approaches have been adopted with the MMPI:
• the development of special PTSD sub-scales, and
• a clinical scale code-type analysis.

The PK-MMPI (Keane PTSD sub-scale; see Keane et al., 1984; Litz et al., 1991) is a 49 item sub-scale which has typical correlations with DSM-III symptoms of 0.55-0.69 (Watson et al., 1990). This test also scored well for sensitivity (0.72) and specificity (0.68).

3.3.4 Mississippi Scale for Combat-Related Post-Traumatic Stress Disorder (M-PTSD)

A 35 item, Likert scale assesses DSM-III PTSD symptoms (Keane et al., 1988). It correlates .65 with Structured Clinical Interview for DSM-III-R (another tool, discussed below) diagnoses of PTSD and has high test-retest reliability (.97), internal consistency (alpha=.94), sensitivity (.93) and specificity (.89). Allen concluded that this ‘remains a reliable, valid measure for use with a relatively high PTSD base rate population’ (p. 336).

3.3.5 Penn Inventory (Hammarberg, 1992)

A 26 item scale, assessing DSM-III-R symptoms giving continuous measures of degree, frequency or intensity. Validated on civilian and military samples, it has high internal consistency (alpha=.94), test-retest reliability (r=.96), sensitivity (.90) and specificity (1.00 on civilians, though .61 within a military sample). Concurrent validities are r=.72 with the IES and r=.85 with the M-PTSD. Allen noted that ‘the Penn Inventory appears to be an excellent PTSD assessment instrument for both clinical and research applications and supports its use in bridging the gap between combat-related and civilian PTSD. However, Foa (1997) has suggested that its validity in other than veteran populations is not yet known.

3.4 Structured interviews

3.4.1 Diagnostic Interview Schedule (DIS) — Robin & Helzer (1985)

According to Watson et al. (1994):

‘The DIS structured interview PTSD module begins by requesting a list of experiences which might qualify as traumas. It then asks the subject whether those events led to any of 17 DSM-III-R (APA, 1987) stress disorder symptoms.’

3.4.2 Clinician-Administered PTSD Scale (CAPS; Blake, 1994; Blake et al., 1990)

This is composed of seventeen questions assessing DSM-III-R symptoms. Subjects are asked about their lifetime as well as the
current presence of symptoms. CAPS also explores depression, guilt, anxiety, homicidality and suicidality which can often be associated with PTSD. It measures both diagnosis and the severity of symptoms but is timely to administer (Foa, 1997).

3.4.3 Structured Clinical Interview for DSM-III-R (SCID; Spitzer et al., 1990)

This is the most widely used measure of post-incident reaction. Foa (1997) describes it as the gold standard against which other measures are compared. Keane et al. reported that when different psychologists asked this set of questions of the same people, there was a very high level of consistency in their diagnosis. This tool also tends to give the same answers as a number of other measures, such as M-PTSD, IES and PK-MMPI, which suggests it is a reliable method of diagnosing PTSD. However, a trained psychologist is required to administer this interview and the severity of symptoms in not measured.

3.4.4 Post-Traumatic Stress Disorder Interview (PTSD-I; Watson et al., 1991)

This tool was designed to be administered by non-clinicians. The questions related to DSM-III-R symptoms. It begins with the subjects being asked to list their catastrophic experiences, which are evaluated by the examiner for severity and rarity, to determine whether they qualify as traumas. Then the subjects rate themselves on each of 17 seven point severity/frequency Likert scales describing DSM-III-R criteria. Again, different interviews generally come to the same conclusions about who has PTSD, when measured, and the answers are generally the same as those generated by the Diagnostic Interview Schedule.

3.4.5 How useful are these interviews?

Allen notes that a common problem with all structured interviews as a measuring method is the resource costs, especially when a clinician is needed to administer the instruments. This tends to mitigate against their use in large-scale research surveys, although would not be a problem used in a clinical or forensic setting.

Neal et al. (1994) examined the convergent validity of measures of Post-Traumatic Stress Disorder (ie how well the answers matched) in a sample of 70 British military and civilian patients meeting DSM-III-R criteria (assessed by CAPS-1). Three scales were assessed against the CAPS-1 assessment: the IES, the PTSD scale of the MMPI, and the SCL-90. All of the measures produced significant correlations with CAPS-1 scores, though the IES was reported as the most useful dichotomous measure. If a cut-off score of 35 was used, then the IES test produced a misclassification error rate of 11 per cent (compared to error
Table 3.1 Measures and diagnostic tools — summary

<table>
<thead>
<tr>
<th>Tool</th>
<th>Abbreviated to</th>
<th>Type of measure</th>
<th>Aims to measure</th>
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<tbody>
<tr>
<td>General Mental Health</td>
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| General Health Questionnaire | GHQ | Self-report | Clinical Status, or 'caseness'
| Beck's Depression Inventory | BDI | " | eg the ability to function normally
| Spielberger's State Anxiety | — | " | Distressing symptoms
| Brief Symptom Inventory | BSI | " | |
| PTSD | | | |
| Impact of Events Scale | IES | " | Avoidance & intrusion symptoms only
| Keane PTSD Sub-scale of the Minnesota Multiphasic Personality Inventory | PK-MMPI | " | Many, but not all, DSM-III-R symptoms
| Mississippi Scale for Combat Related PTSD | M-PTSD | " | DSM-III symptoms in Vietnam combat veterans
| Penn Inventory | — | " | DSM-III-R symptoms
| Diagnostic Interview Schedule | DIS | Structured interview | Exposure to trauma and DSM-III-R symptoms
| Clinician-Administered PTSD Scale | CAPS | " | DSM-III-R symptoms and other psychological dysfunction
| Structured Clinical Interview for DSM-III-R | SCID | " | DSM-III-R symptoms
| Post-Traumatic Stress Disorder Interview | PTSD-I | " | Exposure to trauma and DSM-III-R symptoms

Source: IES/Adapted from Allen (1994)

rates of 19 per cent and 21 per cent for the MMPI-PTSD and the SCL-90 respectively).

Watson et al. (1994), tested the accuracy of the PTSD-1, the DIS-PTSD, the MMPI-PTSD and the Mississippi Scale for combat-related PTSD, against each other. They found that the PTSD-1 and the Mississippi Scale tended to produce the same results as other PTSD measures. When Watson et al. (1994) divided the results into simple 'yes, this person has PTSD'/'no they don't' answers, they found that the DIS was the best method of detecting who had PTSD.

3.5 Objective measures

Another way of determining who has PTSD is to apply objective tests which aim to assess how an individual understands the world. Allen describes a number of measures including the Stroop Interference Task and Cognitive/Neuropsychologic Measures (eg Weschler Adult Intelligence [WAIS-R]) as providing the possibility of 'objective' measurements of PTSD. However, there are a number of significant problems in the interpretation of such measures, and this is felt to be an area for which further research would be essential to develop practical tests.
Psychophysiologic measures attempt to assess who has PTSD by looking at physical manifestations of the disorder. Allen concluded that monitoring heart rates and skin conductivitiy was a good way of picking out PTSD sufferers from those with other problems, but these techniques may miss up to one-third of PTSD cases.

In conclusion, the ‘objective’ measures covered by Allen are not generally viewed favourably among clinicians. The main reason for this is that such methods lack the necessary qualities to distinguish subtle differences between diagnostic categories. However, such measures may be useful in providing strong ‘objective’ evidence of a change in functioning or a special reactivity to certain stimuli. It is Allen’s view that there may be circumstances (eg forensics) where clear evidence of some specific change in functioning may be more valuable than a specific diagnostic label.

### 3.6 Conclusion

The methods described above offer a number of different ways to assess who has PTSD. Irrespective of which technique and tool is used, an awareness of its merits and limitations is essential and it should be recognised that the tool chosen can influence diagnosis. (This has led to some major differences in estimates of the prevalence of PTSD in the published studies, which are discussed in the following chapter.)

Structured assessment tools, administered by a clinician, provide a reasonable basis for estimating the prevalence of PTSD.

Overall, the clinical interview methodology is viewed as the ‘gold standard’ for assessment. Clinical interviews are of particular importance when a specific diagnosis is necessary.

However, within many occupational scenarios, it may be that an indication of general mental health would be sufficient rather than a specific, named disorder. In these situations a number of structured questionnaire instruments could be used. There are two issues related to their use:

- There is evidence within the literature that the use of self-completion inventories may inflate the estimate of prevalence of clinical cases of PTSD, though these instruments remain useful for providing more general indications of mental health status.

- The way in which measurement instruments are used rather than the instruments themselves, may also have an impact within this particular field. For example, some studies focus on the occurrence of post-trauma symptoms over an extended time period (eg lifetime) and include the effects from a range of experienced traumas (rather than a single event). This can
produce very high symptom prevalence estimates which may have little clinical or practical relevance.

In summary, an immediate post-incident reaction is to be expected, but if symptoms persist beyond the first few days, a diagnosis of Acute Stress Disorder may be appropriate. Other people may develop similar reactions to stressors which although they have caused distress, are not traumatic in nature. None of these groups of people can be said to be suffering from PTSD. However, the first two may be described as experiencing a post-trauma reaction and may, in time, develop PTSD. The conditions for a diagnosis of PTSD are set out in Chapter 2 and are much stricter in terms of both the nature of the event and the symptoms.

In respect of the measurement tools available for identifying PTSD sufferers, there are two main methods: self-report questionnaires or structured interviews.

There are a large number of self-report tools, a few of which measure PTSD directly, but most of which measure only some aspects of PTSD. Some tests, eg M-PTSD, appear to work better when the percentage of the population with PTSD is relatively high. Others work better for particular groups, eg military personnel, and may be less useful for general populations. The Penn Inventory has been suggested as a good PTSD assessment instrument for both research and clinical settings. Self-report measures are generally used in conjunction with each other.

The majority of self-report measures are based on DSM-III-R criteria for PTSD.

New measures are constantly being developed and old ones revised (eg there is MMPI-1 and MMPI-2) which makes it difficult to recommend the use of specific tests. In choosing a test, it is important to consider

- the population it was designed to survey, and whether it has been tested on other groups
- what exactly the test aims to measure (DSM-IV symptoms, general mental health?)
- whether the test has been validated against other tests.

Practitioners generally prefer structured interviews as an assessment method as they have fewer problems with under- or over-detecting, faking, etc. However, these are expensive to administer and usually require a clinician’s involvement.

Attempts have been made to develop other methods of assessment, as discussed above. However, there are still significant problems with these methods and further research and development will be required before they produce useful tools.
4. How does Post-Incident Trauma Relate to Organisations?

In some occupations, exposure to traumatic events may be inevitable, eg soldiers in combat. However, many other workers may be subjected to traumatic experiences with varying levels of frequency, eg emergency workers. Other occupations may be exposed to sequential, but less individually devastating trauma, eg accident and emergency work.

Much of the literature in this area follows from particular disasters. The less ‘headline friendly’ trauma, eg bank raids or violence from customers, appears to be less extensively researched. However, it should be remembered that the nature and intensity of the trauma experience may well influence the prevalence and symptomology of PTSD. As a result, disaster based literature may be unrepresentative of the majority of organisations’ and individuals’ experiences of PTSD.

This chapter first reviews the crisis management literature, with an emphasis on the role of organisations. It then turns to look at what has been determined about the generic nature of stressors in post-incident trauma and raises a series of issues that have been identified as relevant to an organisational context. Finally it provides an overview of the legal implications for organisations.

4.1 Crisis management and the crisis process

Shrivastava et al. (1988) propose that crises are:

‘... organisationally based disasters which cause extensive damage and social disruption, involve multiple stakeholders, and evolve through complex technological, organisational and social processes.’

4.1.1 Background

The 1980s will be remembered as the decade of an unprecedented number of commercial and industrial crises worldwide. Shrivastava (1987) observes that the frequency of such events is increasing. For example, since the turn of the century, 29 major industrial accidents have been recorded, with around 50 per cent of those occurring since the late 1970s. In addition, Keller (1990) suggests that the scale of crises is also increasing. Reported crises are occurring in a wide range of settings. Major industrial accidents occurred in Bhopal, Chernobyl and on the offshore
Piper Alpha oil platform. Transport disasters have included the Estonia ferry disaster and the sinking of the Herald of Free Enterprise, the fire at King’s Cross underground station, the Exxon Valdez oil spill, and the air crashes at Lockerbie and Kegworth. Sports stadia also experienced major crises, namely the Bradford Fire, the Heysel riot and the catastrophic loss of life at Hillsborough.

The argument that each of these crises was somehow unforeseeable is spurious. Perrow (1984) has shown that systems — and this includes organisational systems — have a tendency towards failure. It follows then, as Fink (1986) points out, that we need to consider ‘when’ a system will fail, rather than ‘if’. This would appear to suggest the inevitability of organisational crises and the futility of preventative action. Pearson and Mitroff (1993) reject this view stating that the majority of crises are a function of errors in human judgement and are thereby preventable. As the complexity of organisations increases, we are essentially witnessing increasing failure of the human manager to manage that complexity. However, Reason (1995) has also indicated that system or ‘latent’ failures can be very high up the chain.

Accepting the premise that organisations are likely to fail at some stage in their lifespan leads to the development of primarily reactive strategies to cope with any harm done as the result of the crisis. The focus tends to be harm done to the corporate image. Such strategies have tended to be the primary response of practitioners, to which the growth of public relations organisations offering the services of crisis management teams testifies. The development of preventative strategies raises fundamental questions about the organisation, centred on its managerial style and organisational culture, which naturally constitute a threat.

### 4.2 The role of organisational culture

Freeman and Gilbert (1988), and Johnson and Scholes (1988) point to the organisational culture as being of particular importance in corporate strategic decision making, especially with regard to its perceived ability to respond positively and cope with threatening situations. The effects of the culture may also produce negative outcomes, providing an environment in which crisis events may incubate before rapidly spiralling out of control. Mitroff et al. (1989) examined the role of organisational culture in crisis management. They suggest that organisations may be considered as either crisis-prone or crisis-prepared. From this thinking, a four layer, ‘onion’ model of crisis management has been developed. The centre contains the core values and beliefs held by senior decision makers; then moving outward, organisational beliefs; organisational structures; and finally, organisational behaviour and plans. Crisis-prone organisations may be characterised by their misperceptions of reality in which objective reality is transformed into that which
is congruent with the values, beliefs and fantasies held by the organisation. Mitroff et al. (1989) speculate that the redefinition of reality is not based on failure of rational thought, rather by emotional factors producing a blocking effort, ie denial. This view of crisis-prone organisations is shared by Schwartz (1989), who recognises 'unhealthy' organisations who fail to recognise that their objective reality is very different from their assumed ideal, and are thereby subject to 'organisational decay'. This 'falsehood' or loss of rationality at the core values and beliefs level cannot help but steer organisations into the faulty decision making which can result in crises. Greening and Johnson (1996) identified some of the characteristics of top management teams which are related to the avoidance of crisis events. These are: a higher level of functional team heterogeneity, higher education levels, shorter organisational tenures, and more tenure heterogeneity. Such characteristics are thought to stand for deeper, underlying cognitive processes which enable fewer faulty assumptions to be made about crisis vulnerability.

4.3 How crises develop

Rasmussen and Pedersen (1982) classify organisational failure as either 'active' or 'passive'.

Reason (1987) argues that 'passive' failures are frequently the result of poor design and construction, which creates what he describes as 'resident pathogens'. Using the medical analogy of pathogens within the human body to discuss systems failure, he proposes that pathogens may be tolerated or controlled by protective measures for the majority of the time. However, a set of circumstances or triggering events may occur which enables the 'resident pathogens' to outwit the defences, making the systems acutely vulnerable to previously tolerable threat. Kates (1977) recognises that triggering events have a low probability of occurrence but suggests that there are often prior warnings of their occurrence. Shrivastava et al. (1988) also point to the low probability assessments of potentially triggering events, which means that warnings are likely to be ignored and not taken seriously until the crisis occurs. Perrow (1984) identified the degree of 'coupling' as an important factor in the development of crises. Describing interactively complex systems, it was noted that failure in one part of the system leads directly to failure in another part. If the speed of interactions is rapid then the system may be described as being 'close coupled'. This leads to localised failure which may rapidly escalate into major systems failure. A prime example of this is the Challenger Space Shuttle disaster. Lambright (1989) reports managerial failure, that known problems with the 'O' ring attachments for the solid rocket boosters were not addressed, leading directly to massive systems failure resulting in the loss of the Shuttle, the tragic loss of life of those on board and loss of reputation for NASA. Pauchant et al. (1989) also recognised coupling as an important aspect of crisis
development, but added: complexity/scientific uncertainty, system/assumption breakdown and anxiety. Implicit in this is that crises result from the failure of management to consider accurately or fully all the possible or potential crisis situations that face the organisation. This leads to questions being framed in contingency planning in terms of ‘what happens if?’. This is clearly unhelpful when the goal of crisis management is prevention.

Booth (1990) cited lack of strategic planning as challenging an organisation’s ability to cope with a potential crisis event. The author describes a ‘delayed reaction syndrome’, in which no action is taken until conclusive evidence that there is a problem is available. It is too late at that stage to take preventive action so the crisis event inevitably occurs leaving the only task for the organisation to engage in as lessening its impact. Greiner (1972) proposed that organisations will reach crisis points simply as the result of development over time. To this he later added the functions of size and growth, Greiner (1989). David (1990) went so far as to put forward the notion of a ‘successful’ crisis which serves to improve the overall performance of an enterprise.

4.4 A model of the crisis process

Cohen and Ahearn (1980), and Raphael (1986), recognise three phases of crisis management which are considered to be separate and distinct. It is perhaps useful to think of these phases as sequential parts of the crisis process. First, the pre-crisis phase, followed by the crisis impact and rescue, leading to recovery or demise. Smith (1990) used this sequential process to develop a model of crisis prevention which focuses on elements of the managerial function. The opening phase may be termed a crisis of management, which describes more accurately the pre-crisis phase put forward by earlier authors. This illustrates how management failures, actions or inactions, can have such an influence on the organisational culture and climate that a seemingly minor triggering event can escalate within the system, finally resulting in catastrophic failure (Perrow, 1984; Reason, 1987; Pauchant and Mitroff, 1992). This first phase closely parallels the development of a crisis-prone culture (Kets, de Vries and Miller, 1987; Miller, 1988; Pauchant and Mitroff, 1992).

The second phase — the operational crisis phase — describes an organisation experiencing an operational crisis situation. This is the crisis impact/rescue phase of earlier authors. In this phase the prevailing organisational climate is seen initially as one of support for those involved in response to the threat posed. The aim here would be to prevent a worsening of the situation. David (1990) argues for the importance of the ‘human face’ in minimising the impact of the event on the organisation, using as an example the appearance of the British Midland Chairman at the Kegworth air crash, in tears. However, as Smith (op. cit.)
points out, the supportive phase is of short duration under the pressing need to search for culpability. Also in this phase comes the input from ‘rescuers’ who play a vital role in damage limitation, rescue and recovery. Elliot and Smith (1993) considered one emergency rescue organisation, the Fire Service, and point out that the same issues of organisational culture may influence the ability of rescue bodies to avoid their own operational crises.

The final phase is described here as a crisis of legitimisation, which necessarily involves managing the impact of the event, and seeking to re-establish confidence in the organisation, its managerial structure and operating systems, externally. This process may too readily turn into attempts to apportion blame and identify scapegoats. Recovery or demise may be dependent on a learning feedback loop influencing the managerial culture. Smith (1993) went on to suggest that the demands of each phase create a ‘series of specific requirements for managerial action’ to prevent a crisis or limit its action.

4.5 Towards the management of crises

In order to manage crises when they do occur, it is useful to identify those factors which lead to decline or recovery. Slatter (1984) investigated the causes of organisational decline and identified more than twice as many internal factors as having a negative influence. Thain and Goldthorpe (1989) identify internal factors as including poor management, weak information flows and control mechanisms, high costs, failed marketing strategies, project collapse and poor marketing/product mix. Given that internal factors are potentially easier to address than external factors, it would seem possible for organisations to become more crisis prepared. Smith (1993) points out that this involves three key issues being addressed, namely: change of culture, communications, and configuration of the organisation. Four further elements are also identified: contingency planning, control, cost and systems coupling, and complexity. These elements gather to form what Smith describes as the 7Cs of crisis management which operate in each of the three phases of the crisis process. The 7Cs are seen collectively as influencing the organisation’s susceptibility to crisis, specifically in the degree of ‘crisis-proneness’ existing in the core values and beliefs. Johnson and Scholes, 1988; Smith, 1992b) hold that the 7Cs may be found at the centre of the strategy process, interacting closely with the ‘cultural web’ of the organisation. Validation of the 7Cs framework has been conducted across a number of sectors and in a number of organisations (see Smith, 1992a, 1993a; Elliot and Smith, 1993; Sipika and Smith, 1993).

In the crisis of management phase, coupling and complexity are particularly important. The culture, configuration and communications strategies will also strongly influence the capability of
rapid organisational response under such circumstances. Thus close coupling here would be an asset.

In the operational crisis phase, there is often a shift in emphasis to rescuers intervening to resolve or limit damage, and ensure survival of the ‘host’ organisation. While these rescuers may be, and often are, the emergency services they may also take the form of crisis decision units, PR managers and financial institutions. Effective management of the crisis event therefore is also dependent on the cultures, configurations, and importantly, the communications capabilities of the rescuing organisations. This analysis is supported by Dynes, Quarantelli and Kreps (1981) who point out that, in their view, improvements in disaster management planning are dependent on changing, and by implication improving, the responses of emergency organisations. Key areas in which the emergency response of rescuers can be improved have been identified as: communications, process and information flow, control, authority and decision making, and configuration, specifically a loosening of the command structure. At this point, it may be worth mentioning that it is the ‘what’ of communication that is important not necessarily the ‘how’. Quarantelli (1988) identifies the major problems as the poor, incomplete or inefficient flow of information.

Effective communication is therefore vital for crisis management. The flow of communication needs to be ‘bottom up’ as well as ‘top down’ to enable the full and timely implementation of control decisions.

An issue attracting much attention is the communications handling of the media after the initial crisis impact. Crumley (1990) and Jones (1990) cite the cases of Perrier and Piper Alpha to illustrate the importance of the organisations’ initial responses and handling of the media in the immediate crisis aftermath, in limiting the inevitable damage to the public. This has given rise to procedural checklists or protocols for managers to avoid ‘trial by the media’.

Turnaround, in the crisis of legitimisation phase is often characterised by change, often the removal of senior managers and a consequent shift in managerial culture. Smith and Sipika (1993) propose that this phase is further sub-divided into three sub-phases: defensive, consolidation, and offensive.

Smith (1993) concludes that focusing on organisational culture and its role in generating crises would be the most effective means of crisis prevention, recognising that such a strategy, necessarily involving change, would be threatening to management. That is why the prevailing decision making strategies tend to be addressing the symptoms rather than causes of crises, and then mitigating their effects (Shrivastava, 1997; Shrivastava et al., 1988). In Smith’s view, what is needed is for strategic decision
makers to acknowledge the limits of their abilities and adapt contingency planning accordingly.

Quarantelli (1988) usefully distinguishes between the principles of disaster preparedness planning and crisis management. Failure to do so, by assuming that the implementation of one leads to success in the other, may only produce negative results. The point is illustrated in the distinction that the military make between strategy and tactics.

Strategy is seen as the overall approach to the problem, its objective. Tactics are seen as those adjustments needed, as a result of the intervening factors and situational contingencies that arise, to attain the objective specified. Quarantelli points out that the military actually teaches both strategic principles and tactical principles.

4.5.1 Conclusion

The literature relating to crisis management has undergone considerable development since the early 1980s with visible trends emerging, Smith (1995). Crisis management research has closely paralleled that of strategic management with both areas of concern being strongly case driven. The early stages included case analysis, and the development and testing of conceptual frameworks. This was followed by an accumulation of a body of research dedicated to constructing theoretical frameworks to explain the mechanisms of the crisis process. Further case material is now needed to continue verifying these theoretical perspectives. The future holds promise of the development of diagnostic techniques and tools for practitioners.

The value of examining the crisis management literature is that while recognising the propensity for organisational failure and crises, it moves us away from the notion of inevitability through an understanding of the mechanisms which precipitate crises, to the strategies which are needed to manage the ongoing process of crisis management, which includes prevention as well as recovery. Indeed, given that the major causal factor of organisational crises is identified as human-induced error, it follows that a greater understanding of how human managers operate in crisis situations will point the way to the development of preventive crisis management strategies.

The models describing the crisis process and the factors which influence outcomes point to inaccurate core values and beliefs informing strategic thinking at the highest level in organisations as being central to the development of organisational crises. It is not that organisations are, ipso facto, becoming too complex for the human manager, rather that there is currently a mismatch between strategic management strategies in use and the crisis prevention strategies required. It is here that much scope for further research lies.
Greening and Johnson (1996) ask if managers and their strategies matter. In terms of preventing and managing potentially traumatic incidents in the workplace the answer is an unreserved ‘yes’.

4.6 Post-incident reactions in organisations

The changes in the way that PTSD and associated disorders are defined (DSM-III-R, DSM-IV [APA, 1994], ICD-10) have gradually placed a greater emphasis on the role of subjective perception in the experience of trauma. There has also been a broadening of the debate and a better understanding of how PTSD can occur. These developments have implications for the management of PTSD and for the ways in which non-PTSD trauma is managed. In addition, there are a number of structural frameworks already in existence which help to inform the way that post-incident trauma is managed.

The latest definition of PTSD dates from 1994. In research terms this is a relatively recent development and means that only now are academic articles based on the 1994 definition being published. Even so, it is possible to identify a number of issues raised in earlier work that could have implications for the management of PTSD:

- type or severity of incident
- continuum of risk
- phases of recovery
- environmental influences
- treatment, and
- stages of management.

The literature on each of these is discussed in turn. This chapter will then progress to a discussion of the evidence for intervention, and the different types of ‘treatment’ developed so far.

4.7 Type or severity of incident

March (1993), writing in anticipation of the new diagnostic criteria in DSM-IV (APA, 1994), undertook a review of empirical studies relating to the development of traumatic stress. His research addressed the question: ‘What constitutes a stressor in PTSD?’, and raises a number of questions about whether there are aspects of the intensity of the exposure to an event, characteristics of the event, or the appraisal of threat which influence the likelihood of PTSD being developed.
4.7.1 ‘Dose-response’ — the worse the trauma, the bigger the risk

March came to the conclusion that there is a clear dose-response relationship between the experience of a traumatic event and the experience of PTSD. In other words, that the magnitude of the stressor is directly proportional to the risk of subsequently developing PTSD. March also found that this holds true regardless of the type of event (e.g., natural disaster versus criminal victimisation).

However, other research has suggested a more complex relationship between the experience of a traumatic event and subsequent PTSD. Asukai (1997), in a study of office workers following an earthquake, found a clear dose-response relationship at five months post-event (the greater the individual's housing damage, the greater the frequency of symptoms). While high exposure to trauma continued to contribute to post-traumatic stress symptoms, there were other greater contributing factors at the 16 month stage, including rebuilding destroyed housing, coping with change, high neuroticism and a persistent regret for not having behaved appropriately at the time of the event.

Weisaeth (1997) has also suggested that a straightforward dose/response relationship is problematic or over simplistic. It appears to be important in the immediate reaction to an incident, but less so for the longer term response.

Some evidence was also found which suggested that more everyday events in certain types of work could give rise to PTSD symptoms; a finding that has been established elsewhere in the literature, as with police work (Duckworth, 1991).

Two further studies, ambulance workers (Ravenscroft, 1993) and fire-fighters (Fitzpatrick, 1994), focusing on a small number of cases, found evidence of similar patterns of response, some in relation to 'normal' working life.

Ravin and Boal (1989) identified several cases where post-trauma symptoms were associated with work stressors, in non-emergency service personnel. In the majority of cases, there was no single major incident. Scott and Stradling (1994) also identified clinical cases into PTSD symptoms in the absence of a single extreme event.

4.7.2 Stressor characteristics

March points out that, as yet, an adequate typology for classifying traumatic events on the basis of their generic characteristics does not exist. In addition, it is extremely difficult to look at characteristics associated with a trauma, for example its intensity or the impact it had on the individual, and use these to draw up a typology or classification for traumatic events.
That said, March did find some limited support for the theory that some types of event are associated with a greater likelihood of developing PTSD. This is recognised in DSM-IV (APA, 1994) where it is suggested that trauma of human design (e.g., torture) may result in particularly severe or long lasting symptoms. Other events have also been analysed, and in the literature, March identified the following factors as being positively correlated with the subsequent onset of PTSD:

- injury
- bereavement
- participating in or witnessing combat-related atrocities
- exposure to grotesque death
- witnessing death, and
- hearing about death.

Weiseth (1997) states that only a small number of stressors will cause PTSD in the majority of those exposed to them, and that individual differences in vulnerability and ability to cope will play a role in determining the development of symptoms.

There is clearly much useful research still to be done to discover what impact different aspects of traumatic events have on individuals, and their likelihood of developing PTSD. However, even though the current state of knowledge is embryonic, there are implications for organisations in terms of planning for, and managing, traumatic experiences.

### 4.7.3 Subjective perception — how strongly the individual feels the effects

As discussed at the start of this chapter, and in Chapter 2, emphasis on the aetiology of PTSD has shifted somewhat from a definition of trauma as ‘outside the range of usual human experience’. There is now a more relaxed criteria on proximity to the traumatic event, and an increased emphasis on subjective perception (‘the person’s response involved intense fear, helplessness, or horror’, APA, 1994). The changed definition has possibly the biggest implications for the management of PTSD.

As March pointed out, much research in this area is *post hoc*, but the expectation is that there will be a far higher rate of diagnosis, as diagnosis will be based more on symptomology than on stressor magnitude.

For those who are responsible for management of post-incident reactions, this might be an acceptable and pragmatic situation, as regardless of actual diagnosis those experiencing PTSD symptoms will be in need of assistance and support. On the other hand, it makes the parameters when planning such management intervention far less distinct, particularly with regard to who
should receive trauma support services and how they should be made available.

The implications for organisations wishing to manage post-incident reactions are considerable as they suggest that what are routine aspects of the job, as well as major events, can give rise to the experience of PTSD symptoms in certain occupations.

4.8 Continuum of risk

Williams (1993) identifies the continuum of trauma risk in occupations as an issue with clear policy implications for those organisations providing or establishing a trauma support service. While some occupations, such as active military duty or emergency service work, have repeated and predictable traumatic events, it is much harder to establish risk for other workers who can be exposed to potentially dangerous situations where the likelihood of occurrence of a traumatic event is relatively low.

In addition, Williams identifies other groups who he suggests are often neglected (eg support personnel to emergency services). With subjective perception playing a greater role in the diagnosis, as discussed above, it is possible that there are implications for the ways in which monitoring and risk assessment procedures are conducted.

4.9 Phases of recovery

The recovery stages in PTSD are typically represented in three phases (Williams, 1993; Hillenberg and Wolf, 1989). These phases are broadly comparable across different research evidence. However, the labelling of different phases is not consistent and can sometimes lead to confusion. Williams (1993), for example, refers to the three phases as shock, impact and recovery. Hillenberg and Wolf (1989), on the other hand, label them as impact, chronic stress reactions and adjustment stages. Herman (1997) also presents recovery in three stages, but her stages differ from the previous two in that they focus on reconstruction of the 'social systems of care, protection and meaning which support human life'.

4.9.1 Phase one

The first phase, the shock or impact phase, is a combination of physiological and psychological shock (Williams, 1993). Hillenberg and Wolf (1989) suggested that this phase lasts from hours to days, depending upon the traumatic experience, its nature and intensity. Herman describes Phase one as the establishment
of safety, firstly in the care and protection of the body, and then of the physical and social environment.

Figure 4:1 gives a graphical representation of the three stages.

**Fig 4:1 Phases of Post-Traumatic Stress Disorder**

![Diagram of Phases of Post-Traumatic Stress Disorder]

Source: Williams, 1993

**4.9.2 Phase two**

The second stage, that of impact, or chronic stress reactions, is associated with a high state of emotional arousal including anger, anxiety and re-experiencing of the trauma. Williams reported that up to 80 per cent of victims experienced 'mini-flashbacks' during this period. Both Williams, and Hillen and Wolf, emphasised self blame or self questioning as an element of this phase of response to traumatic events. Survivor guilt is often associated with the second phase of trauma recovery, and is discussed in more detail below.

Herman conceptualises this stage as:

'Retelling the story of the traumatic experience in a supportive social context.'

**4.9.3 Phase three**

The third phase is the recovery or adjustment phase. It is the phase where an individual makes attempts to regain control of their life and where the traumatic event is integrated into the individual's self-concept and world view (Horowitz, 1976). Williams explained this as a time when the victim might decide to 'face' the trauma (eg drive past the scene of an incident). In the case of employees, Williams described this as:
'When workers realise that the trauma is part of their life employment and continue their stream of adaptation.'

In a similar vein, Herman describes this third phase of recovery as ‘the active pursuit of social reconnection’. She points out that survivors do not make good recoveries from trauma when they remain socially isolated.

McFarlane (1997) suggests that the disorder emerges in the days and weeks following the event and that longitudinal studies of PTSD indicate that over 50 per cent of sufferers will resolve over time. McFarlane quotes Kessler’s (1995) research indicating that remission plateaus by 72 months.

4.9.4 Survivor guilt

Survivor guilt is a particular aspect of the second phase of trauma recovery, worthy of separate consideration as it has particular implications for the management of PTSD in certain occupations. Williams (1993) identified survivor guilt as likely to develop where the traumatic incident involved death. He described three distinct forms of survivor guilt related to the individual’s role and actions during the traumatic experience:

- **existential guilt** (‘how come I survived when others didn’t?’). Williams suggested that in these instances the therapeutic response was around establishing recognition that many factors influenced the individual’s behaviour in the situation and that responsibility was spread across individuals. This in itself aided the recovery phase with the successful re-appraisal of their experiences.

- **content guilt** (‘why didn’t I do x?’). Williams defined content guilt as the individual’s perception that they failed to act in a certain way during the traumatic experience. He suggested that this was usually based on an individual’s false impression that there was more that they could have done to avert the consequences. In relation to employees, feeling that they had applied equipment, knowledge, training, previous experience, and used appropriate back-up support, was important to their continued recovery. The implications here are for the crisis or critical incident management strategies that an organisation has in place. Adequate strategies, it can be inferred, will lessen the likely impact on the employee, or will facilitate their recovery, as it assists the individual in recognising that they did everything they could or should have.

- **responsibility trauma.** This is defined by Williams as the various perceptions of responsibility and perceived consequence in relation to the outcome. This form of guilt is usually associated with certain jobs or roles which are more likely to evoke feelings of responsibility (typically among disaster worker roles). Williams identified that detailed assessment and working through of the complex psychological issues are
required. Further implications can be inferred here for the management of PTSD. These involve the monitoring of different job roles and understanding the degree of risk associated with different roles within an incident.

A further factor that Williams identified as complicating the situation is where actual responsibility exists, for example where the findings from an inquiry allocate blame. This apparent conflict between survivors’ recovery needs and legal or operational requirements is echoed in other parts of the literature on trauma management, not necessarily related to survivor guilt. Evidence particularly from the financial sector records the additional difficulties experienced by some employees in the aftermath of, for example, an armed raid. In such circumstances, a police investigation (often accompanied by an internal security inquiry) is standard practice. Often, the methods of inquiry can leave already vulnerable individuals feeling that they are under suspicion, or in some way to blame for events. This is often seen by employees as a breach of confidence and an experience that can hamper their post-incident recovery.

4.9.5 Increased sensitivity to future stress

Most of the evidence points to the fact that those who have experienced a traumatic event are more likely to be vulnerable if/when another trauma occurs (Williams, 1993; Tehrani, 1996; McFarlane, 1989; Weiszeth, 1997). However, there is also limited research to suggest a possible moderating influence of previous experience of incidents. Tranah and Farmer’s (1994) work on London Underground drivers (see Section 5.5.2) suggested that drivers with previous experience of an incident were less likely to report trauma symptoms or be identified as suffering from PTSD if they experienced a subsequent incident.

4.10 Environmental influences

Many researchers have commented on the range of environmental influences that may have an impact on both the development of PTSD, and also the severity and duration of the disorder or other trauma related symptoms (see, for example, Hillenberg and Wolf, 1989).

Potential mitigating factors include personal circumstances, and family, community and organisational responses. However, there is little evidence to support these claims.

One of the main considerations here for organisations is how they reconcile trauma support with other organisational or legal needs (for example police enquiries after bank raids). Some advice on dealing with such issues is available (for example BIFU, 1993). However, the requirements will differ from setting
to setting, and will need to be identified and assessed in each
individual setting accordingly.

There is a second issue for management who believe their
organisation's culture would provide environmental support for
the traumatised individual, where in fact it does not. Anecdotal
evidence of this was provided by Elliot and Smith (1993), in
relation to the fire and police services.

4.11 Treatment

The empirical evidence for the efficacy of different approaches to
the treatment of trauma is discussed in Chapter 6. However, it is
necessary to consider the efficacy of treatment during different
stages of PTSD, and how the responsibility for treatment is
delineated between the organisation and the NHS.

McFarlane (1989) cites research where a number of war veterans
went on to develop chronic PTSD, even though their initial acute
response to trauma had been successfully managed. This poses
two questions for trauma management services:

- how do you measure, if initial treatment for the acute trauma
teamatic reactions is successful in preventing the development of
PTSD?, and
- is it possible that immediate interventions delay the
subsequent diagnosis and treatment of PTSD?

McFarlane (1987) raises the question of whether the efficacy of
different treatments will vary at different stages of the post-
incident reaction.

These questions lead inevitably to the issues of what is
reasonable intervention on the part of the organisation, and how
any trauma support service links in with local NHS provision.

The evidence on these issues is limited, although the questions
posed are of concern to organisations (eg The Post Office,
Tehrani, 1996).

4.12 Stages of management

Having assessed the risk of a traumatic event, organisations
must decide what their response will be at any given point, ie
pre-trauma, immediately post-trauma, and in the longer term.

In recent years, more attention has been focused on prevention
in the sense of preventing or minimising the risk of a traumatic
event occurring. Researchers, such as Williams (1993), have
offered models of prevention based on primary, secondary and
tertiary intervention. (This is extremely similar to the work of
Cox [1993] within general occupational stress.)
• **Primary interventions** are concerned with the prevention of trauma in the workplace, typically through risk assessment and hazard control. More and more, the role of primary prevention is also recognised in selection and recruitment procedures (for example, Elliot and Smith, 1993), and in strategies for crisis or critical incident management which are supported by training.

Although limited, there is evidence to suggest that having a clearly defined role or procedural guidance in the event of a trauma is associated with lower levels of subsequent PTSD symptomology (Green, 1993).

• **Secondary interventions** can be characterised as ‘timely reaction’, or crisis intervention, where organisations put in place measures to prevent the development of longer term emotional and psychological damage. In the majority of cases, where support is provided, critical incident debriefing is used to resolve problems or relieve situations as they arise and so minimise the impact. To date, the research evidence on this type of approach is very mixed and is reviewed fully in Chapter 6.

• **Tertiary interventions** treat the longer term effects of trauma. They are aimed at helping people to recover if their symptomology persists beyond the initial debriefing or secondary intervention.

The majority of research about intervention has taken as its starting point the activity directly following any traumatic experience. The research differentiates between crisis intervention (immediate post-trauma support) and follow-up interventions (longer term support for those who go on to develop PTSD symptoms). Despite the fact that both interventions occur post-trauma, crisis interventions, or secondary interventions, are often referred to as ‘preventative’, as their aim is to prevent the onset of serious longer term illness.

An interesting aspect of the literature covered in this chapter is that research on trauma prevention and crisis management have developed largely in isolation. There is very little evidence of the impact of strategic or crisis planning on employees’ subsequent psychological health. The limited research on trauma management tends to target specific interventions (for example, recruitment and selection) as opposed to generic management or crisis strategies.
It is now recognised that an individual can be traumatised by events which do not directly threaten them, but for example, involve a loved-one or work colleagues. For organisations this means that they must consider a wider range of possible hazards when assessing the risk to their employees.

The evidence shows that some types of trauma are particularly associated with the development of PTSD. More extreme stressors, which involve death or injury, seem particularly likely to provoke PTSD for example, although there is evidence (eg from emergency service personnel) that everyday routine work can cause PTSD symptoms. Organisations need to be aware of the particular potency of some events, identify who among their staff is likely to be exposed, and have a plan of action to minimise the risk before and after the event, as appropriate.

However, the literature also suggests that some groups of employees are less likely to be identified as being at risk from traumatic events in the first place, eg support workers to the emergency services, as their exposure to traumatic events is not as repeated or predictable as among other groups, eg ambulance personnel. This underlines the need for a comprehensive risk assessment covering all groups of employees.

The definition of PTSD now places more emphasis on the way in which the individual responds to the traumatic event. Again, this has implications for the way in which organisations organise their support for those involved, for example, in deciding how much or what form of intervention is required.

Whatever form of intervention is selected as most appropriate, (primary, secondary or tertiary), the timing of post-incident interventions is decided with reference to the ‘phases of recovery’ identified by several authors. Traumatised individuals can be expected to progress through three stages over time, namely shock, impact and resolution.

An individual’s response to trauma may also be influenced by a number of environmental factors, eg the supportiveness or otherwise of work colleagues and/or organisational culture. Moreover, employers must be conscious of a potential mismatch between the individual’s need for support and internal or external investigative processes.

Finally, anyone organising a post-trauma response must bear in mind that even if the initial, acute reaction to the event is managed well, there is still the chance that the individual may go on to develop PTSD, and that by intervening at an early stage the identification of the disorder may be delayed.

4.13 PTSD and legal implications for organisations

Liability and legal responsibility in relation to psychiatric illness is of growing concern to many employers (West, 1994; Cooper and Earnshaw, 1996; IRB, 1995a, 1995b; the Law Commission, 1995).

Cooper and Earnshaw (op. cit.) point out that personal injury law is based on common law rather than by legislation in the form of
Acts of Parliament. They point to two main ways in which cases for work based psychiatric harm have come to the fore. Firstly, and more straightforwardly in the eyes of the law, are examples where an individual has suffered psychological damage as a result of a physical injury. Less common is the second form of ‘psychiatric harm’ case, usually referred to as nervous shock (although the Law Commission [1995] recommend the use of the wider and less controversial phrase ‘psychiatric illness’).

Cooper and Earnshaw point to the fact that much of the common law on psychiatric illness/nervous shock has developed outside of an employee-employer relationship. However, they also suggest that due to the increasing violence in modern society, more employees are now likely to suffer a traumatic incident which could lead to PTSD.

### 4.14 Features of the law on trauma induced psychological illness

These issues were recently addressed by the Law Commission (1995) in a consultation paper on liability for all psychiatric illness. Damages may be paid for shock induced psychiatric illnesses other than PTSD, although the paper states that PTSD is increasingly prominent in personal injury claims.

However, the Law Commission note that the DSM criteria are designed for clinical, education and research purposes and therefore:

'It should be noted that ... in most cases the clinical diagnosis of DSM-IV mental disorder will not in itself suffice to establish the existence of a mental disorder for legal purposes owing to the imperfect fit between the questions that are of ultimate concern to the law and the information that is contained in a clinical diagnosis.'

**Law Commission, 1995, p. 39**

The Law Commission outlines five key principles which identify who is liable to pay damages for psychiatric illness. They are essentially the principles which assess liability in cases of physical injury. The first, namely that the defendant owed the victim a duty of care, has proved the most problematic for plaintiffs. The remaining four are reasonably straightforward.

- The defendant’s conduct was negligent.
- The negligent act caused the injury/illness. (A diagnosis of PTSD includes causation, as this is part of the definition of the condition.)
- The illness is not too remote from the event.
- The defendant has no defence.

As the law stands, there appear to be two further conditions to claims for damages for psychiatric illness.
Firstly, the plaintiff must suffer a recognised psychiatric illness. PTSD has been established as recognised in this context. Secondary victims of the trauma may also claim for shock-induced illnesses.

Secondly, it should have been reasonably foreseen by the defendant that her/his negligence would result in the plaintiff suffering a psychiatric illness.

Several other points of law are worthy of note in a discussion about PTSD. The plaintiff may recover damages if:

- the psychiatric illness arose from a reasonable fear of immediate physical injury to themselves
- the psychiatric illness arose from their role as a rescuer, or
- the psychiatric illness arose through fear of causing injury.

Employees not falling into the above categories can be classified as bystanders and are not seen as suffering directly from the incident (except perhaps as secondary victims) (IRB, 1995).

The Law Commission also suggests that a psychiatric illness induced by the shock of damage to property may be possible, although this has not been firmly established.

Although DSM-IV (APA, 1994) includes learning about threats to self and family in the definition of traumatic events, it is also not totally clear whether negligent communication of a catastrophic event, which causes shock induced psychiatric illness, is compensatable.

However, the thorniest issue of the law on psychiatric illness is that of proximity. If a defendant has imperilled or injured a third party (ie not the plaintiff or defendant) and the plaintiff suffers a shock induced psychiatric illness as a result, then certain groups of people can claim damages, if their proximity to the event or people involved is close enough.

Firstly, certain groups of people always have their claims recognised. These include persons with a tie of love and affection to the primary victim, some bystanders (though the law applies the old test — the event must be likely to traumatisé almost anyone), and rescuers (although the law seems to relate to the damages being paid by the negligent defendant, not the rescuers’ employer). Some involuntary participants, for example those operating faulty machinery which harms another, may also be able to claim.

Secondly, proximity to the event must also be close enough in both time and space. The Law Commission suggests that the plaintiff must be either at the event or perceive the immediate aftermath of the incident.
The final aspect of proximity is the means by which the shock was caused. The law is not totally clear on the necessity for the event, or its immediate aftermath, to be seen or heard by the plaintiff’s unaided senses, although this appears to be the requirement established by Mccloughlin v O’Brian.

The law can only deal with traumata of human making, and where an individual or company can be found responsible. If the trauma is a natural disaster there is no defendant and no legal recompense.

4.15 Employers’ duties under the Health and Safety at Work Act

There is no legislative provision to deal specifically with psychiatric illness/nervous shock. However, the statutory duties laid down in the Health and Safety at Work Act (1974)¹ apply to both the physical and psychological well-being of employees.

A full review of the Act is beyond the remit of this study. However, the key requirement of the Act is that employers must ensure so far as is reasonably practicable the health safety and welfare at work of their employees (Section 2(1) of the HSW Act, IRB Bulletin, 1995a). This duty covers both the physical and psychological health of employees — there is no justification for regarding physical and psychiatric injury as different kinds of injury.

Additionally, the Management of Health and Safety at Work (MHSW) regulations (1992)² place a statutory duty on employers to conduct risk assessments of their employees’ work (ie not just their workplaces). This is to enable employers to identify hazards to health (both physical and psychological); who could be harmed; how often; and how. These contribute to the evaluation of the extent of risk, so that appropriate preventive or protective measures can be put in place, or the hazard removed.

The full requirements of the MHSW regulations are available through the Approved Code of Practice and Guidance on the MHSW.

4.16 The nature of claims

Cooper and Earnshaw (1997) report on the findings of a 1994 survey of personal injury solicitors asking about actions where

workplace stress was the cause of the injury. Response rates were very low (<25 per cent) but just over a quarter of those who responded (n=14) were involved in such a case or had been involved in such a case during the previous five years.

A larger survey, of 400 firms, was conducted in 1995. Again the response rate was very low (21 per cent) and 20 per cent of those who responded were involved in a workplace stress claim. By far the main source of claims was workplace bullying and the most common injury ‘nervous breakdown’. PTSD was mentioned as an injury in only one case.

Nonetheless, it is clear that legal actions against employers for nervous shock/psychiatric illness resulting in PTSD are in evidence. Where such cases have union support and/or much publicity it is implicit that knowledge of this form of legal redress will grow.

The implications for employers are potentially immense. As Cooper and Earnshaw point out in relation to employers’ duty of care in relation to nervous shock:

‘It follows logically from these principles that retail assistants for example, or those working in banks or building societies who are involved in a hold-up and suffer PTSD through fear for their own safety, should not be excluded — and neither should those who suffer PTSD-like symptoms as a result of bullying.’

4.17 Conclusions

Rulings on nervous shock/psychiatric illness issue from common law and can therefore be viewed to some extent as being in a process of development and refinement.

Psychiatric illness as a result of physical injury are relatively common. Less common are cases often referred to as ‘nervous shock’, essentially psychiatric illness as a result of exposure to a trauma in the workplace.

Duty of care will apply where a person:

- fears for their own safety
- acts as a rescuer, or
- fears causing injury to another.

If employees do not fall into these categories they risk being categorised as bystanders, and duty of care does not apply unless they can satisfy further tests of proximity:

- proximity to the incident in terms of time and place, or
- had close ties of love and affection with a victim.
Health and Safety at Work legislation (1974, 1992) applies to both the physical and psychological well-being of employees. Employers are required as far as is reasonably practicable to ensure the health, safety and welfare at work of their employees. This includes undertaking risk assessments of both physical and psychological hazards.

It is difficult to speculate on the nature of claims due to a paucity of evidence. However, it has been suggested that the current principles allow scope for personal injury claims for psychiatric illness claims as a result of not only one-off traumatic events (eg a bank raid) but also prolonged exposure to a more everyday occurrence (eg bullying).
5. PTSD in the Workplace

There have been a number of studies which attempted to measure what proportion of the general population suffered with PTSD. Similarly, the incidence of PTSD has often been assessed among particular sub-groups, eg survivors of disasters. More appropriate for this study is the work which measured rates of PTSD in particular occupations.

This chapter assesses the research which estimates the prevalence of PTSD in the general population, and the research available on PTSD in particular occupations.

5.1 PTSD in the workplace, compared to the world at large

As Green (1994) noted, the longitudinal course of PTSD has been underresearched so far, but that the evidence suggested it may be a ‘long-lasting disorder without treatment intervention’ (p. 351). Accordingly, many of the studies which assess the prevalence of PTSD report two sets of figures:

- lifetime prevalence
- current sufferers.

5.1.1 Prevalence of PTSD in the general population — a ‘long-lasting disorder without treatment intervention’?

There are few good studies of the prevalence of PTSD symptoms in the general population. Estimates vary between 85 per cent and 0.5 per cent, depending upon sample selection and research techniques.

At one extreme, a very high incidence of traumatic experience was recorded in Vrana and Lauterback’s (1994) sample of 400 college students. At least one traumatic event was reported by 84 per cent of students. One-third of the sample had experienced four or more traumas.

Slightly lower rates of exposure to traumatic events were recorded by Resnick et al. (1993). In this telephone survey of 4,000 women, 69 per cent had been exposed to a traumatic event and 36 per cent had experienced sexual or aggravated assault, or homicide of a close relative or friend. Among those who had a
trauma history, around 18 per cent had experienced PTSD and nearly seven per cent were currently suffering (measured with the Diagnostic Interview Schedule, DIS).

The DIS was also used by Davidson et al. (1991), although the prevalence of PTSD was found to be much lower in this community sample of just under 3,000 people. They found lifetime and six months’ prevalence figures for PTSD of 1.3 per cent and 0.44 per cent respectively. What is more, a further six per cent of the community had some of the symptoms associated with PTSD, but not the full symptomology.

Shore et al. (1989) used a control group in their community study of PTSD following the Mount Saint Helens eruption. The control group had a lifetime rate of 0.9 per cent for men and 1.9 per cent for women, using DSM-III criteria, measured during the first year post-disaster (1980-1981). (Those exposed to the eruption displayed much higher rates.)

In addition to measuring the general prevalence of PTSD, Breslau et al. (1991) considered the relationship between PTSD and gender. One thousand members of a ‘health maintenance organisation’ were interviewed.

The age range of participants was limited to 21 to 30 year olds. Nearly four out of ten had experienced a traumatic event. One-quarter of these (ie nine per cent of the total sample) could be diagnosed with PTSD (DSM-III-R). Of those exposed to trauma, 31 per cent of women and 14 per cent of men had PTSD. (This is a very different pattern to that found by Kulka et al. [1991] in Vietnam veterans, discussed below.) What is more, a further six per cent of the sample had some of the symptoms associated with PTSD, but not the full symptomology.

Green (1994) reviewed a number of general surveys of PTSD prevalence and highlighted some of the inconsistencies seen in the above studies. She suggested that on average around 25 per cent of people exposed to extreme stressors go on to develop PTSD. Furthermore, Green suggested that low measurement sensitivity may explain the low lifetime PTSD prevalence rates, such as that reported by Davidson. However, these estimates do not provide guidance on the prevalence of problems, given exposure to a specific type of trauma. The relevant research in this area is presented in the subsequent section reviewing the various work sectors.
It would seem clear that major variations in sampling procedures and methods of assessing and classifying reported symptoms have led to the large range of population prevalence estimates. It is likely that the lower prevalences of under 0.5 per cent for current and 1.3 per cent for lifetime reported by Davidson et al., with a further 6.6 per cent showing sub-PTSD symptoms, are the most realistic estimates, although Green has pointed to methodological difficulties which could lead to the under-reporting of lifetime prevalence figures. Green suggested roughly a quarter of people exposed to a trauma would go on to develop PTSD.

In effect, this means that although an individual’s chances of suffering PTSD are relatively low, it is not at all unlikely that organisations will have one or more sufferers in their employment at some time. In some occupations, where employees are more prone to traumatic events, the incidence of PTSD and related conditions will almost certainly be higher.

### Table 5.1 Prevalence of PTSD in the general population

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vrana and Lauterback, 1994</td>
<td>400 college students</td>
<td>Lifetime</td>
<td>84% exposed to trauma</td>
</tr>
<tr>
<td>Resnick et al., 1993</td>
<td>4,000 women</td>
<td>Lifetime</td>
<td>69% exposed to trauma, of whom:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lifetime</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current sufferers</td>
<td>7%</td>
</tr>
<tr>
<td>Davidson et al., 1991</td>
<td>3,000 community</td>
<td>Lifetime</td>
<td>1.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 months post-trauma</td>
<td>0.44%</td>
</tr>
<tr>
<td>Breslau et al., 1991</td>
<td>1,000 members of health maintenance organisation</td>
<td>Lifetime</td>
<td>40% exposed to trauma, of whom:</td>
</tr>
<tr>
<td></td>
<td>21-30 years old</td>
<td>Current sufferers</td>
<td>25%</td>
</tr>
</tbody>
</table>

*Source: IES review, 1998*

### 5.2 Which industries have employees at risk?

In some occupations, exposure to traumatic events may be inevitable, e.g., soldiers in combat. However, many other workers may be subjected to traumatic experiences with varying frequencies. Some occupations may be exposed to sequential but less individually devastating trauma, e.g., traffic police.

However, it should be remembered that:

- the nature and intensity of the trauma may influence the prevalence and symptomology of PTSD
much of the literature follows from particular disasters. The less ‘headline friendly’ trauma, eg bank raids or violence from customers, appears to be less extensively researched.

For both reasons disaster-based literature may prove to be unrepresentative of the majority of organisations’ and individuals’ experience of PTSD.

The following analysis follows the major occupational groups identified in the literature. They are:

- military personnel
- transportation workers (railways, maritime, aviation, road transport)
- emergency service workers (ambulance, fire, police)
- the financial sector
- health care workers
- offshore oil and gas industry
- other industrial processes
- nuclear workers.

It is within these occupational groups where differences in the usefulness, sensitivity and appropriateness of various methods of measurement (self-report questionnaires or interviews, for example) can be seen.

5.3 Military personnel

The military environment provides the major source of academic studies on trauma-related stress in employees. While there are a number of studies in military settings which are more typical of other working environments (eg rescue work), there are limitations on the relevance of much of the other material related to combat exposure because of its unique characteristics.

In addition to the research on military operations which are broadly comparable to other types of work, the significant history and prevalence of PTSD within a military environment means that the data provide a rich source in terms of the development of interventions. These are discussed in Chapter 6.

The types of incident that military personnel are exposed to can be divided into the operational activities of:

- combat
- policing actions
- humanitarian and rescue operations.
Clearly, there are significant variations across these activities in terms of the duration and severity of traumatic exposure, as well as the probability of exposure, once deployed.

Friedman et al. (1994), emphasised that PTSD is a long-term reaction to war-zone exposure, with briefer reactions to war zone stressors being known by a variety of names — for example, ‘combat stress’.

The long term nature of the reaction is demonstrated by Hunt (1997), who surveyed 731 World War II and Korean War veterans. The average age of the sample was 72. Hunt found that large numbers of veterans were still experiencing war related problems decades after their combat exposure. Nineteen per cent of the sample scored above threshold on the IES and GHQ. Hunt proposed that by using both measures, only those experiencing high intrusion and avoidance (IES) and high psychological distress (GHQ) were included as experiencing war related problems. Thirty-five per cent of the sample scored above threshold on the GHQ alone.

5.3.1 Vietnam veterans

Friedman et al. (1994), noted that the prevalence of PTSD varied considerably in the literature. They ascribed the variation to poor sampling methods. However, the results of one more reliable study, by Kulka et al. (1991) are detailed in the table below. Significantly, the research also estimated the prevalence of partial PTSD in those with combat experience.

Kulka et al. (1991) note that the combined full and partial lifetime prevalence estimates suggest that more than half of male (53.4 per cent) and almost half of female (48.1 per cent) Vietnam veterans have experienced clinically significant symptoms in relation to their war-zone experiences.

Among Vietnam veterans living in the community and seeking outpatient mental health care, the prevalence of PTSD was much lower, at around 3.4 per cent (Friedman et al., 1994).

<table>
<thead>
<tr>
<th>Sub-population</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>War zone veterans</td>
<td>Current prevalence</td>
<td>36.0</td>
</tr>
<tr>
<td>Non-war zone veterans</td>
<td>Current prevalence</td>
<td>2.5</td>
</tr>
<tr>
<td>All veterans</td>
<td>Current prevalence</td>
<td>15.0</td>
</tr>
<tr>
<td>All veterans</td>
<td>Lifetime prevalence</td>
<td>31.0</td>
</tr>
<tr>
<td>Combat veterans — partial PTSD</td>
<td>Lifetime prevalence</td>
<td>22.5</td>
</tr>
<tr>
<td></td>
<td>Current prevalence</td>
<td>11.1</td>
</tr>
</tbody>
</table>

*Source: IES/Kulka et al. (1991)*
5.3.2 Falklands War

Evidence on Falklands veterans highlights some of the difficulties in establishing accurate prevalence rates. Orner (1997) has questioned the MOD figures of psychiatric casualty among Falklands veterans due to lack of adequate screening at the time and subsequent implied reticence to reveal the scale of the problem. Orner refers to a 1982 parliamentary question on the number of Falklands wounded and the nature of their wounds. The Minister of State for Armed Forces reported 17 cases of Shell Shock. In contrast, O'Brien and Hughes (1991) reported an investigation of British soldiers five years after the Falklands conflict. It was suggested that as many as 57 per cent could be diagnosed with severe reactions using the GHQ, though the sampling methodology precludes generalisations. (It should also be noted that the GHQ is a measure of general psychological well-being, not a PTSD specific measure. It is therefore impossible to identify PTSD using the GHQ alone). A similar problem was acknowledged by Orner et al. (1993), when in a biased sample they found 86 per cent of Falklands veterans had very poor levels of psychological well-being according to the GHQ, with 60 per cent of the sample reporting sufficient symptoms to meet DSM-III criteria for PTSD.

Although in both studies the evidence is muddied by differences in measurement tools and methodology, the recorded rates of poor psychological well-being were constantly high.

Orner concludes that:

‘... the total participant sample studied 13 years after the war is less than 130. ... No-one can argue for the representativeness of participants studied. ... In consequence, we remain ignorant of longitudinal prevalence rates of PTSD in all Falklands War veteran groups.’

5.3.3 Gulf War

Wolfe et al. (1993), reported initial figures from 2,344 military personnel following the Gulf War, which indicated that a few days after returning to the US, the current prevalence of PTSD was four per cent and nine per cent in male and female Gulf War veterans (assessed using the Mississippi Scale). Eighteen months later, the corresponding figures were 9.4 per cent and 19.8 per cent. It should be noted, however, that a larger proportion (28 to 31 per cent) of personnel scored within clinically significant ranges on the Brief Symptom Inventory, which measures general mental health (Derogatis and Melisaratos, 1983).

Sutker et al. (1993), reported findings from a study of over 200 Army National Guard and Army Reserve personnel some four to ten months after being deployed in Operation Desert Storm. Sutker et al. classified 19 per cent of the war-zone sample as positive for PTSD using the Mississippi Scale and 16 per cent
using the PTSD Checklist (PCL-M, Weathers et al., 1991). Additionally, 24 per cent of the war-zone troops reported clinically significant levels of depression using the BDI.

5.3.4 Hostage/PoW exposure

Sutker et al. (1993) reported estimates of 78 per cent lifetime and 70 per cent current PTSD in World War II veterans who had been prisoners of war in the Pacific. A similar aged cohort of World War II veterans with high war zone exposure had estimates of 29 per cent for lifetime and 18 per cent for current PTSD.

5.3.5 Humanitarian missions

As a relatively new phenomenon within military forces, the deployment of personnel for non-combat or restricted combat duties has produced few distinct studies.

Ritchie et al. (1994) reported the experiences of the 528th Combat Stress Control (CSC) Unit when deployed to Somalia. During three months of deployment, they reported ten psychiatric evacuations, with a significant number of these presenting problems because of personal situations at home.

Litz et al. (1997) studied over 3,000 US military personnel who had served as peacekeepers in Somalia. They found that eight per cent of veterans had PTSD, measured approximately 15 weeks after their return to the US, with very similar levels reported by both men and women. Interestingly, Litz et al. discussed the possibility that peacekeeping duties may offer some rewarding experiences. Although exposure to war zone stressors and negative peacekeeping experiences were the best predictors of the severity of PTSD symptoms, Litz et al. cautiously suggested a negative correlation between the generic rewards of military service and the development of PTSD. The rewarding aspects of peacekeeping were not associated with PTSD symptoms.

5.3.6 What do combat-related studies show?

Although the field of PTSD research has been heavily influenced by findings from military studies, the majority of studies have focused on Vietnam war veterans and represent chronic rather than acute reactions.

When the military samples are examined, there is evidence to suggest that 31 per cent of Vietnam veterans had combat-related PTSD at some point, with half of these (15 per cent) continuing to meet full criteria some 20 years later. Green (1994) also highlighted results from Speed et al. (1988) suggesting that a
similar proportion of World War II veterans continued to experience PTSD symptoms decades later.

The findings from the Gulf War (eg Wolfe et al., 1993) indicate an expected prevalence of PTSD of four to ten per cent for personnel with brief and intense combat exposure. More importantly, however, this study indicated that around 30 per cent of personnel show clinically significant symptomology shortly after exposure. The findings reported by Sutker et al. suggest within a smaller sample that prevalence of PTSD may be greater over the six-month period post-combat exposure (16 to 19 per cent) though their findings relating to more general clinical problems (depression) are slightly lower than Wolfe et al. (24 per cent).

For non-combat military activities, there is some limited evidence of PTSD resulting from UN policing and humanitarian operations, though this field is continuing to develop. However, it is unlikely that the effects of accidents and disasters on military personnel, acting as rescuers and helpers, would be substantially different to those of other rescue workers, considered below.

Studies of military personnel have provided a rich source of data used in the development of definitions of PTSD and advances in the methods for measuring the disorder's prevalence. In addition, the longer-term research on Vietnam veterans has more value in relation to development of appropriate interventions and thus is covered in more detail in Chapter 6, on the management of traumatic stress.

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kulka et al., 1991</td>
<td>Vietnam veterans (all experiences)</td>
<td>Lifetime</td>
<td>31% men; 27% women</td>
</tr>
<tr>
<td></td>
<td>War zone experience</td>
<td>Current</td>
<td>15% men; 8.5% women</td>
</tr>
<tr>
<td></td>
<td>No war zone experience</td>
<td>Current</td>
<td>36% men; 17.5% women</td>
</tr>
<tr>
<td>Friedman, 1994</td>
<td>Outpatient Vietnam veterans</td>
<td>Lifetime</td>
<td>2.5% men; 1% women</td>
</tr>
<tr>
<td>O'Brien &amp; Hughes, 1991</td>
<td>Falkland War veterans</td>
<td>5 years post-trauma</td>
<td>57%</td>
</tr>
<tr>
<td>Orner et al., 1993</td>
<td>Falkland War veterans</td>
<td>Lifetime</td>
<td>60% (DSM-III)</td>
</tr>
<tr>
<td>Wolfe et al., 1993</td>
<td>Gulf War military personnel</td>
<td>On return to US</td>
<td>4% men; 9% women</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18 months after return to US</td>
<td>9.4% men; 19.8% women</td>
</tr>
<tr>
<td>Litz et al., 1997</td>
<td>US peacekeepers</td>
<td>15 weeks after return to US</td>
<td>8%</td>
</tr>
</tbody>
</table>

*Source: IES review, 1998*
5.4 Transport: land, sea and air

Although there have been some recent attempts to review the area of transportation-related incidents and their consequences in terms of PTSD (eg Davis and Breslau, 1994), firm conclusions are hindered by the diversity of incidents, casualty rates and outcomes.

The literature on PTSD in relation to transportation workers has been organised by mode of transport:

- rail
- road transport
- maritime
- aviation.

5.5 Rail

In respect of rail travel, there are four main types of incident which have provoked research into PTSD:

- crashes
- suicides
- violence towards staff
- incidents/disasters at terminals.

5.5.1 Crashes

A number of studies of the impact of major rail accidents have been published. Predominantly, such research focuses on the impact on passenger victims (eg Raphael, 1977; 1979; Arozenius, 1977; Hagstrom, 1995) and rescue workers (eg Raphael et al., 1983; Andersen et al., 1991). Perhaps because the number of employees involved in a crash is generally limited, they do not appear to have been the subject of research. Many more organisations will have employees who are traumatised as passengers rather than as employees.

Although a major accident is a rare occurrence on modern railway systems, there are other sources of traumatic events experienced by railway employees.

5.5.2 Suicide incidents

One of the more frequently occurring traumatic events in this environment for operational staff is witnessing suicide. O'Donnell and Farmer (1994) reported that on average over 300 deaths occurred under trains each year, with suicide verdicts being given in around two-thirds of the cases.
For one particular organisation (London Underground Limited), just under 100 cases per year were experienced in the 1980s, representing a reasonable probability of event occurrence over the course of a driver’s working life. Thus, based on the LUL figures, assuming a workforce of 2,000 drivers, it could be expected that a driver would experience one such event for every 20 years of driving, with a substantial probability that many would experience several incidents (see below).

Similarly, the data from Stockholm’s subway system during the 1980s, led Theorell et al. (1994) to estimate that a driver could expect to experience an incident once every 30 driving years. Tang (1994) estimated that for Copenhagen S-train drivers, there was a one in eight chance of being involved in a suicide or suicide attempt each year.

The impact of such incidents has been described by Tranah and Farmer (1994) in a study of 76 London Underground drivers experiencing a person jumping or falling in front of their trains. When interviewed one month after the incident, 17 per cent of the drivers presented with PTSD. One-third of the total were diagnosed as psychiatric ‘cases’ using the Present State Examination (a ‘partially standardised clinical interview’; Wing et al., 1974) with 67 per cent of the drivers being classed as ‘not cases’. At a six-month follow-up interview (performed on 56 out of the 76 drivers), only two of the drivers remained ‘cases’ defined by the PSE, though seven cases were above clinical threshold on the General Health Questionnaire (Goldberg and Williams, 1988). No-one was classed as suffering from PTSD at the follow-up stage.

This research also studied the impact of ‘person under train’ (PUT) incidents on the employees’ sickness absence records. Tranah and Farmer found that all 13 of the drivers fulfilling PTSD criteria took time off work, with an average of 42.6 days missed (median 31, range 14 to 92). Nine of the 12 drivers meeting the PSE(9) criteria took time off, averaging 26.2 days (median 21, range 0-112). Fifty-five per cent of the ‘non-case’ drivers took sick leave averaging 11 days off (median 4, range 0 to 64). This resulted in an overall average time off work of 18.9 days (sd 23.32, median 14) across the whole driver sample, with 34 per cent taking no time off at all. Another interesting feature of this report relates to a potential moderating influence of previous experience of incidents. Five (15 per cent) of the clinical cases had experienced a previous incident of this kind compared with 20 (39 per cent) of the ‘non-case’ group of drivers.

Further evidence of the impact of PUT incidents was described by Theorell et al. (1992; 1994). The researchers interviewed nearly 50 drivers with recent PUT experience (although nearly 40 per cent refused to participate in the research). In terms of sickness absence, the PUT drivers had significantly more days off in the first three weeks post-incident than a matched control group, and significantly more days off during the period three months.
to one year after the event. Thirty-eight per cent of the PUT drivers had at least one month of sickness absenteeism during the period three months to one year after the incident, compared to 14 per cent of the control group. There was also some evidence that the type of incident appeared to affect subsequent wellbeing, in that the nature of the trauma seemed related to absence rates, although this appeared to be non-linear (those involved in serious injury accidents were off more than those involved in minor injury or fatal accidents).

5.5.3 Violence against staff

Little has been reported in the main psychological literature with respect to violence against transportation employees. Cooney and Cochrane (1995), described an investigation of staff accidents within London Underground Limited three years previously, which found that assault was the most significant risk to staff safety, both in stations and on trains. This should have resonance for organisations with employees whose role involves contact with members of the public.

5.5.4 Terminal incidents

The Kings Cross Underground Railway Station fire of November 1987 (Fennell, 1988) represents a major incident of the type involving a transportation terminal, rather than the more usual transportation accidents. Turner et al. (1995) described the results of interviews held between one and 12 months post-incident. However, the results reported did not distinguish between the categories of individuals involved (passengers, emergency service personnel and underground staff). Additionally, this sample comprised those who had initially contacted a helpline facility and would not therefore necessarily be representative of all involved. However, it was reported that 33 (66 per cent) of the sample were above threshold on the GHQ-28 (ie had scores indicating minor psychiatric disorder).

Table 5.4 Prevalence of PTSD in rail transport employees

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Exposure to suicide trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUL, 1992</td>
<td>London Underground drivers</td>
<td>n/a</td>
<td>1 incident in every 20 driving years</td>
</tr>
<tr>
<td>Theorell, 1994</td>
<td>Stockholm drivers</td>
<td>n/a</td>
<td>1 incident in every 30 driving years</td>
</tr>
<tr>
<td>Tang, 1994</td>
<td>Copenhagen drivers</td>
<td>n/a</td>
<td>12.5% per annum</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tranah and Farmer, 1994</td>
<td>76 LUL drivers</td>
<td>1 month post-trauma</td>
<td>17% (PTSD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 months post-trauma</td>
<td>0% (PTSD)</td>
</tr>
<tr>
<td>Raphael, 1983</td>
<td>95 rail disaster rescue workers</td>
<td>unknown</td>
<td>20% (psychological symptoms)</td>
</tr>
<tr>
<td>Andersen et al., 1991</td>
<td>77 rail disaster rescue workers</td>
<td>7 months post-trauma</td>
<td>6% (PTSD)</td>
</tr>
</tbody>
</table>

Source: IES review, 1998
5.5.5 Effects on rescue workers

Several studies have explored the effect of rail incidents on a variety of rescue workers and these are discussed in Section 5.10.

5.6 Road transport workers

With respect to work-related incidents, Harrison et al. (1993) reported that road traffic accidents represented the most common cause of work-related fatal accidents, accounting for around 24 per cent of all cases, and nearly 40 per cent when commuting was included.

Guppy and Adams (1992) reported that among a sample of 555 British company vehicle drivers, nearly 30 per cent had experienced at least one road traffic accident (RTA) in the previous five years, with four per cent of these involving injury to self, and a further six per cent involving injury to a third party.

As may be expected, the published clinical studies tend to focus on victims regardless of their work status, and rarely would any distinction be made relating to whether the road accidents were work-related. However, there is little indication that the impact of such events would be diminished because of a professional role.

Table 5.5 PTSD in road transport employees

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Exposure to road traffic accidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guppy and Adams, 1992</td>
<td>Company vehicle drivers</td>
<td>5 years</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: IES/Guppy and Adams, 1992

5.7 Road traffic accidents

Road traffic accidents are likely to affect a large number of employers, although the effects are distributed over a wide range of occupations. The UK, despite dramatic reductions in annual fatalities over the last ten years, still records around one-quarter of a million injurious accidents per year, with around 4,000 fatalities. With a prevalence such as this, it is no surprise that a substantial number of PTSD cases have been identified in association with such incidents and that RTAs represent large potential for incident-related trauma for both general and working populations.

Norris (1992), in a general survey of the frequency and impact of various traumatic events, noted that motor vehicle accidents represented 'the most adverse combination of frequency and impact' (p. 409).
Mayou et al. (1993) reported a three and 12 month follow-up study of 188 road accident victims. They reported that at three-month assessment, emotional distress was 'usually of moderate intensity', though 41 per cent of the sample reported above threshold scores on depression and anxiety. Overall, Mayou et al. (1993) report that 37 cases (21 per cent) described significant psychiatric problems after one year. In terms of PTSD diagnoses, eight cases (four per cent) suffered PTSD at three and 12 months, five cases (three per cent) at three months only, and six cases (three per cent) at 12 months only.

Bryant and Harvey (1995) assessed 56 motor vehicle accident (MVA) victims 12 months post-accident, using questionnaire-based measures (including IES). Significant levels of intrusive and avoidance symptoms were reported by 20 per cent of the sample.

Similarly, Blanchard et al. (1995) interviewed 158 MVA victims one to four months post-accident using CAPS and SCID methods to assess PTSD. He found that:

- 39 per cent met DSM-III-R PTSD criteria
- 29 per cent showed partial symptoms
- 32 per cent seemed 'relatively unscathed psychologically'.

The three groups were tested with work-related activities and Blanchard found that those diagnosed with PTSD performed significantly worse than either of the other groups and a control group who had not been involved with a motor vehicle accident.

There were also significant effects on participants in terms of driving avoidance and phobia. Half of the PTSD sufferers who still drove avoided all discretionary travel.

The figures reported by Mayou et al. (1993) (within a general prospective study) of 41 per cent above clinical threshold at three months and 21 per cent at 12 months would seem to provide reasonable estimates of psychological harm. It has to be emphasised though, that such estimates are generally lower than many of the studies reviewed, and factors such as the scale of the event and additional characteristics (eg age) could legitimately explain clinical incidence rates.
5.8 Maritime employees

Once again, the majority of the research deals with the impact of trauma on the survivors of maritime accidents rather than employees, or does not distinguish employees from other survivors in the presentation of findings. For example, Thompson et al. (1994) described the psychological after-effects on 27 survivors some ten months after a riverboat disaster. Although the sample scored high on the assessment measures (GHQ-28, IES, SCL-90), it was emphasised that there may have been a bias within this subset (around 33 per cent) of the survivors who had been referred for assessment by solicitors.

Joseph et al. (1993) reported a psychometric (IES, GHQ) investigation of 73 survivors of a ferry disaster. Their findings indicated that two to three years after the event, a significant proportion of these individuals continued to present symptoms indicating partial or full PTSD. The mean IES score for the sample was at the threshold figure of 35 suggested by Neal et al. (1994), and over two-thirds of the sample had above threshold scores on the GHQ-28.

An interesting perspective on the prevalence rates of disorders following maritime disasters comes from Rosen’s (1995) investigation of survivors of the Aleutian Enterprise sinking. Rosen reported that 19 of 22 survivors pursuing personal injury claims received a PTSD diagnosis that was maintained for more than six months. He noted that:

“This yielded an incidence rate for chronic PTSD of no less than 86 per cent, a rate in excess of any previously reported in the literature for any type of trauma. The extraordinary incidence rate appeared to be explained, in part, by crew members’ reports of attorney advice and symptom sharing”.

Rosen (1995)

Tauminen and Tuominen (1996) provided qualitative information on reactions of 38 survivors of the ‘Estonia’ disaster. Although no detailed information was reported about the clinical impact on the survivors, an interesting aspect of this report concerned the

Table 5.6 Prevalence of PTSD among maritime employees

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dixon, 1991</td>
<td>24 vicarious victims of Zeebrugge disaster</td>
<td>Immediately post-trauma</td>
<td>14/24 = 58%</td>
</tr>
<tr>
<td>Thompson et al., 1994</td>
<td>27 riverboat survivors</td>
<td>10 months post-trauma</td>
<td>High scores on GHQ-28, IES and SCL-90</td>
</tr>
<tr>
<td>Joseph et al., 1993</td>
<td>73 ferry disaster survivors</td>
<td>2/3 years post-trauma</td>
<td>66%</td>
</tr>
<tr>
<td>Rosen, 1995</td>
<td>22 shipping disaster survivors</td>
<td>Over 6 months duration</td>
<td>86%</td>
</tr>
</tbody>
</table>

*Source: IES review, 1998*

Workplace Trauma and its Management: Review of the Literature
implications for timing of debriefing activities and the additional impact of media attention on the well-being of survivors.

5.8.1 Vicarious victims

Two papers highlight several important issues relating to post-incident trauma in the Shipping Industry, (Dixon, 1991; Dixon et al., 1993) which have implications for employers in other industries. These are:

- the expression of traumatic reactions and PTSD by members of staff not directly involved in the event
- the management of the rehabilitation process for traumatised employees
- the role of the compensation process in the course of PTSD.

Dixon (1991) recounts the capsize of the ‘Herald of Free Enterprise’ passenger ferry in 1987, with the loss of 193 people, 38 of whom were members of the crew. Apart from survivors, the author identifies two additional types of victims of the disaster:

- **helpers**, who were involved in identifying the bodies of colleagues, and assisting grieving relatives and the vicarious victims
- **cross-channel ferry workers**, who had no direct contact with the disaster.

It is this second group of vicarious victims she focuses on.

Dixon (1991) proposes that once a disaster on the scale of Zeebrugge occurs, it effectively breaks through the denial defence mechanism which, she suggests, assists people in coping with jobs which expose them to risk. Thus, increasing anxiety at sea following the Herald capsize was not alleviated by continued exposure (ie going back to sea) which the authors attribute to the impossibility of achieving graded exposure to the fear-provoking stimuli. This is in line with the work of Leopold and Dillon (1963) who reported psychological deterioration over time, in a group of survivors of a marine explosion who remained at sea.

Further support for the notion of vicarious victims of the disaster may be taken from the rise in medical severance observed in P&O officers and ratings, from 31 in 1986 to 155 in 1987, only 16 of whom took severance before the 1987 disaster.

Vicarious victims of disasters have been recognised by other authors. Clegg (1988) and Taylor (1989) both described a category of victims who were not present at the disaster but who might easily have been, and who think that but for chance events, might have become either primary or secondary victims. Seventeen of a group of 24 cross-channel ferry workers fitted this category. Fourteen of these workers formed the sample
studied in greater depth by Dixon et al., (1993). Sample selection was on the basis of PTSD pathology without direct exposure to what became known as the Zeebrugge disaster.

The GHQ-28 scores revealed all subjects scoring over the critical symptom level of five for caseness, with eight scoring over 12. Severe problems with occupational and social functioning were apparent in this group, with only one crew member remaining in work (despite frequent absences) at first contact with the Mental Health Team. Social impairment, reduced or abandoned social activity was observed, along with relationship problems. A review of potential contributing factors yielded few signs of prior vulnerability in this group.

With the exception of two employees, medical severance was sought and obtained for all the group. It should be noted that the individuals concerned did not pursue medical severance but it was initiated on their behalf by the authors of the paper.

The implications of these studies on vicarious victims are potentially immense in that they give some idea of the psychological impact and the costs of vicarious traumatisation in employees from the same industry. These studies are, however, specific to a maritime setting and involve small numbers so should be treated with great caution. They do suggest an area for future research.

Dixon (1991) calls for routine screening of ‘others’ following a disaster, with the objective of identifying peripheral victims in need of help. This message is reinforced by the search for potential contributing factors which found little evidence of pre-disposing factors in the group studied.

In addition, the studies highlight the serious implications for the management of trauma in other industries, in terms of the difficulties in re-integrating employees back into work. This aspect of trauma management is explored further in Chapter 6.

The influence of the legal process and financial gain is suggested by those sceptical of PTSD and trauma-related illnesses. However, few disaster-based research programmes are free from this criticism.

5.9 Aviation

Within this field of transportation, the main classes of incidents include:

- mid-flight incidents
- take-off and landing accidents, and
- hijack/hostage incidents.

In the case of in-flight incidents, there are generally few survivors and most published studies focus on the impact on
rescue workers. Thus, some of this material will overlap with the sections on accident, emergency and rescue services. Another relevant group in such accidents are the relatives of passengers, although studies on this group have not been considered in the current review.

5.9.1 Crashes

Once again, survivors, rather than employees are the focus of research activity. There are some instances where survivors of aeroplane crashes seem relatively unscathed in the longer term. Sloan (1988) demonstrated that the high levels of stress experienced initially decreased rapidly and levelled off over time. In a similar fashion, it would seem from Slagle et al. (1990) that where the accident is less serious in terms of fatal injuries, then the incidence of PTSD symptomology is much reduced.

Carlier and Gersons, (1995) reported results of an investigation of an incident when a Boeing 747 crashed into two blocks of apartments in Amsterdam. A sample of over 1,200 people included 200 rescue workers, but the reactions of workers were not reported separately. In a six-month follow-up study, Carlier and Gersons reported that 26 per cent of the full sample were suffering from ‘full blown PTSD’, with 44 per cent suffering from ‘partial PTSD’ (20 per cent meeting criteria for re-experiencing and hyperarousal, 18 per cent re-experiencing only).

5.9.2 Hostage/hijack incidents

Thompson (1990) examined the reactions of 13 survivors of an aeroplane hijacking incident, including some employees, some two weeks post-incident. Eight subjects showed above threshold scores on the GHQ, with complaints of anxiety and intrusive memories, and disrupted home and work functioning being reported. Four of nine cases followed up at six months were above threshold on the GHQ.

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlier &amp; Gersons, 1995</td>
<td>Aeroplane/apartment block disaster survivors (including rescue workers)</td>
<td>6 months</td>
<td>26% full PTSD, 44% partial PTSD</td>
</tr>
<tr>
<td>Thompson, 1990</td>
<td>Hijacking survivors</td>
<td>2 weeks post-incident</td>
<td>8/13 = 62%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 months</td>
<td>4/9 = 44%</td>
</tr>
</tbody>
</table>

*Source: IES review 1998*

5.9.3 What can be learned from studies of transport industries?

The transportation field includes a very wide range of incidents which may include major incidents affecting large numbers of
people and attracting international media interest. However, it can also include incidents that will only affect a single individual. Of course, in major incidents, most of those involved may be passengers or members of the community and not employees, although they too may be owed a duty of care by the organisation, as highlighted by the recent ruling in the Kegworth air crash. Clearly, these other at-risk groups need to be taken into consideration when setting performance standards within the framework described by the HSE (1993).

The aviation, maritime and railway transportation fields produce relatively few incidents over any reasonable time period, though clearly aviation and public marine transport incidents have the potential for death and serious injury on a large scale. Railway incidents happen relatively infrequently and tend not to have such serious consequences. Road transport, on the other hand, has few major incidents, but thousands of small-scale traumatic incidents every year.

The consequences of accident-based traumatic experiences may be relatively similar across a wide range of event types. Certainly, there is evidence to suggest that following direct experience of a serious injury accident, a pattern of trauma-related psychiatric symptoms will be experienced by the majority of those involved. However, the methodological problem of sampling being biased in many studies towards those who were seeking compensation, tends to make generalisations from many of the studies difficult.

In the case of railways, the annual probability of exposure to a 'person under train (PUT)' incident has been shown to be as high as 12.5 per cent (Tang, 1994) for underground drivers. For drivers experiencing a PUT incident, the LUL research (Tranah et al., 1994) suggests one-third of drivers may tend towards 'psychiatric caseness' within one month of the incident, although this should fall to under ten per cent by six months. Beyond such incidents, it is worth noting the evidence from London Underground Limited that assault is a major problem and the biggest contributor to staff injuries. Hence, this would seem to be a significant area of inquiry for future research.

Concerning aviation incidents, the majority of in-flight incident studies have naturally concentrated on community survivors and rescuers/body handlers.

It would appear that the most serious area for incident-related trauma in this employment sector lies within road traffic accidents. It is estimated that around 15,000 company vehicle-related accidents occur per year in Britain. Although few empirical studies have focused on the effects of such accidents specifically among company employees, it seems reasonable to generalise from findings based on post-accident trauma within similar aged populations. From this information, it could be estimated that the chances of developing 'psychological harm'
following a road traffic accident may be as high as 40 per cent (from Mayou et al., 1993).

In summary, within the transportation sector, there is a wide variation in both the probability and severity of traumatic incidents. In relation to employees, although major disasters are thankfully rare, more common sources of traumatisation exists, in particular, acts of violence perpetrated by members of the public, and road traffic accidents.

A number of sources suggest that most people who have been exposed to a major accident would develop PTSD symptoms of some extent for some duration. There may be little difference across the modes of transport in terms of the impact of such incidents on subsequent mental health. The main difference between the impacts of such incidents (apart from individual characteristics) may well rest with the magnitude and rarity of the disaster whether it is of human making, and the resulting aftermath (inquiries, litigation etc.), and media coverage.

The maritime research illustrates that there may be cases where any organisation needs to consider its full complement of staff following a major incident, as even those who were not directly involved may exhibit symptoms of distress.

5.10 Emergency services

‘Emergency services personnel’ include ambulance service staff, fire-fighters and police working in recovery and rescue situations.

As emergency services personnel are particularly exposed to traumatic events, there is a reasonable body of research which uses them as subjects in attempts to measure and assess reactions to incidents. Much of this research emanates from the general occupational stress literature which includes a wide range of situations, from minor everyday irritations to the more major events which could be expected to result in heightened risk of PTSD or associated trauma reactions. As a result, PTSD is not always measured as an outcome. However, such research does tend to highlight certain types of incident that emergency workers themselves identify as placing extreme demands on the individual.

The following sections review the literature from each of the emergency services in turn, and identify the nature of incidents and the scale of any reported negative psychological consequences akin to trauma reactions.

5.10.1 The rescuer role

James (1992) addresses the ‘rescuer’ role of the emergency services, pointing out that they are involved in many aspects of assistance. These include:
• disaster control and direct rescue operations
• medical triage
• treating the injured and dealing with the dead
• information, communication and support services for the injured and their relatives.

The following sections go on to examine the rescuer role in more detail.

5.10.2 Emergency services personnel as secondary victims

Miletich (1990), in the preface of his annotated bibliography on police, fire-fighter and paramedic stress, lists the type of events to which ‘public safety’ professionals are required to respond:

• accidents
• natural disasters
• transportation disasters, and
• standby assistance at public gatherings.

He made the observation that these professionals, who often work in life or death situations, were interesting to the media in general, and often had their work romanticised on television and in the cinema. Miletich then stated that not only would much of the actual work be considered unsuitable for public viewing, but their work was often carried out in a critical, hostile and verbally abusive arena.

Miletich suggests that responding to dangerous, difficult and potentially life-threatening events under the glare of public scrutiny is intrinsically stressful. Many authors have taken this view, even going so far as to base their work on the untested assumption that work in the emergency services is inherently stressful (James, 1988).

Until the early 1980s there was little or no research into whether emergency workers experienced negative psychological outcomes as a result of their work. The first indications of psychological distress in emergency workers started to emerge from the work of Taylor and Frazer (1982), followed by Jones (1985); Duckworth (1986); and Shepherd and Hodgkinson (1990). This prompted the view that emergency workers should also be considered victims of disaster, secondary victims, and that provision should therefore be made to reduce the negative effects observed.

Evidence from major transportation incidents indicate that the various types of rescue workers present can also be a cause for concern in terms of the development of later disorders. Raphael et al. (1983) interviewed rescue workers following a rail disaster in Australia, indicating that 77 of 95 found the event stressful,
although ‘only about 20 per cent experienced specific psychological sequelae (depression, anxiety, insomnia)’. This would seem similar to the results reported by Andersen et al. (1991), where 18 per cent of a sample of 77 rescue workers met GHQ caseness, and ten per cent met IES criteria at a follow-up seven months after a rail disaster. It was reported that six per cent had PTSD of low to moderate severity at seven months.

5.10.3 Ambulance service

That traumatic events at work caused trauma-related reactions in paramedics was established as early at 1982 by Mason. Mason identified three specific situations (stressors) in ambulance work: infant death, mass casualties, and childbirth with complications.

Since then, many researchers have assumed that emergency work is inherently stressful and that a stimulus approach to their investigations was most appropriate. Adoption of this over-simplified model of human behaviour has tended to produce lists of stressors (or stimuli) and outcomes, with little attention paid to any moderating factors. Grigsby and McKnew (1988) examined work stress and burnout in 213 paramedics. The authors noted that ambulance workers had responsibility for human health and life, which lead to high stress levels, impacting on the employee’s own health and well-being. Paramedics were not only dealing with life and death medical emergencies, but often doing so in public environments which were potentially hazardous. However, their work did not distinguish trauma reactions from more general occupational stress.

Grigsby and McKnew found that burnout reported among paramedics was considerably higher than for other health groups. The three most important variables were: negative relations with co-workers, general job-dissatisfaction, and physical threat from the job. This suggests that ongoing features of the job impact on general well-being, but the extent to which they might influence trauma reactions remains unclear.

James (1988) suggested that while the unpredictability of the amount and type of work did influence the experience of stress, these same factors also contributed to the attraction for ambulance work (James, 1988; Robinson, 1984).

In 1991, Thompson and Suzuki investigated the perceived levels and effects of stress in ambulance staff engaged in emergency work. A questionnaire was used to measure the frequency and perceived stress of ten types of emergency callout. The authors found that the least frequent emergency calls, such as major fires and disasters, plus accidents involving children, were considered to be the most difficult to deal with.

Evidence of psychological distress was observed in 60 per cent of the sample, with 20 per cent showing high levels of
symptomatic distress. The Impact of Events scale (Horowitz et al., 1979) recorded high levels of intrusive memories. While the authors' findings are broadly in line with others working in the area, it should be noted that the sample size of 40 is quite small and only emergency ambulance staff were surveyed. Other authors, Hammill (1991) and Sparrius (1992), have also found organisation-based stressors to be the greatest source of pressure for ambulance staff.

The impact that the nature and frequency of traumatic events may have on psychological outcomes was identified by Ravenscroft (1993). Ravenscroft identified two types of trauma (as per Terr, 1991) and suggested that Type 2 trauma, ie continuous rather than one-off events, may be more typical of ambulance work. As a result, Ravenscroft considered emergency staff to be at continual risk of 're-infection', making the delineation of acute and chronic PTSD problematic.

Ravenscroft reported a 15 per cent prevalence level among London Ambulance Service staff, with 52 per cent suffering from recent mental disturbance or excessively high stress levels, as measured by the GHQ. Ravenscroft found that small emergency incidents, such as the death of a baby or child, were more highly associated with PTSD outcomes than big disasters. Half those reporting PTSD outcomes had never attended a major incident, with their PTSD allegedly resulting from fairly routine 999 calls. Ravenscroft proposed that the underlying cause of the high level of sickness absence reported in LAS could be attributed to what he termed as PDSD (Prolonged Duration Stress Disorder), and that an overhaul of the counselling service to deal with the reported levels of stress and PDSD was necessary.

5.10.4 Fire and rescue service

The work of fire-fighters has much in common, in terms of the events attended, with ambulance workers. Echoing Ravenscroft’s (1993) study of ambulance staff, Fitzpatrick (1994) also found that prolonged exposure to fairly routine 999 incidents is the main contributory factor in the PTSD reaction of fire-fighters.

Gersons (1990) also refers to 'sequential traumatisation' and suggests that this is generic to rescue, accident and emergency services (and to some extent reflects military deployments).

The range of employees able to claim for damages for PTSD was extended when one fire-fighter suffered PTSD as a result of his involvement in the rescue work following the King’s Cross fire. His condition was described as 'of moderate severity' and he received damages, not from his employers, but from London Underground Limited, who admitted liability.

Fitzpatrick reported that the King’s Cross disaster marked a turning point in the official line the London Fire Brigade took
toward the possibility of psychological damage of personnel ensuing from 999 work. PTSD has slowly come to be formally recognised as a significant health and safety issue. The official recognition of PTSD in fire-crews, led to the establishment of an extensive in-house counselling service in London Ambulance Service.

5.10.5 Police officers in recovery and rescue roles

Recovery work is very distinct from rescue work in that the opportunity for reward from saving lives is absent.

For background, a study by Brown and Campbell gives an appreciation of the extent of general symptomology in police personnel. Brown and Campbell (1990), in an investigation of occupational stress in Hampshire Constabulary, found GHQ scores similar to Stafford Fire Service, i.e. 22 per cent were found to be above threshold (in a sample of 954).

In a study by Kinchin (1994) of Thames Valley Police, he proposed that one in seven of all front line police officers may be suffering from symptoms of PTSD. Kinchin recommends programmes of education and awareness alongside Critical Incident Debriefing, and confidential counselling for PTSD sufferers.

Taylor and Frazer (1982) studied rescuers involved in body recovery following the Mount Erebus aeroplane crash and found that even considerable past experience in body handling did not prevent a negative reaction in those who were exposed to the great numbers of frozen and badly mutilated corpses. Jones (1985) also reported on the emotional effects in rescue workers of recovering and identifying human remains, and proposed that they should be considered secondary disaster victims. There is also research evidence to suggest that following a disaster, among emergency workers a delayed onset may be more common than an acute reaction (Duckworth, 1986; Shepherd and Hodgkinson, 1990; McFarlane, 1988).

Research by Singh and Raphael (1981) revealed that although the outcome for bereaved persons who have viewed the bodies of their deceased is improved, this may serve to increase the involvement of recovery workers with the task at hand. There is a conflict here for health and safety professionals who must balance the welfare of their staff with the needs of other parties.

Early studies on body recovery work suggest a high level of distress is associated with the task. Taylor and Frazer (1982) investigated a recovery team who operated in the aftermath of an aeroplane crash in Antarctica and found initial stress levels, as measured by the Hopkins Symptom Checklist, to be raised in 35 per cent of the sample. At a follow up 20 months later, seven per cent of the original sample required psychological treatment.
Raphael, et al. (1983-84) identified two factors which lead to symptoms: helplessness and uncertainty.

More recently, Thompson (1991) investigated the effects of body recovery in a group of volunteer police officers from Heathrow Police Station after their involvement in victim recovery following the Lockerbie aeroplane crash in 1988. Measures of possible outcomes were made using three questionnaires: the GHQ, the Impact of Events Scale, and the Eysenk Personality Questionnaire (EPQ).

- The GHQ scores indicated low levels of distress and 16 per cent of the sample were probable cases with only one officer showing high levels of distress.
- Moderate levels of impact, as measured by an IES score of 40 or above, were revealed for two of the sample but their GHQ scores were found to be zero.
- EPQ scores showed that the group were less neurotic and displayed less self-presentation bias.

In summary, ten per cent of officers had problems as a result of their duties, with three per cent needing actual treatment.

Mitchell, et al. (1991) also investigated the effects of recovery work in police officers after the Lockerbie disaster, who were seconded to assist in three main duties at the crash site: line searches for evidence, mortuary duty and patrol and security of the various sites. A number of measures, including the GHQ were used to collect both quantitative and qualitative data about symptoms.

A comparison of results showed that mortuary workers acknowledged the most symptoms, with line search officers reporting more symptoms than those on patrol. The most common symptom was sleep disturbance, which affected 43 per cent of those working in the mortuary and 30 per cent of the total sample. This was considered indicative of the failure to assimilate the experience.

Officers on mortuary duty and assigned to search tasks thought about their work much more than those on patrol who reported thinking about their duties very little. It is perhaps worth pointing out that those on search duties had the constant possibility of finding something disturbing rather than continual exposure. GHQ-12 scores for the three groups were compared and no significant differences in the level of psychological symptoms were found.

Closer examination of the mortuary group was undertaken to ascertain whether degree of exposure was related to the number of symptoms reported. Those who had spent the majority of their time on mortuary duties reported fewer physical symptoms and thinking less about their work than those who were rotated.
through other jobs. Analysis of qualitative data obtained by interview revealed that those who had spent more of their time on mortuary duties had more opportunity to understand the process of forensic examination and become intellectually absorbed in the enquiries. Thus, officers felt that they had contributed more to the criminal investigation and were better able to appreciate their own role. Spending less time on such duties did not allow officers to fully appreciate and make sense of the task being undertaken. Rather, they were more likely to be overwhelmed by the apparent scale of the task.

One year later, sickness absence data for both illness and injury were compared for the year preceding the disaster and the year following. An increase of 70 per cent more absence, post-disaster, was found, compared with a force-wide increase of just five per cent.

Braddon et al. (1993) investigated two body recovery teams involved with the Clapham rail disaster. The first team all came from one police station. None had received any specific training on disaster work or body handling duties. The second group were part of the Heathrow Team that went to assist in the body recovery duties following the Lockerbie disaster that Thompson investigated (see above). These officers were all volunteers who had received some relevant training prior to their secondment, were aware of the type of work to be undertaken, and had the opportunity to become a close and self-supportive team. A third research group was identified and used in the study: members of the first battalion Royal Highland Fusiliers who had been ordered to assist at Lockerbie and whose duties included the search for bodies.

Braddon et al. found that:

- 72 per cent of the officers experienced at least one post-traumatic reaction in the six months after the disaster
- 30 per cent had one or more post-traumatic stress reaction which lasted more than six months.

Analysis of sickness absence data revealed a statistically significant 58.5 per cent increase in sickness absence reported by police officers following Clapham, in line with Mitchell et al. (1991). The authors concluded the health histories and sickness absence of police officers detailed from normal duty to the Clapham rail crash site were seriously affected by that experience, unlike their colleagues similarly detailed to work at Lockerbie.

Alexander (1993a) examined stress in volunteer police body handlers three years after their involvement in the recovery and identification of human remains after the Piper Alpha Oil-Platform Disaster in 1988. Three measures were used to identify psychological distress: the Revised IES; a modified version of the
Body Handling Questionnaire (BHQ), devised by Alexander and Wells (1991); and The Hospital Anxiety and Depression scale (HAD, Zigmond and Snaith, 1983). The comparison of IES results at three months and three years after the event revealed that while avoidance symptoms remained the same, a significant reduction in the intrusion and total scores was observed, revealing a reduction in the amount of subjective distress. In other words, at three months 26 per cent of officers reported experiencing intrusive flashbacks ‘sometimes’ or ‘often’, while at three years this had dropped to nine per cent.

5.11 The everyday versus the exceptional

That police officers and other professional helpers or rescuers may be adversely affected by disasters was established by Duckworth (1986), following research into the Bradford City Football Ground fire.

However, the author argues that incidents which are encountered daily have the potential to produce psychological effects which are as severe as those of disasters. In this, Duckworth’s observation about police officers is supported by that of Ravenscroft (ambulance workers, 1993) and Fitzpatrick (fire-fighters, 1994).

Taking the West Yorkshire Force as an example, Duckworth reported that just eight per cent of officers were involved in the rescue and aftermath of the Bradford fire, whereas around 15 per cent of officers were assaulted during the course of their work to a degree that led not only to sickness absence but to medical retirement.

Duckworth argues that police officers are more able to remain psychologically detached in potentially traumatic situations as a result of their professional training, experience and official role. When this professional detachment is breached, however, and ‘where the nature of an incident leads a police officer to respond in a personal manner as opposed to a professional one, he or she may become at least as terrified as any victim’.

In 1991, Duckworth (1991a) examined the psychological effects of everyday police-work incidents. The psychological screening scores obtained from the total group of 34 were compared with three groups of police officers:

- officers adversely affected by the Bradford fire disaster
- officers adversely affected by their experiences during or after the Hillsborough crush disaster, and
- a comparison group of 100 officers who had not sought help for any psychological problems.

When the GHQ was scored to establish likely ‘caseness’, the mean scores for each group of officers exceeded that deemed to
indicate a ‘likely case’. That is, that the consequences of psychological distress were as severe for officers who had experienced events associated with routine police work as those who had working experience of major disasters. Indeed, the ‘routine police work’ group obtained the highest mean score on the GHQ.

In conclusion, Duckworth (1991a) points out that while senior police officers are becoming increasingly more aware that psychological screening, debriefing and advisory facilities may be useful following a disaster, they are failing to realise that the impact of non-disaster events is equally as devastating. Also, that the effect of non-disaster events may serve to increase officers’ vulnerability and thus impair subsequent functioning.

5.12 What can be learned from studies of emergency service personnel?

The first and most consistent message from the literature is that although large scale traumatic events are damaging, everyday 999 calls can provide just as much fodder for post-incident reactions. It is clear that in certain roles, sequestrual traumatisation may pose the main threat.

Mitchell et al.’s study (1991) showed that body recovery duties had a considerable impact on the officers involved, and on their subsequent sickness absence levels. It would appear from the same piece of research, that the amount of exposure to a traumatic event may be less important than the nature of that exposure. In this case, the amount of understanding officers had about both the operation and their contribution to it seemed to mediate against developing trauma-related illnesses.

From the literature, the following factors were identified as having an important mitigating influence on the outcome observed for the Lockerbie body recoverers:

- They were volunteers who quickly became a cohesive, supportive team.
- They were well managed and organised.
- They were prepared and trained (to some extent).
- Support was available to them on-site.

These are all factors which are within an employing organisation’s control and should provide useful pointers for developing other stress reduction strategies to protect those involved in post-disaster-scene work.
Table 5.8 Prevalence of PTSD among emergency services personnel

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Populations</th>
<th>Time period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thompson and Suzuki, 1991</td>
<td>Ambulance staff on emergency work</td>
<td>Current</td>
<td>Psychological distress in 60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20% high levels of symptomatic distress</td>
</tr>
<tr>
<td>Ravenscroft, 1993</td>
<td>London Ambulance Service personnel</td>
<td>Current</td>
<td>15% PTSD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recent</td>
<td>52% mental disturbance or excessive stress levels</td>
</tr>
<tr>
<td>Kinchin, 1994</td>
<td>Front line police officers</td>
<td></td>
<td>14% had PTSD symptoms</td>
</tr>
<tr>
<td>Taylor and Frazer, 1982</td>
<td>Aeroplane disaster body recovery team</td>
<td>Immediately post-trauma</td>
<td>35% raised stress levels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 months later</td>
<td>7% required psychological treatment</td>
</tr>
<tr>
<td>Thompson, 1991</td>
<td>Police volunteers at Lockerbie</td>
<td></td>
<td>10% experienced psychological problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3% needed treatment</td>
</tr>
<tr>
<td>Mitchell et al., 1991</td>
<td>Body recovery personnel at Lockerbie</td>
<td></td>
<td>30% had sleep disturbance</td>
</tr>
<tr>
<td>Braddon, 1993</td>
<td>Clapham rail disaster body recovery personnel</td>
<td>over first 6 months post-trauma</td>
<td>72% experienced at least 1 post-traumatic reaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 months plus</td>
<td>30% had 1 or more post-traumatic reactions lasting more than 6 months</td>
</tr>
<tr>
<td>Alexander, 1993a</td>
<td>Volunteer police body handlers</td>
<td>3 months</td>
<td>25% experiencing symptoms ‘sometimes or often’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 years</td>
<td>9% experiencing symptoms ‘sometimes or often’</td>
</tr>
</tbody>
</table>

Source: IES review, 1998

Similarly, working in a situation of uncertainty about finding a body was associated with higher levels of reported symptoms than constant exposure to the recovered bodies.

5.13 The financial sector

It is comparatively recently that attention has turned to the prevalence and management of post-incident reactions in the financial sector. For the main part, this research has focused on the impact of raids and hold-ups on employees, although the wider concern of violence against staff is also recognised (Tehrani, 1995).

5.13.1 The frequency of raids

Figures on the frequency of raids is available from a number of sources. On a global scale, figures for 1993 for all industrialised
countries indicated an overall risk rate (i.e., branches divided by hold-ups) of 1:19, with the total for Europe in 1993 being 8,252 registered bank robberies, a risk rate of 1:24 (Kleber and van der Velden, 1996).

The Banking, Insurance and Finance Union (BIFU, 1991a) published guidelines on aftercare and post-raid counselling in 1991. Their figures indicated that the number of raids on banks and building societies had nearly doubled in the four years up to 1991, and that at the time of their report, there were up to seven office raids every day throughout Great Britain. The total number of attacks in 1990 was estimated at 1,060. Despite these figures, Kleber and van der Velden point to the relative scarcity of research into victims. What research has been found is discussed in Section 5.13.4.

5.13.2 Other incidents

In addition to raids, there are other smaller scale traumatic incidents to which employees in certain parts of the finance sector risk exposure in the course of their work. Such incidents include violence, defined by the HSE as:

'Any incident in which a person is abused, threatened or assaulted in circumstances relating to their work.'

IRS Employment Trends 567 reports on activities at Cashco, one of the constituent businesses of the Post Office. Together with the Post Office's Occupational Health Service Department, Cashco started developing a trauma management response in 1992. Their particular concern was the increase in hostage taking that they had observed in similar commercial companies. Risk analysis revealed that attacks fell into four categories (in order of likelihood of occurrence):

- 'across the pavement' attacks
- hijacking
- traumatisation of managers, colleagues or family, and
- hostage taking.

Other parts of the business (e.g., the subscription services business which administers and enforces the TV licence system, including employees who visit houses where there is no record of a licence) found the most severe attacks on individual staff occurred on the street or inside property.

5.13.3 Scale

An example of the implications for an individual organisation can be gauged from figures published by the Woolwich Building Society (Letts and Tait, 1995). Figures for the two years to the end
of 1995 revealed that 420 members of staff had been affected by robberies, burglaries and assaults (out of 4,100 staff in 420 branches), ie ten per cent of staff over two years. However, these are not diagnosed cases of PTSD. Letts and Tait’s work also suggested that incidents were becoming more violent, and that with improved security systems incidents such as hostage taking appeared to be occurring more frequently. Figures from the Post Office (Tehrani, 1995) found average sickness absence following a raid or traumatic experience to be eight days (prior to the introduction of a trauma care strategy).

Sometimes the true risk is difficult to ascertain. This was the experience at the Post Office’s Subscription Services business, as a high level of verbal abuse was seen as part of the job (IRS Employment Trends, 1994).

5.13.4 Impact on staff

While these figures give rise for concern, not all those involved in a raid or other traumatic incident will necessarily suffer psychological trauma as a result. In an overview of empirical studies into the outcomes of extreme events, Brom, Kleber and Witztum (1991) found that typically between 18 and 20 per cent of all people who go through extremely distressing events were left with permanent coping disorders associated with PTSD. In addition, those who did not develop PTSD were not necessarily free of other symptoms caused by the trauma.

Hodgkinson and Joseph (1995) measured the responses of 228 female bank staff following armed raids. They found that three weeks later, average scores on a measure of general health (GHQ) were well above the cut-off point indicating risk of psychiatric disorder. At the three month stage (following psychological debriefing which is discussed in Chapter 6), the mean scores had returned below the threshold, indicating that the majority of respondents had returned to their usual levels of psychological functioning. The study does not report on the numbers of those affected. However, their findings showed that different types of symptoms were more important at different times following the incident. Symptoms associated with intrusion and replicates (thinking about events when you didn’t mean to, and other things being reminders of the situation) were predominant in accounting for the variation in symptom reporting at the three week stage, whereas three months later, items associated with avoidance explained more of the pattern of symptom reporting.

An additional aspect of experiencing trauma in a financial services setting which is often referred to in this literature is that of secondary victimisation. Kleber and van den Velden point to the employees of banks and money transport companies, who often end up feeling under suspicion themselves as they are not adequately informed about police processes, etc.
Research into traumatic events in financial services shows that levels of risk can change rapidly over time and employers need to monitor some crime statistics to stay abreast of the true level of potential risk. Also, attempts to prevent one type of incident, eg raids may generate a more extreme response, eg hostage-taking, from perpetrators.

In some occupations, staff may accept frequent violence as part of the job, and not report incidents at their true frequency. Additionally, employees may be at risk from incidents which take place away from the workplace.

In respect of the likelihood of developing a traumatic reaction, the evidence is not very clear but figures of ten to 30 per cent have been reported. The research of Hodgkinson and Joseph also raises the possibility that for armed raid trauma, certain symptoms may appear in a particular sequence.

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Exposure to raid trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kleber &amp; van der Velden, 1996</td>
<td>European financial services establishments</td>
<td>One year</td>
<td>1:24 per site</td>
</tr>
<tr>
<td>Letts &amp; Tali, 1995</td>
<td>One building society network</td>
<td>Two years</td>
<td>1:10 per branch staff member</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hodgkinson &amp; Joseph, 1995</td>
<td>228 female bank staff</td>
<td>Three weeks</td>
<td>Average scores above threshold</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Three months</td>
<td>Average scores below threshold</td>
</tr>
</tbody>
</table>

Source: IES review, 1998

5.14 Non-emergency health care workers

Research into trauma in the health sector more generally is not as developed as that for ambulance staff and accident and emergency departments. Research tends to be small-scale, occupation based or department specific. The nature of the work also means that there has been a very strong tradition of researching violence in the workplace as opposed to trauma.

5.14.1 Violence at work

Evidence suggests that the occurrence of violent incidents to National Health Service staff varies by speciality (Health and Safety Commission, 1987). Their findings indicate that accident and emergency departments, medical wards, psychiatric, mental handicap and geriatric hospitals all showed higher rates of assault. Staff working in the community appear to be less at risk than those working in institutions. However, there is relatively little data available on the problem of violence towards
community nurses, and there is concern about the under-reporting of such incidents.

It is increasingly being recognised that the psychological consequences of violence may well be as serious as the physical ones, and can result in PTSD (Leather and Dickson, 1995). Despite this, research on violence is of limited help in understanding the prevalence of PTSD in the health sector, not in the least because the recording of violence covers a wide range of events, many of which are just seen as part of the job.

Much research has focused on the prevalence of violent or aggressive acts, but little has looked at the impact of these events on employee victims in the health sector (Flannery et al., 1995).

5.14.2 Post-incident reactions in the health sector

Some evidence of the relationship between violence and post-incident reactions can be gleaned from Flannery’s evaluation of an assaulted staff action programme set in a US state mental hospital.

Over a 22 month period there were 327 episodes of assault, and the programme responded to 278 calls for assistance. A total of 279 staff accepted assistance and many reported symptoms of trauma soon after the assault. For the great majority, these symptoms had receded within three to ten days of the event (between 75 and 91 per cent).

The incidence of traumatic events and reactions has been under researched in relation to non-emergency health care workers. It has been suggested that this is in part due to under-reporting of incidents, and a focus on recording violence rather than traumatic events. However, as expected, Flannery’s study found that the majority of assaulted employees displayed typical trauma reactions.

5.15 Industrial processes

5.15.1 Offshore oil and gas industry

Despite many major accidents, such as the loss of the Alexander L Kielland and Piper Alpha platforms, very little empirical work has been undertaken to examine the effects of major incidents on employees. What work has been done (Erslam et al., 1989; Alexander, 1993b, 1997; Alexander and Wells, 1991) has tended to focus on the effects of the disasters on rescuers and the factors which influence whether or not they develop PTSD. However, in these geographically remote installations, both survivors and non-professional rescuers are of interest, as all are employees. Alexander and his colleague Wells’ work is reported in Section
5.10 on the emergency services. The findings of Erslund et al. (1989) will be discussed here as they shed some light on the blurring of ‘victim’ categories that Taylor (1989) and Dixon (1991) put forward, and have implications for the training of offshore workers.

Erslund et al. (1989) investigated the stress outcomes of Norwegian rescuers nine months after the loss of the Alexander L Kielland oil rig. The authors found differences in outcomes for professional and non-professional rescuers. The non-professional rescuers were workers from the actual installation; workers whose designated rescue tasks were a function of their offshore work roles. The majority of professionals had previously participated in rescue work and had participated in training exercises. The professional rescuers arrived around 30 minutes after the capsize and therefore had some time, albeit short, to prepare themselves mentally and physically for the challenge ahead. The non-professionals were unable to prepare themselves and 23 per cent were reported as witnessing drownings of victims in the immediate aftermath.

Assessment of outcomes was made using a questionnaire which addressed the following main areas: rescuers’ competence levels, disaster stressors, coping problems and stress reactions during the rescue, working through the emotional experiences and the post-disaster health effects. The Impact of Event Scale (Horowitz et al., 1979) was used to determine if the usual symptoms of intrusive experiencing and avoidance behaviour were present. More non-professional rescuers found their ability to plan before acting was disturbed, and significantly more of this group experienced stress reactions such as uncertainty, anxiety and restlessness during the rescue work. Eighty-eight per cent of all rescuers reported the need to share their feelings with others in an attempt to work through the disaster experience, and 63 per cent of those who did share their feelings found the experience ‘good’.

Seventeen per cent of professional rescuers and 25 per cent of non-professionals reported poor mental health nine months after the disaster. Also, not having had previous experience of rescue participation was associated with poor mental health. The majority of rescuers who reported severe or extreme stress reactions during the rescue work went on to report poor mental health nine months on, despite having some opportunity to vent their feelings about the disaster. While the evidence for the effectiveness or otherwise of different post-disaster interventions is discussed in Chapter 6, this result suggests a ‘high risk’ group which may be identified at the acute stage of the disaster for subsequent monitoring and therapeutic intervention. Around 13 per cent of all rescuers had IES scores suggesting they had developed PTSD.

Holen (1990) also reported an investigation following the Alexander L Kielland oil rig disaster. It was noted that the
occurrence and persistence of sick leave was found to be significantly higher among survivors compared with a matched group of unexposed oil workers. Ersland et al. (1989), investigated the impact of the same disaster on rescue workers. Some nine months after the disaster, around 24 per cent reported their mental health to be poor.

Twenty-three out of 66 survivors of the blow-out on the Ocean Odyssey semi-submersible drilling rig were interviewed 12 to 14 months after their evacuation (HSE, 1997). No measures of psychological impact were taken, but the report notes that while the majority of survivors were back working offshore at the time of the interviews, a significant minority (five) remained unemployed. The report concludes that of those interviewed, nearly one-quarter found their working lives radically altered by the incident.

The research associated with oil and gas extraction reinforces March’s (1993) observations regarding the dose-response and the particular ‘toxicity’ of some traumatic events.

Ersland et al.’s (1989) results have implications for the design of training systems discussed in Chapter 6, and their research also suggests that it may be possible to detect high-risk employees by identifying those with particularly acute reactions to the event.

<table>
<thead>
<tr>
<th>Researcher and date</th>
<th>Population</th>
<th>Time period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ersland et al., 1989</td>
<td>All rescuers (both professional and non-professionals)</td>
<td>9 months post-disaster</td>
<td>13%</td>
</tr>
<tr>
<td>Ersland et al., 1989</td>
<td>Rescuers</td>
<td>9 months post-disaster</td>
<td>24%</td>
</tr>
<tr>
<td>HSE, 1997</td>
<td>Survivors</td>
<td>12-24 months post-disaster</td>
<td>25% unemployed and unable to work offshore due to experiences.</td>
</tr>
</tbody>
</table>

Source: IES review, 1998

5.16 Other industrial processes

It would be expected that employees working in heavy industry, e.g. mining, and/or with potentially dangerous chemicals or machinery, would be at risk from traumatic events. In this section, the literature regarding the response of factory workers to a disaster, and a strategy for post-trauma management in a section of the mining industry will be considered.

5.16.1 Mining

Unfortunately, it has not been possible to identify any literature which reviews the level of risk or incidence of PTSD among
mining employees. However, following a South African mine shaft explosion in which 52 employees were killed, Badenhorst and Van Schalkwyk (1992) put forward a programme to minimise post-traumatic stress in miners, clearly recognising that such risk existed. This programme is discussed in more detail in Chapter 6.

5.16.2 Factories

Weisaeth (1989) carried out a prospective, longitudinal cohort study of an entire disaster population to test the face validity, descriptive and construct validity of the PTSD diagnosis using DSM-III-R.

The disaster in question was an explosion in a Norwegian paint factory, followed by a series of smaller explosions and a fire which raged for 36 hours engulfing the factory, and totally destroying the production plant and warehouse. Six employees died in the conflagration and all the bodies were retrieved and identified, some after a few weeks.

Survivors were divided into two categories dependent on their proximity to the seat of the explosion, the danger zone. A third group of employees was identified who had not been directly involved in the disaster: that is were not at work, but who may have witnessed the event and/or taken part in the rescue operation. The method used was a semi-structured interview, including 30 possible post-trauma symptoms and the State Anxiety Inventory. Data were collected immediately post-event, in practice up to five weeks after, and then again after seven months. The completion rates reported were extremely high, being 90.9 per cent of the high stress exposure group, 98.3 per cent of the medium exposure group and 100 per cent of the supposedly low stress exposure group.

Weisaeth considered that the findings demonstrated evidence in support of the face validity, and descriptive and construct validity of the PTSD diagnosis. The content of the responses was found to reflect experience of the disaster trauma, and its severity of response, reflected the intensity of stress exposure.

The literature on heavy industry is, unfortunately, scanty. However, the South African management plan demonstrates that in some industries an awareness of trauma-related ill health and the impact that it has on organisations, is long established.

Weisaeth's work with factory employees is also interesting in that it demonstrates the link between severity of trauma and the likelihood of illness. It also shows that for some organisations, disaster training may have a role to play in trauma management strategies.

Trauma management policies and pre-trauma training interventions will be discussed in Chapter 6.
5.17 The nuclear industry

The nuclear accident at Three Mile Island (TMI) illustrates that accepted classifications of victims may have little utility in major incidents. For example, the categorisation of TMI plant workers showed considerable complexity as they were invariably part of the community as well as primary victims (Taylor, 1989).

An explosion occurred at the Three Mile Island (TMI) plant in Pennsylvania in 1979. This was produced by a 'complex array of human errors and mechanical failures' (Baum and Fleming, 1993), and 'preventable errors of judgement and procedures' (Hornick, 1987). The amount of radiation emitted as a result was just over half that of the background radiation of the area and no immediate casualties were reported.

Chisholm et al. (1981) reported on the effects of the accident on nuclear workers at TMI who were considered to have special status in the situation. This was due to their direct involvement as TMI employees, with not only a psychological and economic involvement in the outcome of the situation but a responsibility to control the plant and return it to a safe condition. In addition, as members of the local community, they shared in community concerns.

The study used a sample of permanent staff at TMI and a control group of nuclear workers from another plant around 40 miles away. The results showed that working at the site of the accident had a major psychological impact on nuclear workers. TMI workers were more upset during the incident and perceived greater threat to their physical health. They were more demoralised and uncertain about their occupational future, felt that the public view of their performance was not justified, and that their employer was less trustworthy in providing information about the incident.

Chisholm et al. (1983) reported the results of their study in more depth following previous work on the employee population which revealed the impact of the incident on a broad range of psychological variables (Kasl et al., 1981a, 1981b; Chisholm and Kasl, 1982).

Certain key findings illustrate some of the issues we need to consider further. For example, supervisors who were working near the seat of the explosion, revealed a pattern contrary to that normally assumed, that proximity leads to greater tension. Proximity appeared to lessen several aspects of job tension. It was speculated that this was due to the availability of 'direct cues' about the size and nature of the crisis situation.

Dohrenwend et al.'s (1987) findings from the general population that residential proximity to the plant (five miles) influenced the strength of impact of the incident, were not supported in the
workers population. Indeed, Kasl et al. (1981b) reported nuclear workers' perceived 'benefits' of living close to the plant: higher job satisfaction, stronger identification with the company, higher occupational self-esteem and a more favourable view of the public perception of their work performance during the incident.

The main points emerging from the TMI research seem to be that while there is an impact on employees, it is not necessarily predicted by proximity to the incident. Rather, that being prevented from doing job tasks is more important in determining traumatic reaction to the event. These findings tend to support the work of people like Alexander, Mitchell and Thompson (see Emergency Services) that being fully immersed in the task at hand with some prior knowledge of the goals of the task and a positive assessment of the skills needed to attain those goals, conferred a sense of control which had some mitigating effect on possible psychological outcomes. The role of the organisation, TMI's owners, proved to be of prime importance in the way it failed to disseminate accurate and useful information in a timely manner, and created a climate of mistrust.

Following the nuclear disaster at the Chernobyl plant in 1986, Koscheyev et al. (1993) assessed chief operators at four points in time. Using the MMPI, the authors found significant health concerns, depression, and other indicators of traumatic reaction in those operators working at the plant, which increased over time when compared with control groups. The findings were attributed to continuing concerns with the safety of the plant and having attracted workers who were less well adjusted before volunteering to work at the plant.

The nuclear industry workers who have been studied post-trauma, demonstrate a complex pattern of reactions. It has been suggested that being physically close to the traumatic event may be less stressful than being slightly removed from it. Chisolm et al. (1983) proposed that access to information about the true extent of the accident may reduce the perceived risk.

Chisolm et al.'s research also seems to suggest that timely and honest management communications may have an important impact upon employees' well-being post-trauma.

It also appears to be the case from Koscheyev et al.'s (1993) research that workers' long term well-being may be impaired if, following an accident, their concerns about safety are not resolved.
6. Managing Post-Incident Reactions

This chapter examines the published research evidence on the efficacy of different approaches to the management of post-incident reaction. Its emphasis is on those approaches which are most likely to be used in a work setting, but some consideration of other approaches is also given.

6.1 The evidence for intervention

Sadly, good quality evaluations of trauma management programmes are relatively sparse. Foa (1997) has suggested that research on the efficacy of psychosocial treatments for PTSD have only recently begun to approach acceptable standards. In part, this is due to the difficulty of satisfying the criteria for an empirically robust piece of research (eg reliable pre-incident measures, delayed treatment comparison groups and control groups etc.). Additionally, research methodologies are diverse, and as a result, research findings can be difficult to compare.

Having said that, more and more empirical studies of specific treatment approaches are now being undertaken and the findings published (Raphael et al., 1995; Foa, 1997). Additionally, a growing number of organisation-based opportunistic research studies have been reaching the public forum over the last few years (eg Tehrani, 1996, 1997; Letts and Tait 1994). This work provides a valuable insight into the workings of trauma management programmes in a real world setting.

Once again, the research can be divided into pre- and post-incident strategies.

6.2 Pre-incident interventions

There are a number of techniques available to organisations designed to reduce the impact of traumatic events on employees, which can be introduced in anticipation of the hazard. These can be grouped into three categories:

- choosing employees who are less susceptible to trauma and/or stress
- training staff so they are prepared for traumatic events
• ‘inoculating’ staff against stress.

These are discussed in turn.

6.2.1 Recruitment and selection

Most of the research on recruiting and selecting stress-hardy recruits has been conducted in relation to military personnel, although the emergency services have also expressed some interest in these techniques.

Friedman et al. (1994) noted that screening out military recruits who are at greatest risk for developing PTSD was one preventive measure under consideration by the US military.

US military research has included studies of the provision of realistic job previews and has indicated improvements in performance and turnover among recruits into basic training. Furthermore, research within the US Air Force (e.g. Fiedler, 1990) focused on the mental health screening of trainees and reported on the effectiveness of brief interventions in reducing minor adjustment problems.

The use of specific selection procedures to screen for stress-related characteristics was not particularly mentioned by contributors to a recent NATO review of stress-related interventions (Mangelsdorff, 1994). However, the UK contributors to the review noted that in respect of the selection for training as commissioned or non-commissioned officers at least:

‘Selection to fulfil these roles is based partly on assessments of the individuals’ personality traits and performance in training as possessing the necessary personal qualities of psychological stability and toughness.’

Davey (1996) looked at current developments in police training and research in the fields of post-traumatic stress and disaster aftermath. He first reports Crowe and Stradling’s findings (1993), on dimensions of stress in a British Police Force. He goes on to say that ACPO has sought the advice of the BPS and other organisations regarding testing for mental resilience at the selection and recruitment stage. Advice given was that specific monitoring during the probationary period was likely to produce evidence on which judgements of suitability could be made. The advice, which also advocated stress audits, is being considered by the ACPO Joint Working Group in their review of force criteria on fitness to serve.

Similarly, Elliot and Smith (1993) also proposed psychological testing for hardiness at the initial recruitment and assessment stage, for fire-fighters. Eades (1995) examined the concept of hardiness and stress-resilience for the selection of emergency personnel.
Although a number of studies have examined the potential for a range of characteristics (e.g., neuroticism, ‘hardiness’) to moderate the effects of traumatic experiences on well-being, there remains some debate as to how useful such measures would be in selecting for high risk positions. However, there may be some evidence to support the hypothesis that measures of negative affectivity (Parkes, 1990), perceived control (Folkman et al., 1986) as well as general coping efficacy (e.g., Folkman et al., 1986; Rick and Guuppy, 1994) may contribute to the extent of an individual’s mental health reactions to a given incident.

6.2.2 General training

Training seems to be commonly accepted as providing the major contribution to psychological preparedness within the military environment.

It is clear that in settings where major events are a possibility, then the provision of realistic simulations of operational conditions in training exercises would maximise the psychological training benefits. It is noted that a number of NATO member states provide training/education in areas such as ‘morale and spiritual values’ which cover issues such as dealing with tragedy and substance misuse. Additionally, US contributions emphasise the role of generic health promotion programmes in improving and maintaining ‘military readiness and the quality of life of Department of Defence personnel and other beneficiaries’ (see, for example, Mangelsdorff, 1994). Health promotion in this instance includes ‘tobacco use prevention and cessation, physical conditioning, nutrition management, alcohol and drug abuse prevention, stress management, early identification of high blood pressure, and elevated cholesterol blood levels’.

Bradden et al. (1993) found some evidence that training reduced the likelihood of experiencing traumatic reactions for body recovery teams following a disaster. Based on qualitative data, Mitchell et al. (1991) found that individuals who had more opportunity to understand the purpose of their task, felt they had contributed more to the investigation and were better able to appreciate that their own role was less likely to develop post-trauma reactions.

6.2.3 Stress-specific briefing/training

Stress-specific training focuses on specific anticipated stressors likely before a particular operational period, also referred to as a ‘stress inoculation’ approach (Friedman, 1990). Paton (1994) described a small study of a ‘schema theory’ based training intervention within a group of fire-fighters providing search and rescue services following the Armenian earthquake in December 1988. The results did not suggest that there was a significant impact by this particular intervention on outcomes measures.
(including the IES), although it was felt that the general approach held promise for reducing the severity of impact of disaster experiences.

For the UK military, the recent approach has consisted of video presentations (eg The Royal Navy's film 'Battle Stress') and some self-help and self-test materials, prior to transit to the theatre of operations. Overall, the UK report noted that 'psychological techniques of personal stress reduction and psychological first-aid for others are not generally taught'. The UK report also noted a small amount of formal training for commissioned and non-commissioned officers concerning the physical and psychological well-being of their subordinates. In addition to emphasising the role of general leadership competencies in promoting well-being, a tactical aide-memoire assists field commanders in recognising and dealing with combat stress reactions.

From the USA, detailed descriptive reports are available on material aimed at 'self-help' and 'buddy aid', covering the recognition of signs of stress, coping techniques and brief interventions. There are training aids on 'battle fatigue' aimed at all soldiers, particularly junior enlisted, and other packages aimed specifically at leaders. Generally, the expected input from leaders would seem to go as far as providing some debriefing assistance and immediate support. There is clearly an expectation that recognition of signs of more serious disturbance requires referral for expert assessment and intervention.

As an adjunct, Paton (1992, 1994) found that induction training which prepared emergency workers for what to expect was more effective than stress inoculation, or having previous disaster experience, in reducing symptoms of traumatic stress, both of which were more effective than no preventative interventions.

6.3 Post-incident interventions

By far the most commonly used form of post-incident intervention is that of psychological debriefing. Debriefing has been applied, in its many forms and guises, in a wide range of UK organisations in response to traumatic incidents.

6.3.1 Origins of debriefing

The principles of crisis intervention have been used in military settings since the First World War with a view to returning officers identified as acute psychiatric casualties to active combat duty as soon as possible (Glass, 1975; Price, 1984; Copp and McAndrew, 1990). A framework of four treatment principles, which can be summarised as PIEB, Proximity: Immediacy: Expectancy and Brevity have been identified (Salmon, 1919; Artiss, 1963; Levav et al., 1979). Levav et al., (1979) and Solomon and Benbenishty, (1986) investigated the benefits of PIEB and
found an increased ability of soldiers to return to active duty and decreased incidence of PTSD on follow-up. Any failure of the procedure initiated transfer to rear hospitals. Brown and Williams (1918, 1919) and Appel, Beebe and Hilger (1946) also found that immediate psychological support given to soldiers facilitated a quicker return to combat that those managed later in hospitals behind combat lines.

Breznitz (1980) reported a reduction of 60 per cent in the incidence of psychiatric disturbance, including PTSD, as a result of group and individual psychological support services used by the Israeli Defence Forces in Middle Eastern combat situations following on from the 1967 war. Aguierta (1990) identified the techniques used in so-called ‘classical’ interventions which aimed to restore pre-crisis levels of emotional and functional equilibrium as follows: promoting an understanding that the crisis and psychological responses are linked; ventilation of feelings; exploration of alternative coping styles; mobilising social support; promoting resolution of the crisis and planning for any future difficulties.

6.4 Current models of debriefing

Two authors, working independently, devised the intervention following exposure to traumatic stress referred to as ‘debriefing’ — Mitchell (1983) and Dyregrov (1989). Raphael (1986) has also made a contribution to this field. Mitchell named his technique ‘Critical Incident Stress Debriefing’ (CISD), while Dyregrov referred to his simply as ‘Psychological Debriefing’ (PD). The need for such an intervention arose initially out of Mitchell’s field observations of fire-fighting and emergency medical service workers and other observations of psychological distress in emergency workers, leading on from exposure to traumatic incidents which involved physical or psychological threat, either direct or indirect (Mitchell, 1983; Dyregrov, 1989; Parkes, 1991).

6.4.1 Aims of debriefing

Mitchell’s original goals for CISD were simply to:

1. mitigate the harmful effects of traumatic stress on emergency personnel, and
2. accelerate normal recovery processes in normal people who were experiencing normal reactions to abnormal events.

He believed that CISD would be an important factor in the prevention of PTSD and post-traumatic stress in high-risk occupational groups (Mitchell, 1983, 1988a, 1988b, 1991). Busuttil and Busuttil (1997) present the aims of both Mitchell and Dyregrov’s techniques as:
'... to diminish the impact of catastrophic events by promoting support and encouraging processing of traumatic experiences in a group setting; to facilitate the piecing together of traumatic information while personal experiences are normalised and participants are helped to look into the future and to attempt to accelerate recovery before harmful stress reactions have the chance to damage the performance, careers, health and families of victims.'

In summary, the aims of debriefing were to diminish symptomology in high risk groups, which has important implications when considering evaluations of debriefing techniques.

6.4.2 The debriefing process

Mitchell (1983) described four types of CISD to be used at different clearly defined stages during and following traumatic exposure: on-scene or near-scene debriefing; initial defusing, and follow-up CISD. On or near-scene debriefing is concerned with identifying the early stages of post-traumatic stress reaction, (PTSR), and offering support and encouragement. Initial defusing usually takes place within a few hours of the incident and is used to discuss immediate reactions and feelings. Formal CISD is recommended for use between 24 and 48 hours after the incident. This time delay was considered necessary as Mitchell (1983) proposed that emergency workers could suppress psychological reactions for a brief period after an incident, as a result of 'training', and would otherwise be too aroused to deal with an in-depth discussion of events. Importantly, both Mitchell (1983) and Dyregrov (1989) propose that formal debriefing should be mandatory for all participants. The purpose of the follow-up CISD, at several weeks after the incident, is to resolve issues arising as a result of the incident. Mitchell (1983) suggests that it is closely associated with therapy and remarks that it is possibly the hardest to conduct.

Mitchell and Dyregrov (1993) finally came together and proposed a seven-phase debriefing protocol for formal debriefing which will be examined in more detail. The seven phases adapted from Mitchell and Everly (1993) are shown in Table 6:1.

The recommended time allowance for the formal debriefing is two to three hours. Dyregrov (1988) advises against variations from the model, as set out, due to an increased risk of penetrating too deeply beyond an individual's healthy and necessary defence mechanisms.

Mitchell and Everly (1993; 1995) propose some putative mechanisms of action which come closest to any notion of a theoretical rationale for the practice. They propose that early intervention at a time of maximum chaos quickly restores a sense of order, citing Friedman, Framer and Shearer (1988) in support,
Table 6.1 Debriefing

<table>
<thead>
<tr>
<th>Stage</th>
<th>Phase</th>
<th>Domain</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Cognitive</td>
<td>To introduce intervention team members, explain process, set expectations.</td>
</tr>
<tr>
<td>2</td>
<td>Fact</td>
<td>Cognitive</td>
<td>To have each participant describe a traumatic event from his or her personal perspective.</td>
</tr>
<tr>
<td>3</td>
<td>Thought</td>
<td>Cognitive to affective</td>
<td>To have each participant describe his or her cognitive reactions to the event and to begin the transition to emotional reactions.</td>
</tr>
<tr>
<td>4</td>
<td>Reaction</td>
<td>Affective</td>
<td>To have each participant identify the most traumatic aspect of the event to facilitate affective catharsis.</td>
</tr>
<tr>
<td>5</td>
<td>Symptom</td>
<td>Affective to cognitive</td>
<td>To allow the identification of personal symptoms of distress and transition back to the cognitive level.</td>
</tr>
<tr>
<td>6</td>
<td>Teaching</td>
<td>Cognitive</td>
<td>To educate about normal relations and adaptive copying mechanisms (ie stress management). Provide a cognitive anchor.</td>
</tr>
<tr>
<td>7</td>
<td>Re-entry</td>
<td>Cognitive</td>
<td>To clarify ambiguities and prepare for termination.</td>
</tr>
</tbody>
</table>

that early detection and intervention lowers costs, and delivers more favourable prognoses. They assert that CISD provides an opportunity for catharsis or venting of emotions in a safe, structured environment (after Kahn, 1966; Heider, 1974; Pennebaker and Susman, 1988). Also, an opportunity is provided for an expression of trauma and verbal reconstruction to take place, after van der Hart and van der Kolk (1989) on Pierre Janet, Bettelheim (1984); Pennebaker, (1985); and Pannebaker and Beall, (1986). The seven phases of CISD also signify a finite structure which is considered a therapeutic antithesis of the traumatic milieu, in line with Borkovec et al. (1983). CISD uses a group education model which allows the group support deemed valuable in addressing distressing issues, Yalom (1985); Jones (1985). As CISD is a peer-driven process, it is thought to offer exceptional advantages when that peer-group perceives itself to be different in some way from the normal population. Carkhuff and Truax (1965) are cited in support of peer-group/lay support models.

6.4.3 Who should conduct debriefing sessions?

Everly and Mitchell (1995) restate the guidelines necessary for who should conduct debriefings (mental health professionals and peer-group members), along with specific trained teams to carry out debriefings and suggests that significant harm might ensue from well-meaning but badly managed attempts. It is not clear whether these guidelines and criteria are being upheld in practice and one of the most contentious issues in debriefing is how debriefers are selected and trained.

Bell (1995) says social workers are the appropriate professionals to carry out debriefing. In his view, social workers have the
precise constellation of skills, social-environmental perspectives, and practice methodologies indispensable both to developing TED teams and to leading the debriefings. This article addresses the evolution of briefing-type psychological interventions for trauma.

6.4.4 Defusing

Mitchell and Everly (1993) describe the process of defusing as a shortened version of CISD. They propose that defusings should be implemented immediately or shortly after an event; be more flexible and take less time than a formal CISD (about one hour); and used to eliminate the need for, or enhance subsequent CISDs. Everly and Mitchell (1996) suggest that defusings have substantial advantages over debriefings. These are largely in terms of cost, requiring fewer team members and no need for a mental health professional. An important point to note with defusings is that they do not deal with potentially distressing material in as much depth as debriefings which may have the protective function of not re-traumatising participants. Everly and Mitchell (1995) suggest that the only reason to opt for a defuse rather than a debriefing is the time element, with defusings taking place as near to the event as possible and debriefings within three to five days. The defusing process is typically a three-stage intervention as set out in Table 6.2 below (adapted from Mitchell and Everly (1993).

<table>
<thead>
<tr>
<th>Stage</th>
<th>Phase</th>
<th>Domain</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Cognitive</td>
<td>To introduce intervention team members, explain process, set expectations</td>
</tr>
<tr>
<td>2</td>
<td>Exploration</td>
<td>Cognitive to affective to cognitive</td>
<td>To discuss the traumatic experience. This is achieved by having each participant relate to the facts of the event. Inquiry is also made into any cognitive or affective reactions to the event. Finally, participants are encouraged to discuss any symptoms or 'unusual' reactions they had in response to the traumatic event.</td>
</tr>
<tr>
<td>3</td>
<td>Information</td>
<td>Cognitive</td>
<td>To ensure that participants have returned to the cognitive domain in their processing of the event. This is achieved by teaching trauma concepts and stress management techniques while attempting to 'normalise' symptoms.</td>
</tr>
</tbody>
</table>

6.4.5 Alternative thinking on how debriefing works

Horowitz (1975, 1976, 1979) put forward an information processing (aetiological) model of PTSD which informed the psychosocial model, Green et al. (1985) and cognitive appraisal models, Janoff-Bulman (1985). Central to Horowitz’s thinking was the assumption of the completion tendency and how it relates to normal cognitive functions. This suggests that active memory storage has an intrinsic tendency towards repeated presentation of its contents, which continues indefinitely until storage of the
particular contents in active memory is terminated. The termination of contents in active memory occurs when cognitive processing has been completed. Progression to PTSD occurs when the processing of traumatic information fails, i.e., is not modified or accommodated in cognitive schema, to achieve the completion tendency. It may be that debriefing, by investigating, confronting and integrating traumatic memory, serves to facilitate this completion tendency.

Debriefing may also serve to promote a safe environment where social networks may be reconstructed as a protection against the development of PTSD, which is in line with the psychosocial model of PTSD put forward by Green et al. (1985).

6.5 Evaluation studies of debriefing: the criticisms

There are a range of criticisms relating to the debriefing process. Some are organisational, e.g., Rentoul and Ravenscroft (1993) point to the organisational culture as a major obstacle in introducing aftercare in the Ambulance Service, the so-called 'John Wayne syndrome' apparent in the emergency services. However, of far greater concern is the lack of sound empirical research in this area.

Bisson and Deahl (1994) identified major methodological difficulties with psychological debriefing: it is not prospective, sample sizes are small, control groups are absent, the degrees of trauma vary, and there is an absence of random allocations. Other confounding variables have been observed that researchers have ignored: low response rates, sampling bias, lack of uniformity of psychological debrief, timing variance and results obtained by interview or questionnaire.

Also, Bisson and Deahl (1994), noted that the lack of control groups makes interpretations of research findings difficult and that observed results may be due to natural diminution over time.

Busuttil and Busuttil (1995) rebut some of Bisson and Deahl’s (1994) objections of the methodological limitations of the evaluation of debriefing. They point out that ‘psychological debriefing’ allows individuals meeting in a structured group format, who have been exposed to the same trauma, the opportunity to piece together what happened. It is argued that this cannot occur in the same way if PD is used individually. PD may be useful after exposure to a single circumscribed event. It is suggested that PD may not be appropriate as a single ‘end of trauma’ session after exposure to an event which has been ongoing over a period of weeks. The presentation of traumatic material, without allowing sufficient time for the habituation of anxiety, may serve as a retraumatisation experience for some.
6.6 The therapeutic value of debriefing in reducing subsequent PTSD symptoms

The main problem with attempts at evaluation as discussed above, is that only a very small minority have been randomised controlled trials. The majority of studies carried out so far have failed to demonstrate adequately the beneficial effects, or indeed any prevention of post-traumatic morbidity, which is a stated aim of the process. As a result, the claims made from research findings can be conflicting.

Little empirical research supports the efficacy of debriefing and crisis intervention in prevention of PTSD (Bisson and Deahl, 1994; Raphael et al., 1995). Bisson and Deahl conclude that debriefing affords some protection against later sequelae, and at worst no difference, but also cite evidence, albeit flawed, that debriefing may have a detrimental effect.

Raphael et al. (1995), posed the question: 'does debriefing after psychological trauma work?'. Their conclusion was a tentative 'maybe'. They also highlighted areas of concern about the process.

Others have suggested debriefing may not work because it takes a uni-dimensional view of traumatic stress emanating from a threat to life rather than from other identifiable predictors (Koopman et al., 1994). Another debriefing format that does recognise the various dimensions of traumatic stress is Armstrong et al.'s multiple stressor debriefing model, but no evaluation studies have been carried out.

Overall, evaluations of debriefing fall into three main categories:

- uncontrolled studies
- comparison studies, and
- controlled studies.

The literature in these three areas will now be reviewed.

6.7 Uncontrolled studies

Everly and Mitchell (1993) offer one possible empirical comparison in support of CISD. They suggest that records pertaining to two aeroplane disasters with very similar outcomes in terms of fatalities and size of rescue services etc., San Diego in 1978 and Cerritos 1986, are revealing. Apparently, in San Diego the primary mental health response was crisis intervention teams providing individual on-scene support. In Cerritos, 12 formal CISDs were conducted in addition to on-scene crisis intervention and a telephone hotline. One year on, 27 members of personnel were lost to the service(s) in San Diego, five law enforcement officers, seven fire-fighters and 15 paramedics, and
mental health utilisation increased by 31 per cent. In Cerritos, no members of personnel were lost and only a one per cent increase in mental health utilisation observed.

The authors maintain that efficacy may be deduced naturally from the thousands of applications in CISD’s then ten year history.

Shapiro and Kunkler (1990) report the work of White and Hatcher (1988) which, they propose, provides clear evidence that psychological debriefing benefits organisations as well as individuals, by reducing absenteeism, sick leave and compensation claims among staff affected by disaster work.

Thompson (1991), in his study of the Heathrow Police Victim Recovery and Identification Team, was able to demonstrate that daily debriefing, along with training and a management framework for field use reducing the social distance between officers, mitigated the potential harmful effects of body recovery. Alexander and Wells (1991), and Alexander (1993a), were also able to show that officers engaged in body retrieval duties were able to survive their experiences relatively unscathed. This the authors attributed to the effects of induction training, stress inoculation, daily debriefings and social support from colleagues, and ongoing psychiatric support. These findings suggest that debriefing has a positive role to play, along with other strategies, in preventing future symptomatology. More research is needed to determine the relative contributions of induction training, stress inoculation, and modified management practices alongside debriefing. It should be noted that both these groups who showed little or no morbidity were volunteers who had personally chosen to undertake those duties. There may have been considerable under-reporting of symptomatology in Alexander and Thompson’s studies. Because populations were volunteers, they might not have been able to justify negative psychological outcomes to themselves or anyone else as a result.

In an uncontrolled study, Robinson and Mitchell (1993) reported a systematic evaluation which suggests that a fortnight after debriefing, participants felt less stressed and judged the process to be helpful. However, 41 per cent of female and six per cent of male participants stated that the traumatic experience was still having a major impact on them, and that a high frequency of symptoms were present.

There is also a growing body of evidence to suggest that debriefing has, at best, no therapeutic value in the reduction of trauma symptoms, and at worst can have a detrimental impact.

Deahl et al. (1994) failed to demonstrate the value of debriefing combined with induction training for British Gulf Conflict body handlers. However, debriefing took part some time after, on
6.8 Controlled and comparison studies of debriefing

Other studies on debriefing fall into two categories. Controlled studies, where individuals are randomly assigned to an intervention group or a control group, and comparison studies, where for some reason other than random allocation some individuals receive debriefing but others do not. When considering comparison studies of the effectiveness of debriefing, it is important to bear in mind that the reasons some people receive debriefing (and others do not) may well be important, and influence the outcome of these studies.

6.9 Comparison studies of debriefing

One of the most recent cases for the use of debriefing comes from Chentob et al. (1997). They offer evidence from a partially controlled study of two groups of mental health workers following a hurricane. The debriefing process was staggered, with group one being debriefed six months after the hurricane and group two approximately nine months after the hurricane. Pre- and post-intervention measures were taken with both groups of staff, pre-mesures immediately before intervention and post-measures at 90 days following intervention. The pre-intervention measures for group two were taken at the same time as the post-intervention measures for group one, hence providing a partial non-random control. The authors found decreased trauma symptoms at time two for both groups of staff, suggesting that debriefing was successful in diminishing post-incident reaction. Pre-intervention scores were similar for both groups, suggesting that the reduction in symptoms could not be attributed to diminution over time alone.

There are methodological flaws with this study: the two groups of staff had different experience and were employed to do different tasks; allocation to treatment groups was not random; debriefings took place six and nine months after the event; and follow up is only available for 90 days post-debriefing. However, the authors conclude that the intervention contributed to a substantial reduction in distress among participants. The study also raises questions about the timing of debriefing interventions.

Griffiths and Watts (1992) reported outcome measures for a group of emergency workers one year on from attending serious bus crashes, almost half of whom reported considerable symptoms. Those who had been debriefed had significantly higher scores for morbidity and distress as measured by the GHQ.

Hytten and Hasle (1989), studied fire-fighters in Norway following a hotel fire, and were able to compare outcomes on the
IES for those who had been formally debriefed and with those who had not. No significant differences in avoidance behaviour and intrusive thoughts was found. However, those who had not been debriefed had talked to their colleagues informally, and it is not clear what contribution to outcomes this process had.

Deahl et al. (1994), investigated war graves troops following the Gulf War. For operational rather than experimental reasons only part of the group participated in debriefing. When psychiatric symptoms were assessed nine months on from debriefing, no measurable reduction in reported symptoms was observed. Despite this, many soldiers apparently said they valued the opportunity to express their feelings. Also noteworthy is Raphael et al.'s observation that the authors of the study remained committed to the principle of debriefing.

Kenardy et al. (1996) found that rescuers/helpers following an earthquake reported a general decrease in symptoms in the debriefed over a two year follow-up but less improvement over time. Nevertheless, 80 per cent rated the debriefing as helpful. Kenardy et al., and Watts (1994), have both suggested that debriefing might exaggerate the traumatic process or be associated with delayed presentation.

6.10 Controlled studies of debriefing

In 1994, Bisson and Deahl reported that there had been no adequate controlled studies of debriefing. Since then only two fully controlled studies have emerged.

Lee et al. (1996) conducted research on 39 women who had experienced a miscarriage and fulfilled five selection criteria (eg no previous experience of a miscarriage; and not under psychological or psychiatric care at the time). Lee found that emotional adaptation by women was not significantly influenced by psychological debriefing. In other words, although women in the follow up group generally felt that psychological follow up had been helpful, there was no difference in the experience of symptoms between the intervention and the control group.

Bisson et al. (1997) conducted a controlled evaluation of debriefing with 110 adult burn trauma victims. Participants were randomly allocated to intervention or non-intervention groups, and were interviewed by an assessor blind to PTSD status at three and 13 months.

Bisson and his colleagues found no evidence to support the hypothesis that debriefing would prevent subsequent PTSD symptoms. They also found (as did Lee, 1996) that the perceived usefulness of debriefing was not linked to better outcomes for individuals. Furthermore, Bisson et al. found evidence that debriefing may cause harm, and that the closer the debriefing to the incident, the worse the outcome.
Rose and Bisson (in press) identify six randomised controlled studies of debriefing, all of which have 'methodological shortcomings'. All studies were based on individuals (rather than group debriefing). Despite this, they point to two interesting findings in relation to debriefing. Firstly, they suggest from their review, that the two studies with a positive outcome took place before debriefing had been described. Although similar, the two early interventions did not involve intense re-exposure to the incident as debriefing would. Rose and Bisson suggest it might be this aspect of debriefing that can lead to retraumatisation of some individuals. Secondly, they point to variables other than debriefing which appear to be important in determining outcome. These include initial levels of distress. None of the studies reviewed, however, took into account pre-trauma levels of functioning, attributional style, and quality of crisis support. Rose and Bisson also raise a query about the timing of intervention, and point to findings that the earlier the intervention, the greater the risk of adverse outcome. This accords with the findings of Cemto et al. (1997).

It may in time prove to be the case that the findings reported here bear more relation to a clinical setting, and findings in occupational settings do not produce similar findings. However, these two studies represent the best research evidence available to date on the effects of psychological debriefing and must raise serious concern about its use, particularly where use is not monitored by appropriately rigorous evaluation.

6.11 Why do debriefing?

Other researchers have recognised that the evidence for the efficacy of debriefing is very poor, and acknowledge that debriefing might harm some people (Raphael et al., 1995). They consider other reasons why debriefing has been so widely applied and remained a popular approach to the treatment of post-incident reactions.

Raphael et al. (1995), propose that debriefing meets many needs: the needs of survivors to articulate what has happened, understand it and thereby gain control; the symbolic needs of workers and management to aid those who suffer and display concern; and the needs of those not directed to master vicariously the traumatic encounter, overcome their sense of helplessness and survivor guilt, and to make restitution.

CISD has been adopted as received wisdom and enjoyed a phenomenal spread of application and use in major disasters etc. since the early 1980s. Raphael et al. (1995), interestingly describe it as 'social movement' or 'ideology'. It seems to have been adopted as an article of faith by those groups who need to make a response and have to rely on received wisdom.
On evidence cited in the *Staffordshire Report*, McLeod and Cooper (1992) concluded that fire-fighters are emotionally and psychologically affected by operational incidents. The authors recommended the setting up of a CID team with appropriate training, Standing Order guidelines, and back-up employee counselling services. No mention was made of a rationale for the CID and no objectives set for the service, explicit or otherwise. Hollister (1996) reports debriefing used by community health nurses. Sowney (1996) reports that A&E nurses are concerned about the lack of opportunity for debriefing and they feel the need for regular debriefing after stressful experiences. It is reported that the prevailing atmosphere was not conducive to expressing their thoughts and feelings.

Others suggest that while there is no evidence that debriefing 'works' to reduce symptoms, what it does seem to do is make people feel better, eg scenario: a person reports thinking they're going mad after an event because they have the symptomology. If they are told the symptomology is a normal reaction and they aren't going mad they are relieved. The symptoms don't go but the associated anxiety reduces therefore they feel better. Also the process is a useful short circuit for getting at those feeling isolated, the 'no-one can help me's', the avoidants who might need to be engaged.

It may be that looking for symptom reduction over time is inappropriate simply as a result of the physiological changes associated with traumatic memory. Debriefing is controlling, not eradicating, symptomology.

Everly and Mitchell (1995) argue that all human beings are vulnerable to psychological trauma, but the occupational demands placed on those employed in high risk professions which they identify as: public safety, emergency services, military, etc., dramatically increase the risk of psychological traumatisation. The authors propose that the CISD put forward by Mitchell (1983) is a form of psychological debriefing expressly developed to mitigate the harmful effects and ultimately prevent PTSD originating from work-related trauma. However, in the light of the most recent research findings, the wisdom of employing debriefing methods without very close scrutiny has to be questioned.

Some have gone as far as to call for a moratorium on debriefing (*Wessley et al.*, 1998).
Despite its wide practical application, virtually no thorough and robust
evaluations of debriefing exist. The most recent and the most method-
ologically sound studies give reason for much concern about the use
of debriefing. However, it must also be noted that the findings from
clinical settings may not translate directly to occupational settings. It is
clear that much more research is urgently needed into what is
happening in practice, and how effective these approaches are.
Employers using a debriefing approach need to be absolutely clear
about what they aim to achieve through debriefing and check that the
process itself is not having any deleterious side effects on staff.

Actual practice appears to be less controlled than Mitchell and
Dyregrov recommend, in that the principles of debriefing are being
adopted rather than the whole methodology. This raises research
questions about what any given form of debriefing involves, who is
doing the debriefing, how are they trained, is debriefing voluntary or
mandatory as well as any relative benefits that might accrue.

It is apparent that far more systematic evaluation is needed, in
applied/occupational settings, with much better use of randomised
controls, before firm conclusions about the efficacy of debriefing for
post-incident reaction can be deduced.

6.12 Alternative forms of post-incident intervention

A range of other approaches to the treatment of PTSD symptoms
have also been reported in the literature. This chapter now goes
on to examine research evidence in relation to these other
approaches.

6.12.1 Mental first aid

Foss (1994) described a study of early intervention (termed mental
first aid) within drivers of the Oslo public transport company
(Sporveier). Tang (1994) reported a psychotherapeutic inter-
vention within the Copenhagen S-train system.

Thompson et al. (1995), described the impact of debriefing
followed by eight weekly sessions of exposure therapy on 23
patients who had experienced a major stressful event and were
above threshold scores on the GHQ-28 (> 5) and the IES (> 30).
The patients had experienced a range of traumatic events (the
majority of which were accidents and assaults) and 16 met
current diagnostic criteria for PTSD under DSM-III-R. The results
indicated significant improvements on the main measures (GHQ-
28, IES, SCL-90 and CAPS). The magnitude of the reductions
ranged from 35 per cent to 61 per cent of initial scores or around
one standard deviation. It was reported that eight patients still
met PTSD criteria after the eight weeks therapy. Using GHQ
'caseness' criteria, 20 were above threshold at the start of the
sessions and ten remained as cases at the end.
6.12.2 Cognitive and behavioural treatments of PTSD

Hacker-Hughes and Thompson (1994) undertook a review of several behavioural and cognitive treatments of PTSD. Their findings indicate that behavioural and cognitive approaches have been broadly effective in reducing various areas of PTSD symptomatology. The optimal treatment that they identified was a technique known as ‘imaginal flooding’ — a form of reconditioning of response to the feared stimuli and desensitising through exposure.

Foa and Meadows (1997) undertook a comprehensive review of psychosocial treatments for post-traumatic stress. They report that cognitive behavioural approaches provide the highest number of controlled studies and also identified exposure procedures as effective in reducing PTSD symptoms. They proposed that:

‘... exposure promotes symptom reduction by allowing patients to realise that contrary to their mistaken ideas:

- being in objectively safe situations that remind one of the trauma is not dangerous
- remembering the trauma is not equivalent to experiencing it again
- anxiety does not remain indefinitely in the presence of feared situations or memories, but rather it decreases even without avoidance and escape, and
- experiencing anxiety/PTSD symptoms does not lead to loss of control.’

Wessley (in press) has advocated that cognitive and behavioural techniques are actively researched, as these are the only approaches that have any proven efficacy in reducing trauma symptoms.

6.12.3 Inpatient PTSD treatment

Scurfield et al. (1990), noted that evaluation research of inpatient PTSD treatment was limited. This sentiment is reiterated by Hammarberg and Silver (1994). There are a variety of clinical reports relating to specific interventions, however few in-patient intervention programmes have reported success.

Munley et al. (1994), described an inpatient programme within the Battle Creek, Michigan VA Medical Center. Following two days of evaluation, the five week treatment programme included intensive group (cohorts of 10 or 11) therapy on a daily basis (led by a psychologist and a social worker), and participation in additional treatment modules, focusing on specific treatment issues related to personal responsibility and lifestyle changes (eg journal writing for self-development, relaxation training, leisure education and employment workshops). They found no significant differences between stayers and non-completers for the programme on a battery of measures (including MMPI,
Mississippi-PTSD). However, the report failed to give an indication of the clinical outcome of the intervention.

Johnson et al. (1994) compared first and second generation treatment programmes for PTSD within Vietnam veterans. They noted that for Vietnam veterans, despite the war being over 20 years in the past, the in-patient treatment programmes were largely based on ‘principles of trauma treatment appropriate for newly traumatised persons’ (p. 217). They epitomised ‘first generation’ treatment programmes as emphasising sanctuary, bonding among veterans, awareness, bolstering abreaction and reliving. Second generation programmes were seen as providing practice in accommodation, bonding around real world tasks and with staff, confrontation, education, rediscovery of lost ideals, and arts therapies.

Hammarberg and Silver (1994), identified several specific intervention techniques applied to veterans with PTSD symptoms, including imaginal flooding (see Lyons and Keane, 1989), hypnotherapy (Silver and Kelly, 1985) and systematic desensitisation (Bowen and Lambert, 1986). Hammarberg and Silver emphasise, however, that treatment is now institutionally-based within VA programmes and presented a brief review of three relevant outcome studies (Perconte, 1988; Scurfield et al., 1990; Boudewyns et al., 1990) as well as presenting results of their own programme evaluation.

Perconte (1988) involved a 12 month follow-up of ten out of 18 successfully treated cases, out of 24 patients who completed the four-month Days Program (three days/week), out of 102 evaluated patients during the first two years of programme operation. Despite this sample representing a ‘very select group’ (Hammarberg and Silver, p. 212), Perconte reported ‘significant increase in symptom distress in follow-up’ (p. 132).

Scurfield et al. (1990), followed up 86 out of 180 patients from a 12 week inpatient programme. Outcome was indicated by some significant changes on measures, such the IES and the PK-MMPI (though no significant change was found for the M-PTSD).

The programme evaluation reported by Hammarberg and Silver (1994) tracked 23 of 29 patients of a 90 day in-patient programme at four-week intervals from admission to discharge, and included a 12 month follow-up. Using the Penn Inventory, Hammarberg and Silver reported significant reduction in the severity of PTSD symptoms of about one SD. Twenty-one of the 23 patients were followed up at 12 months. The results from this follow-up indicated significant ‘rebound’ indicating that the programme ‘had not succeeded in bringing about a long-term reduction in the symptoms of PTSD’.
6.12.4 Pharmacotherapy

Sutherland and Davidson (1994) reviewed the application of a range of Pharmacotherapies to PTSD patients and concluded that 'a combined approach to treatment is beneficial, at least in the acute stages of the illness' (p. 420). In particular, there seemed to be some support for the use of anti-depressants of a serotoninergic nature, when used at higher doses for five to eight weeks, in dealing with core PTSD symptoms.

6.13 Organisational intervention — examples of practice

Many organisations have taken steps to try and minimise the impact on their staff of traumatic incidents at work. In two areas in particular, police work and the financial sector, evidence on practice is more readily available and relatively widely published. This section presents evidence on current practice in these two work areas.

6.13.1 Post-incident management in the financial sector

Despite its relatively late involvement in work on trauma management, the financial sector now boasts some examples of arguably the most sophisticated trauma management practices. In 1991, the HSE convened a meeting of those involved in banking and finance, which concluded that there was a need for specific guidance for banks and building societies because of the risk of violence to staff who worked in them. A working group including representatives from unions, employers, police and victim support, was set up and produced this guidance. The guidance emphasises the need for an integrated policy, and focuses on four key areas:

- risk management
- education and training
- post-robbery support
- public relations strategy.

6.13.2 Evaluation of interventions

As with other areas of the literature, good empirical research on the impact of trauma management programmes is limited. However, a number of initiatives are now starting to gain wider attention. Two such examples are considered here.

Umbrella of Care — the Woolwich Building Society (Letts and Tait, 1995)

The trauma management programme implemented by the Woolwich has four key functions:
• **training** — both in terms of educating staff about the nature and process of traumatic reactions, and the selection and training of 60 staff to take up roles as debriefers

• **on-site human resource management** — a trained debriefer visiting the site to provide help and support in the aftermath of an incident; to issue written guidance notes, assess whether a full team brief is required and to liaise with the occupational health department

• **post-incident care programme** — the branch is closed for a post-incident team debrief within 48 to 72 hours of an event if this is necessary

• **psychological health screening** — psychological health screening of employees is conducted for six months following the incident, and performance and sickness absence data is tracked to identify any significant post-incident changes.

Following a successful pilot, the programme was extended to the rest of the organisation and is currently being evaluated against anticipated outcomes.

**Trauma care in the Post Office (Tehrani, 1995)**

The Post Office consists of a number of diverse businesses, each with varying degrees of risk inherent in the type of work being conducted. For that reason, a single organisation-wide policy was found to be unworkable. Instead, the Post Office's OHS developed a core trauma care programme which could then be adapted to meet the cultural and operational needs of individuals' businesses. The core programme identifies six overall stages as follows:

• employee selection, education and programme promotion
• crisis management
• manager debrief
• psychological debrief
• trauma counselling
• evaluation and follow-up.

These stages have then been adapted to various businesses as appropriate. Examples include: where companies are recruiting, identifying aspects of the job requiring particular characteristics and recruiting appropriately. In some businesses, links with police and other agencies may be essential in terms of successful crisis management; where a team culture is intrinsic to the delivery of the service team, debriefing and peer support play a more significant role.

Full evaluation of this intervention is still under way. However, initial results from the Cashco programme show a drop in
average trauma-related sick leave of 50 per cent (i.e. from eight to four days). Furthermore, data demonstrated that even after the first year, savings had more than covered the costs of the programme set up. Savings for the first year were £103,000 per annum against set-up costs of £88,300. Subsequent (year two and three) savings have been £200,000, with running costs (i.e. refresher training and training for newly appointed managers) estimated at £10,000 per annum.

6.13.3 Post-incident management in the police

It is interesting to note that there appears to be little standardisation of practices country-wide. This would appear to reinforce the suggestion that certain aspects of debriefing are taken on rather than the whole methodology, as proposed by Mitchell and Dygerov.

The Metropolitan Police have their Trauma Support Programme (Directorate of Occupational Health, 1995) which is divided into three phases with a heavy emphasis on education:

Phase I — pre-trauma education and planning

Phase II — post-trauma support

  Stage 1 — demobilisation
  Stage 2 — defuse
  Stage 3 — trauma follow-up session
  Stage 4 — on-going support

Phase III — programme monitoring and review

Information/further assistance booklet available.

There is no mention of formal debriefing CISD. The Trauma Programme does not appear to be mandatory and can be requested by officers following an incident that they consider has been potentially traumatic.

South Yorkshire Police have a policy document in their Good Practice Guide — Personnel and Welfare, entitled Stress Management — Reactions to Potentially Traumatic Incidents. This provides an introduction to trauma and gives the procedure to be followed. This lists what is done to the officer and what the officer is allowed to do. It even includes what may or may not be said to the officer and instructions for dealing with the media. This appears to be a reaction to the difficulties experienced post-Hillsborough. Again, a booklet is provided, detailing access to the welfare facilities available and how to access them. Debriefing is not mandatory as it is considered that individuals are the best judges of their own requirements.
Strathclyde Police have their own Occupational Health and Welfare Unit and offer a brochure outlining their responsibilities and a leaflet, *Coping with the Recent Incident*. The leaflet focuses on normalising feeling, education about physical and mental symptoms, and what can be done to help and when, along with access details. Debriefing is not mandatory.

Gallagher (1996), evaluated police officers’ understanding of the Critical Incident Debriefing offered by Strathclyde Police. The aims of the study were to assess the understanding of Critical Incident Debriefing (CIDB) in officers who had been exposed to ‘typical’ critical incidents, to assess their perception of service need, to gauge the practical issue concerning use of the facility and to ascertain what constitutes a critical incident.

The programme has been operating since May 1994 and uses trained peer-debriefing. The practice of debriefers has been formed largely by their own experience following training, so Gallagher was unable to ascertain exactly what they did.

Results showed that the understanding of CIDB was generally poor, with some confusion over counselling and operational debriefing. Awareness of what was on offer was higher among supervisory officers, but a danger was observed in that some officers were attempting to ‘diagnose’ officers under their care and were misunderstanding or underestimating their responsibilities regarding ‘duty of care’. A clear Force Policy was recommended to overcome these and other procedural difficulties observed. The study provided clear evidence of need for the service and on the basis of the number of incidents occurring over the year which officers judged to be critical, that the service was greatly underused, *ie* 17 debriefings actually took place when 80 ‘appropriate’ incidents were reported.

The issue of confusion in what debriefing involves was addressed by the Chairman of the ACPO, Joint Working Group on Organisational Health and Welfare for the Police Service in the United Kingdom, who saw fit to write to his colleagues in December 1996 to clarify the issue. He pointed out that critical incident debriefing and counselling were distinct techniques and should not be seen as alternatives. Continuing, he pointed out that counselling was available if they should need it in due course but many people can cope with just effective debriefing. For those who could not cope, effective help was on offer to maintain people in work and minimise the likelihood of claims succeeding based on failure of ‘duty of care’. An amended code of ethics has been set up for the service, and for Welfare Officers to be members of the Police Welfare Association they must adopt the code.

Crandon (1997) reports an interview with Andy Tait, from the Police Staff College at Bramshill, in which he states that he estimates that around 25 per cent of Forces now have trained
debriefers. Tait is responsible for training debriefers, _ie_ the Metropolitan Police, Strathclyde. Tait says that his research indicates that debriefing works, yet he advocates a simple three-stage model, the three Fs, — facts, feelings and future. Tait distinguishes two forms of stress: high intensity/limited time exposure, _ie_ Hillsborough, Dunblane; and everyday low-intensity stress, ‘daily disasters’. He suggests that high intensity events should have a thorough psychological debrief, whereas ‘daily disasters’ should be treated with defusing.

Overall, examples of interventions from the financial sector and police work suggest there is very little standard implementation of debriefing as described by Mitchell and Dyregrov. Rather, elements of the process are adopted.

Additionally, debriefing is rarely used in isolation and normally forms part of a more holistic approach, which can include training, selection and education. Finally, it is apparent that approaches vary in many other important respects (eg timing, whether or not compulsory training of debriefer), all of which need to be taken into account in any evaluation before the efficacy of these approaches in occupational settings can be determined.

The limited research evidence available (Tehrani, 1995) details the substantial financial benefit that might accrue for organisations intervening to manage post-incident reactions. However, it should be noted that Tehrani describes a package of intervention, not one of debriefing.

Duty of care considerations are the usual prompt for organisations to intervene. However, the available evidence on debriefing must call into question how well this approach supports organisations in fulfilling their duty of care.

Evidence from organisations also points to some confusion over what constitutes a ‘traumatic incident’, what debriefing involves and when it is appropriate. It is likely that these issues will vary depending on organisational context and debriefing may well be unsuitable for certain groups or individuals.
7. Conclusions and Recommendations

7.1 The nature of post-incident reactions

The impact of extreme incidents on an individual’s psychological well-being have long been recognised. The three clusters of symptoms associated with PTSD — namely re-experiencing, avoidance and hyperarousal — can also be traced to the late 19th and early 20th centuries. However, it was only in 1980 that Post-Traumatic Stress Disorder was first identified in DSM-III. It is important in that it recognised the existence of psychological trauma in reaction to extreme events rather than, as had previously been the case, assuming prolonged reactions were indicative of a pre-morbid condition.

It is argued that recognition of PTSD as a reaction to an extreme event, rather than the indication of a pre-existing condition, is in part due to the large number of Vietnam veterans exhibiting prolonged and severe reactions to their experiences of war. However, it is recognised that a wide range of experiences can give rise to PTSD symptoms.

Since its original inclusion in DSM-III, the definition of PTSD has been revised and developed in response to ongoing research. The latest version — DSM-IV (APA, 1994) offers two criteria for the identification of trauma in PTSD:

- the individual must have experienced or witnessed a traumatic event, and
- they must have responded in an intensely fearful, helpless or horrified manner.

The three clusters of symptoms remain, and it was stated that the disturbance to behaviour caused by trauma would result in ‘clinically significant distress or impairment in social, occupational, or other important areas of functioning’.

DSM-IV (APA, 1994) also recognises that the nature of the stressor may well impact on the severity of symptoms, especially where the stressor is of human design.

Finally, DSM-IV (APA, 1994) states that trauma can arise not only through direct personal experience, but also through learning about such an event affecting a close associate or family member.
These are important developments as they:

- place emphasis on the reaction of the individual to the event
- recognise impairment in occupational functioning as a likely outcome
- recognise the type of event might be important in the severity of symptoms experienced, and
- widen the potential victims of an event to close associates or family members, who do not directly experience the event themselves.

PTSD, or severe post-incident reactions, are not confined to those who directly experience them, but can extend to, for example, family or other associates.

Reactions to traumatic events which last for very short periods (eg two days or less) are normal and do not require diagnosis. If PTSD type symptoms persist for more than two days, a diagnosis of Acute Stress Disorder (ASD) is appropriate, with PTSD only being diagnosed if symptoms persist for more than a month. Additionally, Adjustment Disorder (AD) can be diagnosed where PTSD symptoms are observed in response to a less extreme stressor, or where response to a traumatic event lasts longer than two days and does not fulfil the diagnostic criteria for ASD.

Non-extreme stressors can give rise to PTSD-like symptoms. Equally, extreme events may not cause PTSD, but cause a range of other distressing symptoms. For those involved in managing post-incident trauma in the workplace, it is important to recognise reactions which might not constitute PTSD but will still impact on individuals at work.

7.2 Assessment of PTSD symptoms

There are three main methods of assessing post-incident reaction:

- self report questionnaires
- structured interviews
- objective measures.

A combination of generic measures of mental health and specific measures of PTSD are available. Many specific measures relate to DSM-III-R symptoms. However, new scales are currently being developed.

The clinical interview is seen as the 'gold standard' of assessment. However, it is not always suitable, for example, for research because of the cost implications of using it.
Objective methods of assessing PTSD are generally viewed as lacking the sensitivity required to distinguish subtle differences between diagnostic categories.

7.3 Post-incident reactions

7.3.1 Crisis management and organisations

Literature on crisis management suggests that both the frequency and scale of commercial and industrial crises is increasing and that crises occur in a wide range of settings.

Organisational culture is seen as being of particular importance in corporate strategic decision making, especially with regard to an organisation’s perceived ability to respond positively and cope with threatening situations.

Research has suggested that organisations can be seen as crisis prone or crisis prepared. Crisis prone organisations are characterised by misinterpretations of objectives reality, believing it congruent with the values of the organisation.

Models of the crisis process typically recognise three phases. One such model, focusing on managerial functioning suggests the pre-crisis phase can be illustrated by management failures, inactions or actions, whereby a seemingly minor triggering event can escalate within the system.

The second phase is one where the prevailing organisational climate is seen as integral to support those facing the threat with the aim of preventing a worsening of the situation.

The final phase is that of legitimisation — managing the impact of the event.

Factors associated with decline or recovery of an organisation following a crisis have been identified. These are seen as seven Cs of crisis management:

- change of culture
- communications
- configuration of the organisation
- contingency planning
- control
- cost
- systems coupling and complexity.
Research on crisis management highlights a range of organisational factors which contribute to the development of crises and the way in which the situation is managed.

7.3.2 Situations that lead to trauma

The idea that there is a close response effect (ie the worse the trauma the bigger the risk) is reasonably well established. However, more recent thinking on trauma has suggested that this is an over-simplistic interpretation.

Much evidence is emerging that ‘everyday’ events in certain types of work (most notably emergency services) can lead to PTSD from a legal perspective. It has been suggested that bullying, for example, could be cited as a cause for PTSD, as could experience of a major disaster.

There is some evidence (as reflected in DSM-IV [APA, 1994]) that the type of stressful event or initiating event may be important in determining the likely onset of PTSD, with trauma of human design giving particular cause for concern. However, there is still more work to be done in this area.

One of the biggest implications for the management of PTSD and post-incident reaction is the emphasis now placed on individual perception of an event. It has been suggested that this will lead to a far higher rate of diagnosis.

There is little evidence to support claims that environmental factors can have a mitigating effect. However, organisations need to consider how other organisational or legal requirements are handled, as there is evidence that security or criminal investigations can accentuate feelings of victimisation and the experience of trauma.

Recent work has implied that different treatment protocols will be appropriate for trauma sufferers at different stages of the disorder. Research is not sufficiently progressed to map treatments to stages yet, but consideration needs to be given to the fact that chronic PTSD has been found to develop in some individuals where acute forms of the disorder were believed to have been treated successfully.

Treatment of individuals who have experienced a trauma but do not exhibit PTSD symptoms is not considered good practice.

7.3.3 Managing post-incident reactions in organisations

Management of PTSD is typified by primary, secondary and tertiary interventions akin to general stress management.
Primary interventions involve:

- risk assessment
- hazard control
- selection and recruitment
- crisis management training.

Secondary interventions are construed as ‘timely reaction’, ie measures in place to deal with incidents and reduce the likelihood of subsequent PTSD symptoms.

Tertiary interventions treat the longer term effects of trauma.

7.3.4 Legal requirements or employers

Legally, employers are required to ensure, so far as is reasonably practicable, the health, safety and welfare at work of their employees (HSW, 1974). No distinction is made between physical and psychological health.

Employers must:

- make themselves aware, through current literature, of the sources of stress at work, and how these may be affecting their own organisation
- assess risks to the mental health of their workforce (and of others who may be affected by the organisation’s activities)
- make arrangements for putting into practice the necessary preventive and protective measures
- carry out, where appropriate, a health surveillance
- give adequate information and training about risks.

The deciding factors in making a case, appear to be where a person:

- fears for their own safety
- acts as a rescuer, or
- fears causing injury to another.

If employees do not fall into these categories they risk being categorised as bystanders, and duty of care does not apply unless they can satisfy further tests of proximity:

- proximity to the incident in terms of time and place, or
- had close ties of love and affection with a victim.
7.4 Prevalence of trauma

The most reliable estimates of general population prevalence of PTSD suggest fairly low levels of PTSD with up to seven percent showing sub-PTSD symptoms. However, there has been concern expressed that this is an under-report of the true prevalence. It has been suggested that around one-quarter of people exposed to a traumatic event will go on to develop PTSD.

Much of the literature focusing on prevalence of PTSD follows from particular disasters or combat experience and is therefore not necessarily generalisable.

This review identified several occupational groups within the literature where some form of data on post-incident reactions was available:

- military personnel
- transportation workers (railways, maritime, aviation, road transport)
- emergency service workers (ambulance, fire, police)
- the financial sector
- health care workers
- offshore oil and gas industry
- other industrial processes
- nuclear workers.

7.5 Trauma in different occupations

There is wide variation in the probability and severity of traumatic incidents across different occupational groups which makes comparison virtually impossible.

Certain jobs have known and repeated traumatic events (for example, in the financial sector). Other jobs may regularly involve exposure to extreme stressors — for example, those in the emergency services — and many jobs which involve contact with the public — for example, the public sector, health sector, financial sector. In occupations such as these, staff may accept frequent violence as part of the job and not report incidents at their true frequency. However, research suggests that the majority of assaulted employees will display typical trauma reactions.

This emphasises the need for employers to give careful consideration to the threats that exist within their workplace and to undertake thorough risk assessment in relation to psychological as well as physical factors.
7.6 Managing trauma

Research evidence on the management of post-incident reactions is not generally of very good quality.

Gold standards for treatment outcome studies have been proposed:
1. Clearly defined target symptoms
2. Reliable and valid measures
3. Use of blind evaluations
4. Assessor training
5. Manualised, replicable, specific treatment programmes
6. Unbiased assignment to treatment
7. Treatment adherence.

7.7 Pre-incident interventions

There are a range of pre-incident interventions in place, ranging from recruitment and selection, through general training, to stress-specific briefing/training.

Many studies have looked at the potential for using these approaches, but evidence on their application, successful or otherwise, is scarce and unconvincing.

7.8 Post-incident interventions

By far the most commonly used form of post-incident intervention is that of psychological debriefing. This approach has been used in military settings since the First World War, and since 1983 has been formulated in a technique known as Critical Incident Stress Debriefing or Psychological Debriefing, and has become far more widely available.

The aims of debriefing are to:
1. Mitigate the harmful effects of traumatic stress.
2. Accelerate normal recovery processes in normal people who are experiencing normal reactions to abnormal events.
7.9 Evaluation of debriefing

Evaluation studies have questioned the therapeutic value of debriefing in reducing subsequent PTSD symptoms, and results are far from equivocal.

Overall, evaluations of debriefing fall into three main categories:

- uncontrolled studies
- comparison studies, and
- controlled studies.

To demonstrate that debriefing is more effective than, for example, no intervention, evaluations really need to be controlled studies, i.e. individuals are assigned to a treatment group or a control (non-treatment) group on a random basis and some are compared after treatment.

Despite its wide practical application, virtually no thorough and robust evaluations of debriefing exist. The most recent and the most methodologically sound studies give reason for much concern about the use of debriefing.

7.10 Controlled studies

Two controlled studies on the experience of miscarriage and the experience of burn trauma have both found no evidence that debriefing reduced the experience of traumatic symptoms. Both studies found that the perceived usefulness of debriefing was not linked to better outcomes for individuals.

Furthermore, one study found evidence that debriefing could be harmful, and the closer the debriefing to the incident, the worse the outcome.

Findings from clinical settings may not translate directly to occupational settings. However, research is urgently required to evaluate the impact of debriefing in different occupational settings.

7.11 Comparison studies

These are studies where, for reasons other than research design, some individuals receive debriefing and others do not. Comparison studies are of interest (especially given the small number of controlled studies), but their main drawback is that the reasons some people receive debriefing could well influence results.
Findings from comparison studies are very mixed. Several find no differences between debriefed and non-debriefed colleagues. Some studies find evidence of higher symptomatology among those who have been debriefed; others find considerably reduced symptomatology among those who have been debriefed.

Evidence from comparison studies of debriefing is very mixed. The design of the studies makes it difficult to ascertain whether findings are due to debriefing or the result of systematic flaws in the research design.

Several important research issues are highlighted:

- The timing of debriefing interventions — in one study where debriefing was deemed successful, the debriefing took place six months post-traumatic event.
- What form of debriefing is being used? — in many cases the principles of debriefing are followed, and adapted, rather than the whole methodology as originally proposed.
- What impact does debriefing have longer term? — there is some suggestion that debriefing might exaggerate the traumatic process or be associated with delayed presentation.

7.12 Why debrief?

Despite acknowledgement of the poor quality of evidence in favour of debriefing, many researchers remain committed to the principle and debriefing remains a widely used technique in many organisations.

Often debriefing systems are set up in the absence of rationale and objectives. In such situations it becomes very difficult to evaluate other potential benefits from debriefing.

If organisations use debriefing they should have explicit rationale and objectives for doing so, against which the impact of the debriefing can be evaluated.

It has been suggested that debriefing meets many needs. For example, of survivors to articulate what has happened, and the symbolic needs of workers and management to aid those who suffer and to display concern.

Others have suggested that while there is no evidence that debriefing ‘works’ to reduce symptoms, it may well help people to understand what is happening to them. In other words, it reduces an individual’s anxiety at experiencing the range of PTSD symptoms.
7.13 Other post-incident intervention

A range of other treatment techniques for PTSD exist, but remain the province of clinical specialists and are therefore less widely available. Evaluation of these methods, though limited, is better than for debriefing. Overall, cognitive and behavioural treatments of PTSD are the most consistently demonstrated to be effective in the reduction of PTSD symptoms.

7.14 Organisational intervention

Several examples of organisational practices in this area have been published. They vary a great deal and are largely unevaluated. An exception is the work done by the Post Office where impressive findings recorded a reduction in average trauma related sick leave of 50 per cent. Set-up costs for the service were £88,300, with subsequent running costs of £10,000 a year. In the first three years, savings to the organisation had run at £100,000 a year. In this example, debriefing was used in connection with a range of other training, education and support services.

7.15 Overall

It is apparent from this review of the literature that PTSD or associated disorders may affect individuals across many different occupations.

The prevalence of PTSD in different occupational groups varies enormously, hence only rough estimates can be gained as to the extent of the problem in different occupational settings, and these are hampered by poor or unsystematic recording of PTSD symptoms.

Some evidence on prevalence in different occupational groups is available. However, employers can only assess the scale of the risk in their organisation by undertaking a psychosocial hazard assessment (i.e., a risk assessment of psychological hazards).

Employers need to consider that not only major events, but in some instances ongoing situations (e.g., bullying) or ‘everyday’ aspects of the job (e.g., violence) can give rise to PTSD.

Every care needs to be taken by organisations implementing trauma management practices that the service has clear objectives against which outcomes can be measured.

There is urgent need for more methodologically robust research on the prevalence and management of PTSD and associated disorders in occupational settings. This would provide more reliable prevalence estimates and better quality information on good practice for organisations.
Appendix 1: DSM-IV — Diagnostic Criteria for 309.81 Post-Traumatic Stress Disorder

A. The person has been exposed to a traumatic event in which both of the following were present:

1. The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.

2. The person’s response involved intense fear, helplessness, or horror. Note: in children, this may be expressed instead by disorganised or agitated behaviour.

B. The traumatic event is persistently reexperienced in one (or more) of the following ways:

1. Recurrent and intrusive distressing recollections of the event, including images, thoughts or perceptions. Note: in young children, repetitive play may occur in which themes or aspects of the trauma are expressed.

2. Recurrent distressing dreams of the event. Note: in children, there may be frightening dreams without recognisable content.

3. Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). Note: in young children, trauma-specific re-enactment may occur.

4. Intense psychological distress at exposure to internal or external cues that symbolise or resemble an aspect of the traumatic event.

5. Physiological reactivity on exposure to internal or external cues that symbolise or resemble an aspect of the traumatic event.
C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:

1. Efforts to avoid thoughts, feelings, or conversations associated with the trauma.
2. Efforts to avoid activities, places, or people that arouse recollections of the trauma.
3. Inability to recall an important aspect of the trauma.
4. Markedly diminished interest or participation in significant activities.
5. Feeling of detachment or estrangement from others.
6. Restricted range of affect (eg unable to have loving feelings).
7. Sense of foreshortened future (eg does not expect to have a career, marriage, children, or a normal life span).

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

1. Difficulty falling or staying asleep.
2. Irritability or outbursts of anger.
3. Difficulty concentrating.
4. Hypervigilance.
5. Exaggerated startle response.

E. Duration of the disturbance (symptoms in Criteria B, C and D) is more than one month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

Acute: if duration of symptoms is less than three months

Chronic: if duration of symptoms is three months or more

Specify if:

With delayed onset: if onset of symptoms is at least six months after the stressor.
Appendix 2: International Classification of Diseases (ICD-10)

In 1992, the World Health Organisation published their Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines (ICD-10). A new section (F43) was included — reaction to severe stress, and adjustment disorders, which included PTSD. Hence, the condition became available for diagnosis worldwide (Weissath and Eiting, 1991).

In ICD-10, the definition of trauma was couched in looser terms — an exceptionally threatening or catastrophic event, which would cause pervasive distress in almost everyone. The symptomology was arranged in a very similar way to DSM III-R, ie three groups of symptoms.

The ICD-10 descriptions also included the possibility of enduring personality change (ie of three or four years’ duration) as a result of trauma (Kleber and Brom, 1992; Weissath and Eiting, 1991). Delayed and protracted versions of the disease were also available as a diagnosis. Shortly after the introduction of ICD-10, a revised version of the DSM definition of PTSD was introduced (DSM-IV, APA, 1994).
Appendix 3: References

Aguilera D C (1990), Crisis intervention, Theory and Methodology (6th edition), C V Mosby


American Psychiatric Association (1988), Let’s talk facts about . . . Post-traumatic stress disorder, APA

American Psychiatric Association (1980), Diagnostic and Statistical Manual of Mental Disorders III (3rd edition), APA, Washington, DC


Artiss K (1963), ‘Human behaviour under stress from combat and social psychology’, *Military Medicine* 128, 806-808


Banking, Insurance and Finance Union (1991), *Violence at work. A guide to prevention* (with specific reference to home visiting), August, BIFU

Banking, Insurance and Finance Union (1991a), *Aftercare and post-raid counselling*, September, BIFU


Blake D, Weathers F, Nagy L, Kaloupek G, Charney D, Keane T (1990), *Clinician Administered PTSD Scale (CAPS)*,
National Center for Post-Traumatic Stress Disorder, Behavioral Science Division — Boston, VAMC, Boston

Blanchard E B et al. (1996), 'Psychometric properties of the PTSD checklist', Behavioral Research Therapy, 34, 8


Boudewyns P A, Hyer L (1990), 'Physiological response to combat memories and preliminary treatment outcome in Vietnam Veteran PTSD patients treated with direct therapeutic exposure', Behavior Therapy, 21


Braddon, Gibbling, Tait (1993), Selection, Management and Training of Victim Recovery and Identification Teams, PRG, Home Office


Brown M W, Williams J (1918), Neuropsychiatry and the War, a bibliography with abstracts, National Committee for Mental Hygiene, New York


Brown M W, Williams J (1918), Neuropsychiatry and the war: A bibliography with abstracts, National Committee for Mental Hygiene, New York


Busuttil A M C, Busuttil W (1995), 'Psychological debriefing', British Journal of Psychiatry, 166, 676-677

Busuttil A M C, Busuttil W (1997), Debriefing and crisis intervention, in Black et al. (eds), Psychological Trauma: A Developmental Approach

Capewell E (1993), 'Critical incident management in the workplace', EAP International, Spring, 7-10

Carkhuff R, Truax C (1965), 'Lay mental health counselling'. Journal of Consulting Psychology, 29, 426-431


Centob C M, Tomas S, Law W, Creminiter D (1997), Post-disaster psychosocial intervention: A field study on the
impact of debriefing on psychological distress', *American Journal of Psychiatry*, 154, 3


Clegg F (1988), 'After the Disaster', *Community View*, Vol. 46, 6-8


Cooper N A, Clum G A (1989), 'Imaginal flooding as a supplementary treatment for PTSD in Combat Veterans: a controlled study', *Behavior Therapy*, 20


Cox T (1993), *Stress research and stress management: Putting theory to work*, HMSO

Crandon L (1997), *Stress Therapy*, *Police Review*, 24 January

Crowe, Stradling S (1993), *Dimensions of perceived stress in a British Police Force*

Crumley B (1990), 'Fizzzz went the Crisis', *International Management*, April, 52-53
Davey J (1996), Current developments in Police training and research in the fields of post-traumatic stress and disaster aftermath, Paper presented to British Psychological Society one-day conference on Psychological Responses to Disaster

David R (1990), ‘Damage Limitation’, Business, April, 88-91


Directorate of Occupational Health (1995), Trauma support programme, Metropolitan Police


Dynes R, Quarantelli E L, Kreps G (1981), A Perspective on Disaster Planning, Disaster Research Center, University of Delaware, Newark, Delaware


Elliot D, Smith D (1993), 'Coping with the Sharp End: Recruitment and Selection in the Fire Service', Disaster Management, Vol. 5, No. 1


Fennell D (1988), Investigation into the King's Cross Underground Fire, HMSO, London


Fischman (1984), 'Trauma Junkies', Psychology Today, Vol. 18, No. 1, 27


Flannery R B et al. (1995), The assaulted staff action program: An approach to coping with the aftermath of violence in
the workplace', in Murphy L R et al. (eds) Job Stress Interventions, American Psychological Association


Foss O T (1994), 'Mental First Aid', Social Science and Medicine, 38, 479-482


Goenjian A K et al. (1997), 'Outcome of psychotherapy among early adolescents after trauma', American Journal of Psychiatry, 154, 4

Goldberg and Williams (1988), A Users’ Guide to the General Health Questionnaire, GHQ, NFER, Nelsen, Windsor


Greiner L (1972), 'Evolution and Revolution as Organisations Grow', Harvard Business Review


Griffiths J, Watts R (1992), 'The Dempsey and Grafton bus crashes: the aftermath', Instructional Design Solutions, East Linsmore


Hamill N (1991), Sources and Levels of Stress in Ambulance Personnel and Ways of Coping, unpublished report, Birmingham University, School of Psychology

Hammarberg M, Silver S M (1994), 'Outcome of Treatment for Post-traumatic Stress Disorder in a Primary Care Unit Serving Vietnam Veterans', Journal of Traumatic Stress, 7 (2), 195-216


Health and Safety Executive (1992), Management of Health and Safety at Work — approved code of practice, HSE Books

Health and Safety Executive (1993), Successful Health and Safety Management, HSE Books


Health and Safety Executive (1997), Ocean Odyssey Emergency Evacuation: Analysis of Survivor Experiences', HSE


Herman J L (1997), Recovery from Psychological Trauma, a paper delivered at the 12th Tokyo Institute of Psychiatry International Symposium, Research and Treatment of Post-traumatic Stress Disorder


Hillenberg J B, Wolf K L (1988), 'Psychological impact of traumatic events: Implications for employee assistance


Holen A (1990), *A Long-term Outcome Study of Survivors from a Disaster: The Alexander L Kielland Disaster in Perspective*, Monograph, University of Oslo, Norway


Horowitz M J (1976), *Stress Response Syndromes*, Jason Aronson


Jones (1990), in *Industrial Crisis Quarterly*, Vol. 4, No. 4


Keane T M (1985), ‘Defining traumatic stress: some comments on the current terminological confusion’, *Behavior Therapy*, 16 (4), 419-423


Kenardy J A et al. (1996), 'Stress debriefing and patterns of recovery following a natural disaster', Journal of Traumatic Stress, Vol. 9, No. 1, 37-49


Kinchin (1994), conference reports in Disaster Management, Vol. 6, No. 1

Kleber R J, Brom D (1992), Coping with trauma: theory, prevention and treatment, Swets and Zeitlinger

Kleber R J, van der Velden P G (1996), 'Acute stress at work', from Schabracq M J et al. (eds), Handbook of Work and Health Psychology, John Wiley and Sons Ltd


Leather P, Dickson R (1995), 'Occupational violence, stress, coping and perceived organizational support', BPS


Lindemann E (1944), 'Symptomology and management of acute grief', American Journal of Psychiatry, 101 (September), pgs. 141-148


Litz B T, Penk W E, Walsh S et al. (1991), 'Similarities and Differences between MMPI and MMPI-2 Applications to the Assessment of Post-traumatic Stress Disorder', Journal of Personality Assessment, 57, 238-253


Lyons J, Keane T (1989), 'Implosive Therapy for the Treatment of Combat-related PTSD', Journal of Traumatic Stress, 2, 137-152


McFarlane A C (1988), 'The longitudinal cause of post-traumatic morbidity: the range of outcomes and their predictors', *Journal of Mental and Nervous Diseases*, 176, 30-39

McLay W D S (1992), *Therapeutic Counselling for Police Officers*, report, PRG Home Office

McLeod J, Cooper D (1992), *A Study of Stress and Support in the Staffordshire Fire and Rescue Service*


MSF (1993), *Prevention of violence at work: An MSF guide with model agreement and violence at work questionnaire*, MSF Health and Safety Office


Norris F H (1992), 'Epidemiology of Trauma: Frequency and Impact of Different Potentially Traumatic Events on Different Demographic Groups', Journal of Consulting Clinical Psychology, 60, 409-418


O'Donnell I, Farmer R D T (1994), 'The Epidemiology of Suicide in the London Underground', Social Science and Medicine, 38, 409-418

Orner R (1997), 'Falklands War veterans: What lies ahead as they emerge from obscurity?', The Psychologist, 8 August


Parkes C M (1991), 'Planning for the aftermath', Journal of the Royal Society of Medicine, 84, 22-25


Pauchant T, Mitroff I I (1992), Transforming the crisis-prone organisation, Jossey Bass, San Francisco

Pennebaker J W (1985), 'Traumatic experiences and psychosomatic disease', Canadian Psychologist, 26, 82-95


Pennebaker J W, Susman J (1988), 'Disclosure of traumas and psychosomatic processes', Social Science and Medicine, 26, 327-332


Price H H (1984), 'The Falklands: the rate of British psychiatric combat casualties compared to recent American wars', Journal of the Royal Army Medical Corps, 130, 109-113


Raphael B (1979), 'A Primary Prevention Action Programme, Psychiatric Involvement Following a Major Rail Disaster', Omega, 10 (3), 211-226


Raphael B et al. (1983-4), 'Who Helps the Helpers? Effects of Disasters on Rescue Workers', Omega, 14. 9-20

Rasmussen J, Pederson O M (1982), Formalised search strategies for human risk contributions: a framework for further development, Riso-M-2351, Riso National Laboratory, Roskilde, Denmark


Robinson R (1984), Health and Stress in Ambulance Services, report of evaluation study, Part 1, unpublished research report, Social Biology Resource Centre, Victoria, Australia


Rosen G M (1995), ‘The Aleutian Enterprise Sinking and Post-Traumatic Stress Disorder: Mis-diagnosis in clinical and
forensic settings', Professional Psychology Research and Practice, 26 (1), 82-87


Shapiro D, Kunkler J (1990), Psychological support for hospital staff initiated by clinical psychologists in the aftermath of the Hillsborough disaster, Sheffield Health Authority Mental Health Services Unit


Shwartz H S (1989), ‘Organisational disaster and organisational decay: the case of the National Aeronautics and Space Administration’, Industrial Crisis Quarterly 3(4), 319-334


Sowney R (1996), ‘Stress debriefing: reality or myth?’, *Accident and Emergency Nursing* 4 (1) 38-9


Tang D (1994), Psychotherapy for train drivers after railway suicide, special issue: ‘Suicide on Railways’, Social Science and Medicine, 38 (3), 477-478

Taylor A J W (1989), Disasters and Disaster Stress, AMS Press, New York


Consequences for Subway Drivers', *Psychosomatic Medicine*, 54, 480-488


Thompson J (1990), 'Kuwait Airways Hijack. Psychological Consequences for Survivors', *Stress Medicine* No. 6, 1-7


Tranah T, Farmer R D T (1994), 'Psychological Reaction of Drivers to Railway Suicide', *Social Science and Medicine*, 38, 459-469


Wing et al. (1974), The measurement and classification of psychiatric symptoms, Cambridge University Press


## Appendix 4: Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>acute</td>
<td>The sudden and severe onset of symptoms.</td>
</tr>
<tr>
<td>aetiology</td>
<td>The study of causation, in particular, what causes certain mental disorders and other illnesses.</td>
</tr>
<tr>
<td>affective/affectivity</td>
<td>Related to feelings or emotions, and the propensity to react with feeling or emotion.</td>
</tr>
<tr>
<td>alpha</td>
<td>When measures for PTSD are being assessed, their internal consistency is expressed as ‘alpha’.</td>
</tr>
<tr>
<td>anxiety</td>
<td>A stressful reaction characterised by fear, apprehension or dread. In some mental disorders, the reaction may be chronic and may damage both psychological and physical health.</td>
</tr>
<tr>
<td>arousal/hyper-arousal</td>
<td>Being constantly alert to a threat, regardless of the true risk. This shows itself in things like insomnia, being easily startled, irritability, etc.</td>
</tr>
<tr>
<td>ASD</td>
<td>Acute Stress Disorder</td>
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<tr>
<td>avoidance</td>
<td>Attempts to avoid recalling events, emotions, reminders etc., in this context, those associated with a traumatic event. Numbing is another symptom of avoidance.</td>
</tr>
<tr>
<td>BDI</td>
<td>Beck’s Depression Inventory. A general mental health, self-report measure.</td>
</tr>
<tr>
<td>BSI</td>
<td>Brief Symptom Inventory. A general mental health, self-report measure.</td>
</tr>
<tr>
<td>CAPS</td>
<td>Clinician Administered PTSD Scale. A structured interview measure of PTSD.</td>
</tr>
<tr>
<td>caseness</td>
<td>When individuals are tested for things like PTSD, a cut off point is decided for scores. Those scoring above this threshold are considered to have the mental problem being tested for. These people are called ‘cases’ and hence, the test is being administered to establish ‘caseness’.</td>
</tr>
<tr>
<td>chronic</td>
<td>Experienced over a long time period.</td>
</tr>
<tr>
<td>CISD</td>
<td>Critical Incident Stress Debriefing</td>
</tr>
<tr>
<td>cognitive/cognition</td>
<td>The mental process which involves people in thinking, conceptualising, imagining, conceiving, remembering, judging, perceiving, etc.</td>
</tr>
<tr>
<td>debrief(ing)</td>
<td>Debriefing may take place at the scene of the traumatic event, or some days afterwards. It is the process by which traumatic reactions are investigated, confronted and integrated into the memory. Debriefing may be one-to-one or in groups.</td>
</tr>
<tr>
<td>defusing</td>
<td>A discussion of immediate reactions and feelings which takes place within a few hours of a traumatic event.</td>
</tr>
<tr>
<td>DIS</td>
<td>Diagnostic Interview Schedule. A structured interview measure of PTSD.</td>
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<tr>
<td>dissociation</td>
<td>Individuals may split off distinct parts of their mental life, eg work and home, and function separately in each of them. Their behaviour in different spheres may even be contradictory.</td>
</tr>
<tr>
<td>DSM</td>
<td>Diagnostic and Statistical Manual of Mental Disorders, published by the American Psychiatric Association.</td>
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<tr>
<td>ego</td>
<td>Generally, this word is used to describe a sense of identity or self. More technically, this is the Freudian word for that part of the personality which deals with external reality.</td>
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<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>GHQ</td>
<td>General Health Questionnaire. A general mental health, self-report measure</td>
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<tr>
<td>homeostasis</td>
<td>The system by which the body or the psyche adjust to external stimuli in order to maintain equilibrium. The common analogy for homeostasis is the central heating thermostat, which turns the heat on and off according to room temperature.</td>
</tr>
<tr>
<td>homicidality</td>
<td>Propensity to inflict harm on other people.</td>
</tr>
<tr>
<td>ICD</td>
<td>International Classification of Mental and Behavioural Disorders, produced by the World Health Organisation.</td>
</tr>
<tr>
<td>ideation</td>
<td>The process by which ideas are formed.</td>
</tr>
<tr>
<td>IES</td>
<td>Impact of Events Scale. A self report measure of avoidance and intrusion symptoms.</td>
</tr>
<tr>
<td>imaginal flooding</td>
<td>As images are used to encode and represent memories, unwanted memories may be 'over-written' if the mind if flooded with alternative images while the event is being recalled.</td>
</tr>
<tr>
<td>internal consistency</td>
<td>If the questions in a self report measure of PTSD were divided into two at random, and each half of the questionnaire were administered separately, in theory the scores for test should be exactly the same. Internal consistency measures how close the test is to this ideal. The statistical tool used to measure internal consistency is expressed as 'alpha'. An alpha value of 1.0 is the perfect result, only obtainable in theory. In practice an alpha value of 0.6 or 0.7 is the lowest acceptable value.</td>
</tr>
<tr>
<td>morbid</td>
<td>Abnormal, diseased or disordered.</td>
</tr>
<tr>
<td>neuropsychologic</td>
<td>The interface between the nervous system and psychological processes.</td>
</tr>
<tr>
<td>numbing</td>
<td>A reduction in general responsiveness, an avoidance symptom. This may be displayed in feelings of detachment from others, a sense of foreshortened future and a reduction in interest in previously important activities.</td>
</tr>
<tr>
<td>PD</td>
<td>Psychological debriefing.</td>
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<tr>
<td>pharmacotherapy</td>
<td>Treatment with drugs.</td>
</tr>
<tr>
<td>PK-MMPI</td>
<td>Keane PTSD Sub-scale of the Minnesota Multiphasic Personality Inventory. A self report measure of many PTSD symptoms.</td>
</tr>
<tr>
<td>psychophysiology/psychophysiology/psychophysiology/psychophysiology</td>
<td>Using non-intrusive methods of measuring physiological processes to get information about psychological processes, eg measuring the electrical conductivity of the skin, and thereby perspiration in order to deduce level of distress.</td>
</tr>
<tr>
<td>psychosocial</td>
<td>Where a behaviour or mental process has either a social origin or impact.</td>
</tr>
<tr>
<td>PTSD</td>
<td>Post-traumatic Stress Disorder.</td>
</tr>
<tr>
<td>PTSD-I</td>
<td>Post-traumatic Stress Disorder Interview. A structured interview measure of PTSD.</td>
</tr>
<tr>
<td>re-experiencing</td>
<td>Traumatic events particularly, have the capacity to intrude into current thoughts. Individuals may re-experience trauma, eg have flashbacks of their experiences and all of the emotions which went with it. Re-experiencing may also manifest itself in nightmares, or in children through repetitive play.</td>
</tr>
<tr>
<td>SCID</td>
<td>Structured Clinical Interview for DSM III-R. A structured interview measure of PTSD.</td>
</tr>
<tr>
<td>sensitivity</td>
<td>The ability of a test for PTSD to pick up very low levels of symptoms in individuals and populations.</td>
</tr>
<tr>
<td>sequela/sequelae</td>
<td>A morbid condition following from and because of an illness, mental or physical.</td>
</tr>
<tr>
<td>serotonergic</td>
<td>Serotonin is a brain chemical which is involved with moods, motivation, pain, relaxation etc. Serotonergic drugs act to stimulate the production of these chemicals.</td>
</tr>
<tr>
<td>specificity</td>
<td>How well a measure of PTSD can differentiate it from other mental health problems.</td>
</tr>
<tr>
<td>Stimulus-response</td>
<td>A stimulus is any object or event which causes an effect on an individual. Stimulus-response theory suggests that human behaviour can be understood in terms of set</td>
</tr>
</tbody>
</table>
responses to stimuli, i.e. A causes B to happen.

stressor
The things people report as causing them stress.

suicidality
Propensity to inflict harm on oneself.

threshold
The cut off point for a score or scale which aims to measure some type of mental ill-health. Those who exceed the score are ‘above threshold’ and can be classed as having the disorder in question.

Source: IES/Drever & Wallerstein, 1984/Stratton & Hayes, 1993