20TH *Anniversary* EDITION

How floodplain risk management has evolved | Two decades of response to emergencies | Insights into the AFP's role during national and international emergencies

historical snapshot

Tropical *Cyclone Winifred* impacted northern Queensland on 1 February 1986, crossing the coast near Cowley Beach, south of Innisfail. Wind gusts reached up to 175km per hour, with damage and disruption extending from north of Cairns to Cardwell and inland on a narrow front to Ravenshoe.

Three people died, one through drowning, one struck by flying debris, and a third fell from a roof while trying to secure loose iron. The worst affected areas were between Babinda and Tully (which suffered major flooding). A 1.6m storm surge was recorded at Clump Point near Mission Beach.

Fifty homes were destroyed and approximately 1500 houses and buildings were damaged. Agricultural crops, including sugar cane and bananas, suffered the most significant damage and accounted for about 70 per cent of the total economic cost. Insurance costs exceeded $65 million in current equivalent values. There was also serious vegetation damage to State forests.

Winifred was a severe test of community preparedness and public understanding of cyclones as well as of the total warning process. In the hierarchy of severe tropical cyclones, *Winifred* was of moderate intensity but relatively large in its area of impact.

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Vol 21 | No 1 | **February** 2006

Please note that contributions to the *Australian Journal of Emergency Management* are reviewed. Academic papers (denoted by **R**) are peer reviewed to appropriate academic standards by independent, qualified experts.

FOREWORD

by the Hon Philip Ruddock MP, Attorney-General, Attorney-General's Department

Disasters and emergencies in Australia are a part of life. They epitomise the resilience, the mateship and the prevailing principle of people helping each other in their time of need for which Australians are renowned. In many respects, the way in which our community responds in the face of adversity defines us and binds us together as a nation.

The estimated annual cost of disasters in this country, including the physical, economic and social impact, is at least $3 billion. The reality is disasters, whether natural or human-caused, will continue to occur. As Australians, we need to continue to learn from these events in order to be better prepared and to make our communities safer and more secure.

In recent times, we have witnessed unimaginable scenes of devastation and human misery associated with the Northern Sumatran earthquake and tsunami, *Hurricane Katrina* and the earthquake in Pakistan. These high-profile emergencies are poignant reminders of the impact of natural disasters but we cannot forget the smaller emergencies that affect communities across the globe, almost on a daily basis.

As the emergency management environment and nature of risks change, so, too, do the challenges that confront us. As leaders, policy makers, decision makers, frontline personnel and volunteers, we must meet those challenges through a collective commitment to the mitigation of disaster impact, the promotion of community safety and an investment in community resilience.

Integral to achieving this is our ability to communicate effectively and share ideas. The *Australian Journal of Emergency Management* (AJEM) has been facilitating robust discussion and scholarly debate for 20 years. Since 1985, its pages have featured extensive analysis, considered views, lessons learnt and insights to current and future issues, as well as stimulating and advancing discussion of innovative emergency management practices. Put simply, there is nothing else like it on the emergency management landscape.

In these past two decades, the Australian Government's scope of activity, primarily through Emergency Management Australia (EMA), has extended beyond just natural disasters and now must encompass technological and human-caused disasters. This evolution began in the late 1990s to address issues such as Y2K and the return to earth of the MIR space station.

Emergency management became a whole-of-government priority focussing on critical infrastructure, working with and engaging the private sector, the interdependency of jurisdictions, consideration of health and wellbeing issues as well as forging genuine partnerships with our regional neighbours.

Community vulnerability and risk management have become well understood concepts, far beyond what could ever have been envisaged when the original Natural Disasters Organisation was established in 1974. Environmental shifts towards greater urban development, economic globalisation, increased technology and climate change also have contributed to the changing nature of risks posed to communities.

Terrorist attacks such as those in the United States, Bali, Madrid and London have added another dimension to emergency management. Protecting our people and places is the Australian Government's highest priority. Emergency management is critical in this approach. Through strategic partnerships and an "all hazards", multi-agency, whole-of-government approach, the Australian Government has established a national framework based on the principles of maximum preparedness, comprehensive prevention, effective response and speedy recovery.

AJEM has been instrumental in documenting and tracking trends in emergency management and it remains committed to providing access to information and knowledge for the research community and practitioners. The effective transfer and update of innovative practice, backed-up where necessary with carefully targeted research is critically important. EMA plays a key role in capturing and transferring research and innovation aimed at reducing emergency-related loss of life, property damage and economic and social disruption caused by disasters.

The strength of this journal is in its objectivity, with the variety of the published material effectively reflecting this ethos.

I congratulate AJEM and EMA on twenty years of publication. As risks evolve, and governments and communities change, the sound body of knowledge and expertise presented will continue to help make our communities safer and more secure.

Hon Philip Ruddock MP
Attorney-General
February 2006

The evolution of floodplain risk management and real-time flood management planning in New South Wales

Chas Keys reflects on floodplain risk management endeavours and planning for flood response over the years

Introduction

Queensland and New South Wales account for the great bulk of the flood problem in Australia. In round terms each of the two states bears 40 per cent of the total economic cost which floods generate nationally and the great bulk of the deaths which they cause. Estimates of the average annual dollar costs of flooding in NSW range (in 1998 dollar terms) from $128 million for all floods costing at least $10 million between 1967 and 1999 – not a period associated with particularly frequent or severe flooding (Bureau of Transport Economics, 2001:35) – to $148 million (Agriculture and Resource Management Council of Australia and New Zealand, 2000:2). Genuinely severe floods, such as the 1955 flood in the Hunter Valley which cost roughly $700 million in today's dollar terms, may by themselves greatly exceed the state-wide average. As far as deaths are concerned, floods in NSW have killed hundreds of people and perhaps as many as 1,000 since the beginning of European settlement.

In the history of NSW, there have been six separate flood events which have killed at least 20 people (Coates, 1996:51).

In NSW there have been formal attempts to manage the problems wrought by flooding almost since the earliest days of the colony. The effort intensified after the great floods of the mid-1950s, and especially over the last three decades considerable sums have been expended on floodplain management initiatives around the State. Increased attention has also gone into planning to improve the quality of real-time responses to floods since the early 1990s.

Influencing and protecting development: floodplain risk management initiatives

Governor Lachlan Macquarie began the floodplain management effort during the second decade of the nineteenth century, providing allotments on high ground for the dwellings of settlers farming the lower floodplains of the Nepean and Hawkesbury rivers. He set up the 'Macquarie towns' which were intended to be (but as the 1867 flood proved were not) above the levels which floods could reach. Later in the century a number of towns in other river valleys were relocated from severely flood liable sites to locations on higher ground. Bega, Gundagai, Moama and Nowra were among them. Other towns, bruised by the experience of repeated flooding, began to eschew the lowest-lying land near major watercourses. Farmers constructed levees to keep floods out of croplands and some towns, especially in the western parts of NSW, formed the habit of pushing up earth levees when floods were approaching.

But it took the events of 1954–56, when almost all the State's major rivers saw genuinely serious floods, to initiate a trend towards comprehensive, co-ordinated floodplain management initiatives in NSW. Before long a number of special-purpose flood mitigation authorities had been established in the valleys which were especially badly affected. These councils (and where they did not exist the territorial councils of local government) moved to contain the effects of flooding, principally by building levees to protect the flood prone parts of urban centres. In several cases, ring levees were built to give protection to whole towns. Dams constructed to provide irrigation and town water supplies were planned with flood storage 'airspace', contributing to the mitigation effort, and drainage works were undertaken to allow the speedy removal of floodwaters from farms on floodplains.

This was the era of structural works aimed at controlling flooding. Helped by grants from the higher levels of government, considerable sums were spent by councils to build them. By contrast little was done to use planning instruments to restrict development on floodplains. Powers existed, but even when they were used, the monitoring and enforcement were weak (May et al, 1996:72). Nor were there concerted efforts to modify existing developments to ensure their greater resilience when flooding occurred.

Severe and repeated flooding across much of NSW in the early and mid-1970s generated the impetus for the creation of a stronger regulatory system by which the State Government sought to remove existing development from flood liable areas or to make it more compatible with the flood risk, and to prevent future development from being undertaken there. The instruments adopted to ensure local councils' compliance with the new policy were highly stringent, prescriptive and coercive (Smith, 1998:236), and there was considerable resistance. There was also a public outcry against the maps which the State Government had produced to show in statistical (annual exceedence probability) terms the level of flood risk in various flood liable areas. People felt they would have the effect of devaluing their properties. Eventually, the maps were withdrawn.

The pressures mounted against the policy by councils and the public forced a radical modification of it in 1984. A more flexible, more co-operative approach emerged in which development outcomes on floodplains were negotiated according to their merits rather than on the basis of strictly statistical measures of flood frequency which substantially ignored the realities of flood impacts. These varied greatly in different areas for land with similar levels of risk in terms of frequency of inundation. The State

Government incorporated its new flood policy in a guiding manual for councils (NSW Government, 1986) and provided substantial funding so that flood problems could be carefully studied before land use decisions were made or mitigation measures adopted. The previous emphasis on levees was reduced, too, by the encouragement given to the voluntary purchase of flood prone properties and the raising of houses on floodplains. Floodplain management was becoming more flexible in approach and more varied in method.

The manual has been re-issued twice (NSW Government, 2001, 2005) with considerable modification of detail and with further comprehensiveness of approach being introduced. Emergency management measures relating to preparations for flooding are increasingly to the fore, and councils have been required to take note not only of adopted 'design' floods (typically the 1 per cent annual exceedence probability event) but of rarer and more devastating floods up to the level of the Probable Maximum Flood (PMF).

Despite the many controversies which have accompanied the evolution of floodplain management policy in NSW, including those of the mid-1980s, it has been a signal success in the management of the effects of flooding. One independent expert observer has argued that floodplain management policy in NSW is "close to international best practice in the field" (Smith, 1999:1), the State having approached the problem with "a degree of consistency and vigour unmatched by the other states of Australia" (Smith, 1998:235). The outcome has been a considerable slowing of the increase in the exposure of public and private assets, a reduction in flood relief payments and a considerable mitigation of the disruption and nuisance which flooding causes. NSW is, to a significant extent, a case in which the oft-stated

"manageability" of flooding has been achieved as a result of the promotion and funding of a wide range of increasingly well-tried methods which can exploit this very characteristic of the flood hazard.

Preparing for the real-time management of floods

Floodplain management initiatives are undertaken outside flood time in anticipation of flooding occurring in the future. When floods actually occur there is a need to manage their effects in real time. Communities did this from the start in NSW. Private and police boats were used to rescue people in danger and to resupply those who were cut off by floodwaters, the local efforts sometimes reaching quite high levels of co-ordination and sophistication. Between 1869 and 1900 a number of towns on the eastward-flowing rivers between the Hawkesbury River and the Queensland border set up volunteer 'water brigades' for the purpose of saving life and property during times of flood (Lewis–Hughes, 1998). At least 20 brigades had been formed by the end of the nineteenth century and, while most had gone out of existence by the 1950s, their crews of young men in rowboats had saved many lives when people were trapped in rising floodwaters, unable to escape by their own efforts.

The great floods of the mid-1950s resulted in a special purpose, volunteer-based flood management agency, the State Emergency Services (SES), being established to lead communities through future episodes of flooding. The SES has been involved in flood response activities ever since, beginning with organising the raising of existing levees to protect property when floods were approaching and delivering blankets to evacuation centres when people had been forced to leave their homes. But the SES was quickly involved in preparing for flood responses as well. This it did by working to

improve the quality, safety and numbers of floodboats which were used for rescue and resupply purposes when floods were occurring, and by augmenting or establishing basic flood warning systems in river valleys throughout the State. This latter task involved recruiting volunteer gauge readers and developing arrangements for the collection and interpretation of flood data from the field and the broadcasting of information and advice over radio stations.

Later, the SES began to develop simple plans to guide local flood response activities and to experiment between events to find the best ways of dropping supplies to people who were cut off by floodwaters. During the 1970s, in particular, the SES became highly practised in setting up tent cities for evacuees and in managing evacuation operations generally. In flood times, the SES came to be the central co-ordinating agency for the many types of response activity that had to be undertaken.

But in 1989, a report on the activities of the SES was severely critical of its efforts in the planning field. The suggestion that the management had not been sufficiently forceful in promoting flood planning brought a new approach. Increased emphasis was placed on the development and utilisation of 'flood intelligence' (basically, information on the consequences of flooding in defined areas at specified gauge heights), and significant resources were devoted to the development of flood plans at the local council level. These plans created 'records of intended proceedings' for flood operations, and as the bank of flood intelligence grew it became more and more possible for SES controllers to visualise the kinds of decisions and actions which would be needed for floods of different levels of severity within their areas of responsibility. By the mid-1990s all council areas with a significant riverine flood problem (more than

130 out of the then 170 local government areas in the State) had a flood plan which noted what would be done to address the warning, information-providing, resupply, property-protecting, evacuation and other tasks which usually need to be carried out when floods occur.

As far as possible, within the limits of the available intelligence, all levels of flood severity were recognised in this planning, including flooding caused or made worse by dam failure. Several dams in NSW were known to be at risk of failure in extreme rainfall events or because of structural deficiencies, and planning to warn and evacuate people below them became an important component of the SES's flood planning generally. In like vein, the SES developed arrangements to guide responses to tsunami.

When each council area had a flood plan, attention shifted to deepening their contents and ensuring that SES personnel understood how to use their provisions. The latter objective was sought in part by introducing a regime of periodic testing of plans and personnel, tabletop exercises being used to identify the sorts of decisions which would be required given particular forecasts of flood severity (for example, in predictions provided by the Australian Bureau of Meteorology). At the same time the planning for key tasks, notably warning and evacuation, became more detailed and the plans spelled out how these tasks would be carried out under specified conditions (for example, in relation to severity).

Doorknocking operations, needed when many people have to evacuate, are being planned in considerable 'how-to' detail and the arrangements tested in field exercises. SES division (regional) controllers have recently been required to prepare indicative warning messages outside flood time to guide what will be sent to radio stations for broadcast during floods. Preparing these messages in quiet time ensures that the flood intelligence can be appropriately

incorporated and the relevant notes of persuasion to action (whether to protect assets or to evacuate) are included. Experience had shown that it was extremely difficult to get these issues properly covered when warning messages were put together wholly during the busy time when floods were approaching. Too often, what went to air did not adequately explain the problem to people in the path of coming floods or motivate the responses required to promote property protection or evacuation to safety. Many warning messages, in fact, were simply not understood by their intended audiences.

More depth was also sought in the planning of evacuation operations. This was stimulated by the recognition that NSW has several areas in which there will, in severe floods, be large numbers of people needing to evacuate to safety in short periods of time before evacuation routes are lost to rising floodwaters. The Windsor area, on the Hawkesbury River, and the Lismore area, on the Richmond, are two such cases. The recognition that many lives will occasionally be at risk in such situations (which include instances of densely-populated 'flood islands' which will be fully submerged in floods well below PMF proportions) has stimulated an approach in which evacuations are carefully planned against time horizons. The intention here is to ensure operations can be 'paced' to get everybody to safety in the time available as determined by the flood forecasts on the day. This work is an example of the concern the SES has about the dangers that will be created by very severe floods worse than have been seen in the State's flood prone communities to date (see Opper, 2004, for a full description of the timeline approach).

One further example of the SES's flood management work should be mentioned. This is the effort, especially over the past five years, to educate the members of flood prone communities about the

The Kelso floodplain on the eastern side of the Macquarie River at the peak of the flood of August, 1986, the year before the voluntary acquisition scheme was introduced. Note particularly the density of dwellings in Hereford St, left of the centre of the photo and running away from the river.

flood threat they face and what they can do as individuals to manage its potential effects on their own properties and families. Commemorations of past floods have been useful vehicles for the dissemination of 'floodsafe' action guides with contents tailored to local environments (Keys et al, 2003a). Breakfasts have also been held at which business operators in flood liable central business districts have been given flood planning toolkits to help them understand how they can better cope with floods in the future (Gissing et al, 2005).

Appraisal

What stands out in the history of floodplain risk management and planning for real-time flood management in NSW is the increasing comprehensiveness of the efforts being made, especially over the past 15–20 years. A wide range of flood mitigation measures, structural and non-structural, has been employed by councils to

tame the costs of flooding. It is difficult to be precise in economic terms about the impact of these measures, but it can be said that dozens of communities now have levee protection, and many have conducted programmes to remove dwellings and other buildings from flood liable areas or raise them higher above the ground. New development has also been discouraged from floodplains. The impacts of these measures have been widespread, significant and positive.

The SES's preparations for the real-time flood management task have similarly become more comprehensive. The planning is deeper and more detailed than previously. Flood intelligence is developing steadily (and with it, local volunteer comprehension of the problems to be dealt with is growing), and members of floodplain communities are being engaged in educational activities designed to help them better

manage the flood hazard in their own areas.

Floodplain risk management and planning for real-time flood responses are also being better integrated. Consultant studies of flood problems, once designed solely to inform councils' decisions on floodplain management strategies, are providing increasingly detailed and useful flood intelligence on which the SES can conduct its planning. In return the SES plays an increasing role in advising councils about emergency management considerations relating to potential developments on flood prone land (Keys et al, 2003b). This is in line with the State's flood policy which has sought, over time, to incorporate more formally the emergency management dimension of the flood problem.

Despite these significant positives, there are several barriers and challenges to be dealt with. Some relate to the relative infrequency of

flooding at the local level. Parts of NSW have had no floods for more than a decade, and no severe ones for much longer. The State has had three severe droughts during the past quarter century and, the floods of Nyngan (1990), Coffs Harbour (1996) and Wollongong (1998) notwithstanding, very few flood events that could be said to be genuinely severe. In these circumstances it is difficult for SES volunteers, most of whom have a bent towards response activities rather than planning, to develop and maintain a focus on preparing for floods. There is a risk when floods are few and far between that attention will drift to the organisation's many other roles.

The attention of councils may drift too, compounding the oft-existing tendency to believe that floods are less of a threat than the State's flood policy shows them to be, and leading to reduced vigilance about development on floodplains. Fortunately, many councils have

shown great tenacity in tackling their flood problems. One such council is Bathurst, in the NSW central west, where the 100 dwellings on the Kelso floodplain at the time of the 1986 flood have been reduced to 25 since a voluntary acquisition scheme was initiated in 1987. No doubt the occurrence at Bathurst of three floods of about 2 to 3 per cent annual exceedence probability in a short period (1986, 1990 and 1998) has helped to maintain the focus.

Similar cases of maintaining the commitment to the reduction of the impacts of flooding can be cited in other parts of the State. This has not been easy given the continued threat to the federal funding of floodplain risk management initiatives in recent times and the sense that the State government's flood management group (which has been crucial in guiding councils' efforts) has been reduced in size and to a degree marginalised

in numerous departmental restructurings since the mid-1990s.

Other challenges relate to difficulties in the relationship between councils and the SES. Some councils have been critical of SES flood warning initiatives, fearing negative short-term commercial effects and the 'advertising' of flood problems to the wider world. Some councils have also tended to use marginal planning practices in their own floodplain management dealings. One of these is the practice of requiring evacuation plans, in the case of development applications relating to flood prone land, to be prepared on behalf of development proponents before consent will be forthcoming. The SES has argued with councils and in the Land and Environment Court against this approach given that such plans are likely to be written only for the purpose of gaining consent, cannot be kept current and fit for the purpose of preparedness for evacuation, and cannot be policed

Source: Department of Lands   Panorama Avenue Bathurst 2795
www.lands.nsw.gov.au

The same scene at the peak of the flood of August, 1998. There has been a marked thinning out of houses in Hereford St and to a lesser extent in other streets to the right (south) which became part of the scheme later than was the case with Hereford St. The 1998 flood created an acceleration in the rate of take-up of council offers to purchase properties.

effectively over the longer term when properties change hands (see Keys et al, 2003b). The SES encourages private flood plans (indeed it has templates for their preparation) but it opposes their linkage to a consent context in which they are likely to be used to 'paper over' the safety issues relating to development sites rather than to address the problems.

These difficulties notwithstanding, floodplain risk management endeavours and planning for flood response have made considerable progress in NSW in recent times. The State's flood prone communities are undoubtedly in better stead to cope with flooding now than they used to be even though the challenges of ensuring they are made safer and less prone to economic loss remain. Making communities ready for the flooding they will inevitably face is a never-ending task. It is a task that cannot be met without both sound floodplain risk management practices and effective preparation for responses to floods.

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Author

Chas Keys is a flood management consultant. He worked for the NSW SES for 14 years, including seven as its Deputy Director General.

Other AJEM articles by Chas Keys

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Uneasy bedfellows: emergency managers and the media, Vol. 8 No. 2, Winter 1993, pp. 12–14

Risk and emergency management

Michael Tarrant looks at the challenges of the last 20 years that have contributed to developing current concepts and approaches to the emergency management function

Introduction

The 20th anniversary of *the Australian Journal of Emergency Management* coincides with a significant step in the process of enhancing decision-making and resource allocation in disaster management. A series of very significant disasters in the US and Australia through the 1960s and 70s triggered reflection on the conceptual and organisational underpinning of disaster management. These changes were manifested in Australia by the formation of the Natural Disasters Organisation (NDO now EMA) in 1974 and in the US it was the formation of Federal Emergency Management Agency (FEMA) in 1979. The "all hazards comprehensive emergency management approach" (McEntire 1997) was a major step forward from a civil defence paradigm of response and relief. The new framework, which included concepts such as prevention, mitigation and recovery, generated a need to allocate resources across a range of activities and hazards. This broadened framework required the development of new approaches (at least for disaster management) and the work on hazard analysis was one of the first steps. Hazard analysis involved identifying and assessing the characteristics of hazards, communities and the environment in which they interacted. The context for disaster management over the past 20 years has been a trend of ever increasing scope (see Figure 1). It has taken the sector from a civil defence function to the mainstream in community and organisational functioning. The challenge over the past 20 years has been to develop concepts and approaches to support the shift from the margins to the mainstream, coupled with an ever broadening context.

In Australia this activity began with the development of the first hazard analysis courses and support materials in 1986 at Mt Macedon, Victoria. A team, with a core membership of Bevis Dutton, John Handmer, Russell Blong, George Silberbauer, Neil Britton and myself, assembled to develop the concept. It soon became obvious that understanding and mapping hazards was only a starting point and that

the interface with communities and the environment in which that interaction took place was central to disaster management (McEntire 2004). The process of developing this broader understanding lead to a series of workshops and activities in the 1980s. These included hazard and community analysis, disaster consequence assessment and economics of disaster. In 1989 the workshop *New Perspectives on Uncertainty and Risk* identified and mapped many of the issues that would challenge progress in disaster management over the next two decades.

The next major stage in the evolution of approaches to emergency management occurred with the publication of the first *Australian Risk Management Standard* in 1995. This provided an holistic framework supporting the continued evolution of disaster management. Comprehensive emergency management enabled thinking about approaches beyond response and relief. The use of risk management was crucial in providing a common conceptual framework and language for the emergency management sector to engage more widely in society. It was also flexible enough to cope with changing contexts. The other important shift was the recognition that a whole-of-government approach was crucial to dealing with complex problems such as disaster management. There was growing acceptance that effective emergency risk management is a core part of good governance.

The most important characteristics of disasters are that they don't happen very often, are large and complex, and require non routine activity from individuals, organisations and communities. This makes them particularly prone to myths and inappropriate assumptions. The research literature on myths goes back to Quarantelli and Dynes in the 1950s. Furedi (2004) and Auf der Heide (2004) are very good recent introductions to disaster myths. Disasters are a very complex policy problem which span all levels and most functional areas of government. This was clearly demonstrated by *Hurricane Katrina* in 2005. The acceptance of the concept that a whole-of-government approach is an acknowledgement that disaster management is a cross cutting problem. Therefore emergency management is a function made up of many players rather than the concept of an emergency manager. The concept of the function transcends organisations and communities in both public and private sectors.

Figure 1. An overview of the evolution of emergency management theory and practice over the past 50 years in Australia

Two of the most important challenges for emergency management in Australia are the fields of risk and public policy. Risk is critical because it underpins how we think about disasters and the public policy frameworks for implementing activities within government. Similar challenges apply to people working in the private sector. Risk has rapidly accelerated as an area of interest over the past ten years across our society. This trend has been mapped in an analysis of mass media reporting (Lupton 1999). Public policy is receiving near universal interest world wide as the public sector tries to cope with a rapidly changing world (Kettl 2003). One of the new themes to emerge in public policy is a focus on community. Community, in all its diverse meanings, has now been included into public policy landscape at all levels of government across Australia. How these two drivers are reconciled in the context of emergency management is going to stimulate significant reflection on development and delivery of services.

Risk

The terms 'risk' and 'risk management' have now become central to the lexicon of just about every field. Works like Beck (1992) have made a case for the centrality of the concept of 'risk' in society. However just about every aspect of the risk concept is contested and the gap between perspectives is not closing. Lupton (1999), Coles et al (2000), and Slovic (1999) provide excellent overviews of how risk is conceptualised and map the divergence in perspectives. Furedi (2004) raises very important questions which are beyond the scope

of this paper but illustrate the breadth of contemporary debates about risk. "In regard to risk, uncertainty and powerlessness are not simply the outcome of an engagement with a specific risk. Such sentiments are systematically transmitted through popular culture" (Furedi 2004:135). The relationship between emotional vulnerability and the wider global threats to human existence is most clearly represented through the concept of being "at risk" (Ibid: 130). This thinking may provide significant insight into how risk might be managed.

A key theme which is often raised is that there should be increased community participation and responsibility in managing risk. If there is an expectation of significant changes in behaviour by individuals then risk assessment and/or risk management will have to move beyond the idea that risk is something that is independent of minds and cultures, waiting to be measured. Unless an approach is developed that moves beyond technical assessments, we are doomed to be met with either apathy or occasional aggression by the public when attempting to engage them in managing risk. The idea that risk can be objectively quantified is often expressed in equations such as risk = consequence x probability. Slovic (1999) makes the point that while danger is real there is no such thing as "real risk" or "objective risk". Technical risk assessments are based on theoretical models, whose structure is subjective and assumption laden. Subjectivity permeates low probability high consequence risk assessments because they rely on judgements at every step of the process.

At the core of this perspective is expected utility theory. It is generally assumed that people will follow the rules if they have sufficient information and time to dwell on the consequences of different paths (Krimsky and Golding 1992). It is essential to have a sound scientific perspective but it is not sufficient. There is a significant body of research that challenges the assumption that people desire the most accurate and precise information possible (Smithson 1989). The 'objectivist' approach to risk is too limited a perspective on which to resolve complex policy problems such as disasters (Beck 1995, Coles et al 2000). If a goal of public policy is active participation by the public in managing risk, then a richer construction of risk is needed.

Over the past 30 years enormous resources have been invested in studying risk in the context of the environment, in particular, hazardous industries. This work shows that the public has a broad concept of risk, qualitative and complex, that incorporates considerations such as uncertainty, dread, catastrophic potential, controllability, equity, risk to future generations and so forth (Solvic 1999). These considerations have to be acknowledged and strategies developed to integrate them into the risk management process. Effective risk communication will be predicated on developing processes that respect these dimensions. The evolution of thinking about risk is demonstrated by Fischhoff (1995) where he outlines the developmental stages in risk communication over the past 30 years. While this has been largely based on issues such as chemical contamination, it does have broad application to emergency management:

- "*All we have to do is get the numbers right*
- *All we have to do is tell them the numbers*
- *All we have to do is explain what we mean by the numbers*
- *All we have to do is show them that they've accepted similar risks in the past*
- *All we have to do is show them that it is a good deal for them*
- *All we have to do is treat them nice*
- *All we have to do is make them partners*
- *All of the above*" (Fischhoff 1995).

One of the most helpful definitions of risk comes from the *Australian Standard on Risk Management* AS/NZS4360 "The chance of something happening which will have an impact on objectives." Risk is conceptualised as having both positive and negative consequences in the context of objectives. This definition is powerful because it acknowledges peoples' or an organisation's aspirations and values as fundamental in conceptualising risk. To illustrate this point take three different groups; policy makers, the experts/scientists, and laypeople. All have different objectives and contexts which need to be identified and acknowledged in the risk management process (Garvin 2001).

Experts spend much of their time trying to focus on problems and to disaggregate issues particularly if there is a strong technical context. Policy makers and researchers run the risk of getting so deeply entrenched in their intellectual or service delivery silo that they have difficulty in appreciating the way people think and function. This is exacerbated in situations where there are high levels of uncertainty and complexity. One unfortunate outcome of these differences is the labelling and stereotyping of the other groups. Typically:

- scientists are perceived as out of touch and narrowly focused. They are promoting their research agenda and wanting more funds;
- the wider public is perceived as irrational consumers who don't understand the real risk, keep changing their minds and don't change their behaviour, even when clear evidence is presented to them; and
- policy/decision-makers are perceived as politically motivated and base decisions on expediency rather than evidence.

Experts and policy makers are practised at identifying, analysing, evaluating and treating risk appropriate to their context.

The public on the other hand, draw on a much broader range of information and cues to make decisions. Questions such as whose objectives are at risk? Are the costs and benefits equally distributed? Who is making the judgement about the risk? What is going to be done about it? Who is included in the decision making process? Risk treatments and their acceptability are inextricably tied up with judgements about the risk.

Community and public policy

There has been a big swing in Australian public policy to the idea of community over the past ten years. "In Australia all states and territories have joined the Commonwealth in embracing community as the foundation for policy making and implementation" (Adams and Hess 2001). Community is about groups of people, who create relations based on trust and mutuality, within the idea of shared responsibility for wellbeing. Spatial communities and communities of interest are the main forms of communities (Adams and Hess 2001).

One of the greatest challenges facing government today is how to engage citizens in the decision-making process in ways that suit both citizen and government (Bishop and Davis 2001). Edwards (2000) goes on to develop this point:

"*In particular, in circumstances where there is much conflict on an issue and/or many organised stakeholders, and in circumstances where there may be many alternative solutions and /or high uncertainty on outcomes, a participatory framework for policy development would seem essential for policy progress.*"

A number of drivers have been identified behind the current interest in participatory approaches. They include declining trust in public institutions, and the rise of social movements and public sector change (Bishop and Davis 2001). Like the debates about risk, community involvement in policy development and implementation is a contested issue and is largely a reflection of the values of the participants. "This new interest in participation does not create agreement about the nature of citizen involvement in policy processes" (Bishop and Davis 2001: 2).

If emergency management is to move beyond its traditional forms of service delivery to mitigation and contested fields, such as controlling the use of land, then many of the approaches emergency management has used over the years need to be transformed to the realities of a new policy environment. The way risk is understood by policy makers, experts and the layperson presents major challenges for managing the risks associated with major hazards interacting with communities and what they value. Controlling the use of land is an excellent example.

Uncertainty is a crucial dimension of many extreme risks. It is particularly important in understanding the differences in how risk is understood by experts and the lay public. From the perspective of any one particular householder, the chance of a house being impacted by a major hazard in a given time period is very small. If you take a researcher or policy-maker's perspective then the chance of a major hazard occurring in the area of interest dramatically increases. This gap between actors generates a fundamental mismatch about managing the risk. In dealing with low probability high consequence events, it is frequency of occurrence rather than the effects of exposure that is unclear. The implications of this are pointed out by Solvic (1986) "events that have not been previously experienced tend not to be perceived as worth taking account of." Compared to many health and environmental risks, the uncertainty associated with disasters centres on frequency or return period. "When will a destructive earthquake affect my house?" compared to a health issue "Will barbequed meat give me cancer?" In areas such as health and the environment uncertainty relates to the consequences of a risk rather than its occurrence.

In many cases there is little doubt that an area is potentially exposed to a high intensity bushfire or is located on a flood plain. The question is when will it be impacted? Because any one location may be very rarely affected thus allowing for great variation in the assessment of risk.

Case study: managing bushfire risk

The discussion so far can be illustrated by examining the issues involved in managing bushfire risk. If risk is defined as failure to meet objectives then what are the objectives of residents in high risk areas around the edges of cities in South Eastern Australia? This periurban fringe of small holdings occupies a vast area and has many different environments from heavy forest through to open grasslands. These areas are largely occupied by people who specifically selected that environment; that is they have made a lifestyle choice. They may be motivated to live in these areas by a whole raft of reasons; space, hobby farms, healthy and good environment for families, etc. Their commitment to this choice is demonstrated by having to make significant sacrifices that may include long travel times to work to avail themselves of this lifestyle.

One key characteristic of the people living in this environment compared to many traditional rural communities is that a significant proportion of this population has little experience of bushfire apart from what they see in the media. For the vast majority of people first hand experience of fire is still rare. From a policy and institutional perspective there is a large group of Australians who live in areas exposed to bushfire whose lifestyle is strongly values driven but who have virtually no first hand experience of bushfires.

In Victoria, fires with significant fatalities in the post World War II period have occurred in 1962 (32 dead), 1969 (23 dead), and 1983 (47 dead). Major fires with several fatalities occur about every ten years on average.

So from a policy perspective it is only people who are older than 30 to 40 years of age who have any chance of having clear memory of a severe fire event much less experiencing one. A similar situation exists in South Australia and Tasmania. The Eyre Peninsular fires of 2005 were remarkably like a series of fires in Victoria in the early 1960s. Forty years is a long time to rely on memory and experience. From a risk management perspective we have growing potential and declining experience.

Managing bushfire risk in the urban-rural interface also involves a large number of other policy problems and issues. Some are directly related to bushfire risk and others just add to the complexity of the process. These include pest and weed management, water quality and septic tanks, size of sub divisions and maintaining lifestyle, habitat maintenance, visual amenity, and flood plain management (floodplains can be very attractive places to live). There are significant debates about what constitutes a good environment and these are tied to people's objectives and why they made the

choice to move into that location. The acceptability of risk treatments is also enmeshed in many of these other issues and problems. The broad spectrum of lifestyle choices and values, coupled with people's understanding of risk, makes an extremely complex policy environment.

Any one individual is exposed to an enormous range of messages about risk, be it; health, food, the environment, safety, retirement and education to name a few. They are also exposed to many conflicting and contradictory messages. On one hand people get messages that bushland and trees are attractive and good for the environment. On the other they get messages about the dangers of lots of trees and scrubs around a house, "how could people live in such a dangerous environment?" So an individual thinking about how they are going to allocate their time and resources to manage their risks are faced with an often bewildering barrage of information which is processed and transferred into action around their values and objectives. People are continually bombarded about risk via marketing from retailers, lobby groups or government agencies seeking to alter awareness or behaviour.

Disasters are a social phenomena which span most functional areas of government as well as increasingly involving all levels from Commonwealth to local government. There has been a growing realisation of the challenges that cross cutting issues pose to Australian public policy. The tension between the vertical processes of government represented in the function based departments and the government's horizontal problem is growing (Kettl 2000). Edwards (2002) suggests that there is a growing recognition in Australia and countries such as the UK, Canada and New Zealand, that a problem exists with a silo mentality. This is particularly the case with complex problems such as disasters where the management of the risk spans many functions and levels of government.

How then might decisions in complex fields with high levels of uncertainty be made? What institutions exist in other sectors which may be an appropriate analogue for the uncertainty and complexity of managing bushfire risk? The legal system has used the juries over many years. Here a group of randomly selected individuals are called on to listen and reflect on evidence and make a judgement often under high levels of uncertainty. It is not suggested that juries in the legal sense be used but rather that groups or panels of laypeople may be able to contribute to resolving difficult questions; particularly when it comes to the appropriate use of land. The inappropriate use of land can provide very significant gains to developers, but the potential losses are transferred to future generations. The jury system

is a very old institution which, interestingly, is facing some significant difficulties in dealing with scientific uncertainty and complexity in an adversarial context (Slovic 1999). In the case of managing risk what processes might society or communities use to make decisions about uncertain and complex issues? For example what is an appropriate use of land? What is an appropriate management regime for that land? Given both these questions are highly contested, how then do we, at a body politic level, make decisions about these complex and highly uncertain situations that are robust and sustainable?

Conclusion

If the trend to manage risk through greater participation and the acceptance of individual responsibilities is to be successful, then many gaps in our understanding will have to be addressed. More public education and awareness is of limited value until we have a better appreciation of the way people think about risk and their-decision making processes. Program C in the Bushfire CRC is addressing a number of these challenges (see www.bushfirecrc.com).

Researchers and policy makers need to develop institutions and structures for engagement that reflect individual needs and how people make decisions if risk reduction is to be sustainable. This will require the integration of multidisciplinary perspectives across three broad areas to ensure that:

- social, economic and scientific inputs are credible;

- risk management is socially, economically and scientifically robust; and

- procedures, processes and outcomes have wide societal legitimacy.

At present there is a serious imbalance in the allocation of research resources across elements of these areas. One of the challenges will be to develop strategies to fill the gaps. Until we redress that imbalance and bring together these perspectives then we will fall well short of effectively managing major risks in Australia. The past 20 years has seen significant advances in thinking and practice in emergency management. A new generation of senior managers have moved into the field, new frameworks have been established, new stakeholders engaged, and the depth of understanding in the field has increased. The private sector is becoming increasingly engaged in managing non routine risk. However because of the challenges posed by the emergency management field it is important to remember that "good public policy and management is hard work, puzzling, complex and frequently frustrating, fads often become a simpler alternative to this reality" (Adams and Hess 2001).

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Author

Michael Tarrant is Assistant Director Education and Training at Emergency Management Australia. He entered the disaster management field in 1986 at the then Australian Counter Disaster College. His areas of interest are broadly based around disaster management including decision-making under uncertainty, public policy and risk management.

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Historical article
Human Responses to Natural Disasters

**First published in 1986, Wraith and Gordon explore the context and scientific study
of human responses to natural disaster**

To celebrate the 20th anniversary edition of *The Australian Journal of Emergency Management*, this is a reprint
from an early issue of the Journal. From June 1986 through to September 1988, Ruth Wraith and
Rob Gordon wrote a series of nine articles on human responses to natural disasters. These articles focused on the myths
of human response, short-term, medium and long-term responses to disaster, workers' and community responses, and
the principals for support and recovery for human services. The first of these articles featured in
Vol. 1 No. 2, June 1986, and is reproduced in its entirety below.

In a natural disaster situation the predominant experience is confusion. It occurs because disastrous events, by their very nature, disrupt the expected familiar pattern of life. The physical environment is usually drastically altered; sometimes it is almost unrecognizable. Death, injury or the threat of them, introduce new and powerful experiences of danger. Evacuation and the influx of combatant and relief workers, replace ordered and familiar community life with a disorientated, emotional mass of people.

In this, as in any situation of confusion, people fall back on what is familiar, to orient themselves. This means they may not immediately recognise what is new and unique to the disaster. They tend to focus on definite, tangible problems. The overwhelming physical needs are quite rightly the first to be addressed. Many physical requirements have to be met in a matter of hours. When concentrating on providing necessary services, it is difficult to understand of the many new personal and community responses that take place.

People's contact with each other falls into one of two categories:

1. People trying to direct or organize each other: relief workers function within an organizational structure and the victims are either organizing their own families, or being organized by the disaster executives;

2. People identifying and meeting emergency needs: these may be for material requirements such as food, shelter, medical treatment; or emotional needs like sympathy, support, reassurance, help with planning and decision making, or the need for information.

All these interactions have one thing in common; they are geared towards responding to immediate, obvious things and require a direct response to the situation.

But it is not obvious that behind these immediate needs for direct action, there are other aspects of the experience that do not claim attention, but become more obvious later when the intensity and excitement subside. As recovery proceeds, the real human response becomes evident and lack of understanding or recognition of personal needs in the initial stages of the recovery may become important problems.

Human responses, here, refers to the overall impact of the disaster on the personality, life and experience of people caught up in it. The disaster represents a major life experience for all those involved, including those who come into the situation as part of the recovery process. Major life experiences are those which have a powerful formative or shaping effect on the person's future development. We normally think of them in terms of loss of loved ones, marriage, birth of children, migration or other changes in living situations, and major illness. Everybody can look back on such events and see how both their personality and the course of their life has been influenced by them. It is characteristic that the effects are often only seen clearly much later in life.

The kind of influence such events have is not so much a matter of what happens, but of how people feel about it and what sense they make of it. Even very painful experiences can be enriching, provided the person receives the understanding, support and help he needs in coming to terms with it, and feeling he has gained something from it.

Understanding the human response means relating the disaster experience (whatever that may be), to the deeper responses which make a life experience of it and only show its effects in the future. This involves all workers having some understanding how in their particular role they can help people to integrate the experience, so that it will become as growth-promoting as possible. Tragedy cannot be denied when it occurs in life, but the task is to undertake the recovery process so that the effects of the tragedy are not repeated and multiplied as time passes. It is then necessary to add a dimension of recovery of human experience as part of the other aspects of material, economic and social recovery.

To place human recovery in its context, the following graph (Fig. 1.) portrays the impact of the disaster and the consequent physical
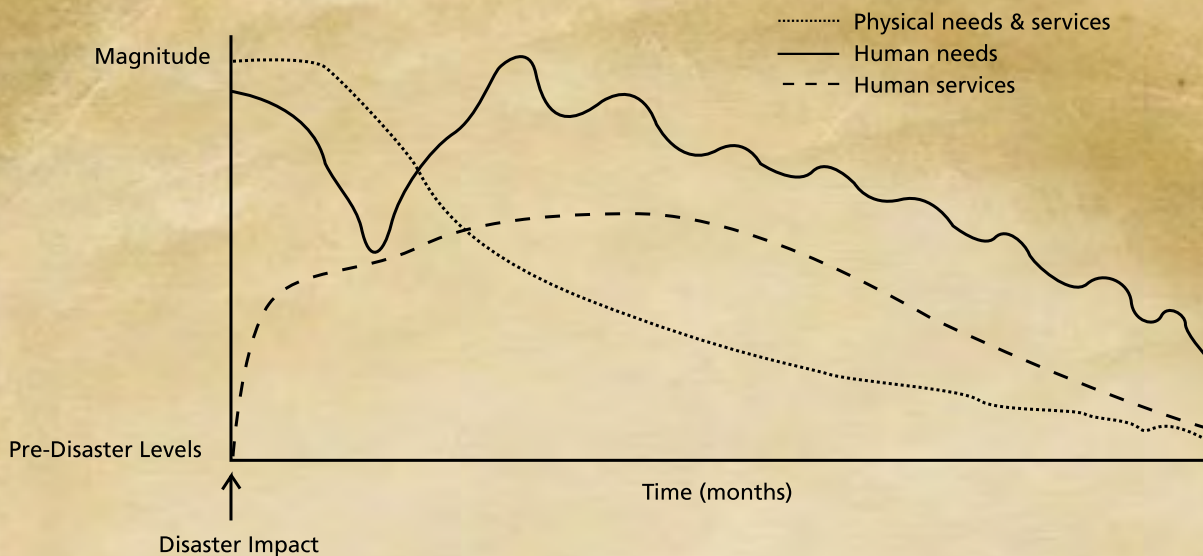
Figure 1. Contrasting physical and human needs following disaster

and human needs. As can be seen, the physical needs are met relatively quickly, with a minimal ongoing requirement after some months. The human needs, (including both individual and community responses), are at a peak on impact then rapidly drop during the short post-disaster activity phase, when personal/emotional issues are put aside. They rapidly reach a new peak in the disillusionment phase which follows and then take a fluctuating course. The provision of human services contrasts with the physical needs and usually lags well behind the actual need.

There have always been reports of human reactions to disasters. Following the first and second World Wars, attention was given to the psychological disturbances of combat, known as 'shell shock' and later 'combat fatigue'. Gradually, attention was paid to the experiences of people involved in other types of disasters. Many of these studies, up until the 1960s, were concerned to understand how people reacted to the dramatic lifethreatening, traumatic experiences of the disaster impact. In the last 20 years, however, attention is being increasingly directed at understanding other effects such as dislocation, loss of familiar surroundings and objects,

disruption of community life, etc. Besides dreams, fears and flashbacks, attention is being paid to some of the longer term effects such as physical and psychosomatic illness, depression, loss of identity, feelings of alienation and disorientation and others.

Vietnam veterans and their families are beginning to show the type of problems which can develop a decade or more after disaster experiences, and the study of families of the Nazi Holocaust, is providing an understanding of the way extreme disaster experiences can also affect children, and even grandchildren.

The current focus is on stress, in particular, post-traumatic stress. This refers to the stress arising after a person has been exposed to a traumatic experience (in other words an experience too massive or painful for him to deal with).

Stress in itself is an indicator that the person is facing circumstances which he is not well adapted to meet, hence he is forced to function in a manner which overloads his capacities. While most people can cope with this for a time, eventually everyone finds some part of their system no longer operates properly and they develop stress symptoms

of some sort. Stress then becomes distress. Support for people before they reach this stage is the most effective help personal services can offer to both workers and victims.

However, stress is a very genuine concept. It tends to focus on the individual as a whole, and does not always indicate the actual factors responsible for the stress. It is important, therefore, to combine stress research with a more detailed understanding of the particular processes following the disaster in the individual or family, in relation to their pre-disaster history.

Increasing research is being done, to gain a better understanding of the effects of disasters. A body of reliable knowledge is accumulating from many different sources, to serve as a basis for anticipating the effects on people, families and social systems; in recovering from them and avoiding the possible longer term repercussions. However, the understanding of these effects is at an early stage and the knowledge of how to avoid or assist them, is even less well developed. Unfortunately, it is only by accumulating more experiences of human suffering in disasters, that this knowledge can be gained.

Acute responses to emergencies: findings and observations of 20 years in the field

Rob Gordon describes how early intervention strategies need to focus on reducing arousal and restoring stability

Abstract

Experience and research highlight that people experience a range of responses to emergencies. These responses are built on the basic human mechanisms for survival and are not usually as intense as the stereotypes of 'panic' and 'helplessness'.

Heightened arousal – generated by threat – interferes with recovery if that arousal persists after the event.

This article describes research findings that emphasise constructive responses to emergencies; identifies a number of common responses in the immediate aftermath of an event and explores some simple strategies for reducing arousal and initiating recovery.

The Ash Wednesday bushfires of 1983 were a watershed in Australia's experience of emergencies. In the aftermath, the results of observations on the short, medium and long-term responses to emergencies were described in *Human responses to natural disasters (Part 3): general principals of human response to crisis situations* (Vol. 1 No. 4, December 1986, pp. 3–4).

Since then, large and small emergencies have shown the human impacts, and observations have drawn on experiences of early intervention, personal support activities and clinical treatment. Emergencies undermine assumptions of everyday reality, including that responsibility for threats is allocated to specialised subsystems of society and the community expects their protection (Kauffman 2002; Gordon 2004a). In an emergency, each member affected confronts for themselves the task of protecting self, loved ones, property, the environment or other people. The normal fabric of social life is rent and torn for a time, exposing tissues and structures normally buried beneath the routines and familiar patterns or life. The exposure to threat and horror provokes massive change in the brain, body and mind as the trauma is confronted. Recent developments in describing the physical and psychological arousal involved provide a clearer understanding of the effects and appropriate forms of support (van der Kolk 1996; Bremner 2002). Observable responses need to be translated into practical strategies to assist in recovery, understood as, *"the coordinated process of supporting affected communities in the reconstruction of the physical infrastructure and the restoration of the emotional, social, economic and physical well-being"* (Emergency Management Australia 2004).

Warning and evacuation

Warnings of emergency activate arousal and initiate complex social processes (Fitzpatrick and Mileti 1994), initially strengthening bonds between community members (Wenger, 1972), but they are ineffective without practice and familiarity. Initially, there is a tendency to minimise, deny, misinterpret or ignore danger; confirmation is sought from family, friends and neighbours regardless of their expertise rather than from authorities (Drabek 1986). Families and groups attempt to reunite and people in groups are more likely to heed warnings (Fitzpatrick and Mileti 1994). Older, isolated, inexperienced people and members of minority groups are less likely to heed them than younger people (Drabek, 1986, Fitzpatrick and Mileti 1994). Peer group interaction may reinforce disbelief, but people are most likely to respond to clear, specific, accurate, detailed information from a credible source with clear advice, disseminated by multiple media. Vague, generalised or non-specific warnings are likely to be ignored (Perry et al.1981).

Often only 50 per cent of the community evacuate when advised (Perry et al.1981). Many wait for immediate, tangible threat before doing so. Social bonds are preserved even at the expense of delaying departure and increasing risk. Distress is increased when group and family members are separated, and pets are treated as family members. People retain social roles, co-operate and support each other during evacuation; the incidence of traffic accidents in even very large-scale evacuations is only a fraction of normal (Drabek 1986). Warning and evacuation begin the emergency but also begin recovery if undertaken in a manner that supports those affected.

Impact

The impact dramatically disrupts established circumstances of life, violating tacit assumptions and expectations of daily existence. The constancy and stability of normal life result from unchanging features of experience being taken for granted. The sense of reality, security, familiarity and predictability which underpin psychological health and security, derive from such constancies. The central motivating phenomenon is the unusual (often unprecedented) state of physical and emotional arousal in the face of threat. Arousal refers to a comprehensive change in body chemistry, brain and psychological functioning that focuses resources on the immediate threat and activates instinctive patterns of behaviour, where possible, within existing social values and roles (Bremner 2002). This is colloquially referred to as 'adrenalin pumping' or 'being on a high.' A second source of arousal is the loss of familiar constancies and a changed and confusing environment in which actions must be improvised. Novelty (new or unfamiliar situations), uncertainty (cannot decide what should be done) and conflict (cannot choose between competing courses of action) are inherently stressful conditions and cause arousal as characteristics of the emergency and recovery environments (Pfister 1992). The effects of arousal are a framework to understand post emergency reactions and since persisting high arousal is an important risk factor for developing posttraumatic stress conditions (McFarlane and de Girolamo 1996) strategies to intercept arousal are an important feature of recovery.

The term 'panic' is often applied to states of high arousal because of the excited and highly focussed behaviour. However, absence of panic at impact is a consistent finding from the earliest research in emergencies even where people are trapped and die (Johnson et al. 1994; Mileti 1999; Cornwell et al. 2001; Drabek and McEntire 2002, Weisaeth and Tønnesen 2003). Panic loosely indicates high emotion and fear in media reports. However it means actions that are "unreasoning, excessively hasty through fear" or a state of "infectious fright, sudden alarm… leading to hasty measures" (Concise Oxford Dictionary, 1980). Panic leads to loss of rational decision-making and social values in favour of impulsive personal self protection.

Yet in emergencies, most people help each other and preserve communal values. Less than 1 per cent of people injured in accidents are found to have panicked (Malt 1994). Incident management policies that delay warnings, withhold information or minimise risks to avoid panic are likely to increase casualties (Dynes et. al. 1972; Paulsen 1981; Drabek 1986; Cornwell et. al. 2001). People make better decisions if given appropriate information and advice (Drabek 1986). Children are no more likely to panic than their parents (Haas et al 1976). When it does occur, panic is associated with loss of social bonds, immediate danger to self, likelihood of entrapment, diminishing opportunity to escape, helplessness, social isolation and dependence on oneself for survival (Drabek 1986).

To avoid the inaccuracies of the word panic, a category of 'highly aroused, emotionally motivated behaviour' is needed. Such a reaction may be misguided if based on lack of experience, inaccurate information or misunderstanding. However, it is not panic, even if it results in failure. It is intentional action, guided by understanding (even if inadequate). Panic indicates arousal is so high that it impedes rational thought and disrupts the person's attachment to social role structures and communal values. Highly aroused, emotionally motivated behaviour is rational and socially structured within the terms available to the person's restricted experience and opportunities for action. Consequently, highly aroused subjects are available to influence by appropriate forms of information and advice.

At impact, the sense of threat initiates arousal, but is inherently subjective. Arousal associated with traumatic experiences results from a rapid and often unconscious process of 'appraisal' of the danger, determined by what is specifically seen and heard (Lazarus 1999; Scherer at al. 2001).

A wide range of emotions and heightened states of arousal may be associated with traumatic experiences.

The threatening meaning of the situation triggers instinctive brain mechanisms that aid survival, but push the person beyond their previous normal functioning (Bremner 2002). Consequently, people often interpret the events in different ways; one may feel death is certain in a situation, another may only perceive a risk, a third may be confident of survival. People in the same place at the same time do not necessarily have similar experiences, yet, in post impact excitement, there is a tendency to assume everyone has been through something similar. As different patterns of response emerge, based on different appraisals, people are inclined to judge each other and give advice about what they have found helpful without understanding the differences.

High arousal is unfamiliar, and people often do not clearly remember what they thought in moments of greatest threat. The experience is soon replaced by intense, protracted, fatiguing through less dangerous recovery activity which puts the subjective moment of threat out of mind, although arousal is maintained by the unusually intense demands. It may then be difficult for people to understand the nature and origins of their reactions especially when they faced death (Gordon 2005).

During the emergency, emotional responses are suppressed in favour of intensely aroused survival-oriented action. In the face of fear and danger, most people act rationally, given their knowledge, experience and understanding; they co-operate, behave altruistically, helping where possible and preserve community values (Drabek 1986; Drabek and McEntire 2002). Those with official responsibilities usually fulfil them as soon as they can, often overriding personal fear to undertake their roles until the opportunity to check on their family arises (Drabek 1986). People alone at impact are often more severely

affected, while those in small groups are better off (Kaniasty and Norris 1999). Only in devastating events where the environment is destroyed and social systems break down (*Hiroshima*, *Hurricane Katrina*) are people dazed, wandering aimlessly dependent on outsiders for help (Mileti 1999). The problem is more likely to be their highly energised, but uninformed and unco-ordinated activity than helplessness.

Those affected have been through an unprecedented experience; they did whatever they could to survive and help those around them. High arousal narrows their perspective onto immediate survival issues at the expense of broader considerations. They are often insensitive to their own needs, since high arousal focuses energy in muscles and activates body and mind for action in the external world at the expense of awareness of self, body, emotions and mind. Substances are produced in the brain that damp down sensations of pain and energy depletion is masked by adrenalin. Biological survival behaviour may mislead people about their state and needs. This insensitivity assists survival in the short term enabling people to act well outside their usual capacity and persist beyond their usual endurance.

A woman described evacuating from a bushfire. After loading her children and precious documents into the car, she saw a generator on the garage floor and thought "that will come too" and without thinking lifted it into the car. When she was safe, she was unable to move it and had to wait a week until reunited with her husband so they could both lift it out.

As people emerge from danger, the first task is to reduce their arousal in order to re-establish contact with their physical, mental and emotional state so they can identify and meet their needs. If this is not done, arousal may persist, risking them to reorganise themselves around the heightened arousal. Failing to

achieve regulation to lower physical and emotional energy levels results in incorporating elements of high arousal into their ongoing state and leads to posttraumatic symptoms such as persistently re-experiencing aspects of the emergency, continuing alert and reactivity, high emotion manifesting as irritability and anger (often directed at authorities and helpers), sleeplessness and difficulties thinking, problem solving and concentrating. Initial interventions need to ensure no further arousal is activated in the form of uncertainty, threats, exposure to unnecessary suffering, discomfort or conflict. Immediate personal support and psychological first aid (Gordon, 1997; National Child Traumatic Stress Network and National Center for PTSD, 2005) are interventions that do not seek to work with the trauma but to stabilise the person and restore security and contact with loved ones.

Immediate aftermath

As soon as the danger passes, many victims become rescuers, bursting into action in a controlled, rational manner to provide or seek help (Mileti 1999). Up to 75 per cent of healthy survivors engage in search and rescue activities without waiting for official response and make their own way to medical or other resources, turning first to familiar providers (Drabek 1986). Convergence on the disaster site and milling around is common. However, information is often incorrect or inconsistent and they cannot contact loved ones, sustaining the sense of isolation (Kaniasty and Norris 1999). Pre-existing and emergent social networks are strengthened and barriers between groups and individuals tend to disappear (Leivesley 1977).

Some people exhibit *shock reactions*. They cannot get the experience out of their minds, continually seeing the sights and hearing the sounds of the emergency. They appear

dazed and disoriented for a time, and may not draw conclusions from obvious evidence that danger is past or the perpetrator is caught. Arousal remains locked onto memory images preserving them with intensity similar to the original experience. Each time the memories intrude, arousal goes up again, maintaining the problem. They are at risk of continuing posttraumatic symptoms if they are unable to master the experience. However, most people respond to care and support from helpers and loved ones and resolve their responses gradually over the following months. Some 10–20 per cent of those intensely exposed are likely to experience some form of diagnosable psychological impairment – posttraumatic stress disorder, depression, anxiety states or substance abuse, (McFarlane and Girolamo 1996; Galea et al. 2002); the proportion is likely to be higher (up to 45 per cent) in intense, traumatic events such as terrorist bombings (North et al. 1999). In some circumstances, it may be as high as 100 per cent (Smith and North 1993).

Another group become *distressed* and *anxious* about the future. They feel overwhelmed and cannot see how they will cope or solve their problems. Arousal has shifted from the memories related to the threat and converted into emotions, which are expressed. They need help to organise themselves for immediate requirements of life and benefit from personal support aimed at assisting them to manage practical problems of re-establishing their lives, providing information and facilitating access to assistance measures.

Another group of people go onto *automatic pilot*. They try to re-establish normal routines as soon as possible as though the emergency had not happened. Arousal is converted into maintaining familiar routines and may assist them to disengage from the experience

of threat. While familiar routines provide security, affected people often do not know how to conduct themselves after such an experience (Murakami 2000). They may mislead others about their needs and become isolated later when their adaptations break down. In natural disasters this may take the form of putting their effort into rebuilding instead of caring for themselves and their families. They may also avoid memories and numb themselves from the pain. These features are associated with longer term psychological problems (North and Westerhaus 2003). This behaviour often means they do not adequately communicate their experience to friends and family, who then misunderstand them.

When the survivor of a massacre went home, he and his wife 'did not know what to say to each other' so he ate his dinner and went out to the kindergarten committee meeting in his diary for that night. He continued on 'automatic pilot' for several days until he attended a debriefing meeting arranged at his work place.

Some *throw themselves into recovery activities*. They become too busy to think or feel the losses. People who suffered extensive loss in natural disasters are often too involved with others to take stock of their own needs for some time. They compare their losses with those who are harder hit and feel they have no right to feel their own pain. Their plight is likely to hit them later. Anecdotal experience from a variety of bushfires in Victoria, and the Canberra fires of 2003 suggest those who rebuild early often do not make such a successful adjustment as those who take their time.

There are those who are able to *accept the experience*. They recognise the event for what it is and accept their survival. They usually have prior experience, training or other knowledge that means the emergency has not damaged their assumptions about life; they do not need to find more

meaning than is necessary. Their arousal can be assimilated into a system of knowledge and values which stabilises it. Often they are appropriately upset or distressed, but settle steadily, accept their needs and do what is helpful by using what they have learned from other emergencies.

Finally, the people *away from the emergency* hear about loved ones involved and in danger, but do not know their fate for some time. They experience threat through danger to their loved ones; the information they receive evokes high arousal. This can be considered as 'informational trauma' as distinct from those who encounter the emergency through their own senses who suffer from 'sensory trauma'. For those not present, problems are often associated with two aspects of the experience. First, they may make adjustments and decisions in high arousal before they know their loved one's fate. Because this is done in an intense emotional state of mind, the results are often not recognised afterwards, but have long term effects since they are not reversed by the reunion.

A woman six months pregnant received a call from her husband staying in Lower Manhattan informing her of the World Trade Centre attack, and that he was going to evacuate. She pleaded with him to stay in his hotel. They lost contact for many hours. She turned on the television in Australia and sat rocking on her bed watching the collapsing towers, stroking her pregnant stomach saying to the unborn baby "we might have to do this alone baby, we might have to do this alone." She felt detached from her husband until she communicated her experience to him after becoming distressed when he watched the third anniversary ceremonies on television.

The second aspect of informational trauma that may lead to problems is not knowing the detail of their loved one's experiences and having to imagine what they must have gone through to understand them.

If their loved one died, they are often obsessively concerned to find out how they died and if they suffered. Even if death is not involved, they can be extensively affected with different needs to those present at the scene. The Bali bombing affected the survivors with sensory trauma whereas the families in Australia had informational trauma when they heard about it and often did not know the fate of the loved one for days. For each directly involved person there may be several others with informational trauma. They commonly push aside their difficulties in comparison with their loved one's tangible sufferings, yet if their experience is not validated and their needs are not met, misunderstandings are likely, undermining relationships important for recovery.

Support and recovery

One of the most important factors determining the extent of psychosocial impact is the duration of the stress state. The presence of altruistic and concerned helpers (preferably trained) prepared to comfort and instil hope in the immediate aftermath relieves the sense of isolation, reduces the impact and initiates recovery. However, those affected and their supporters need to be informed at the earliest opportunity about differences in appraisals and hence reactions and also about the validity of the impact on those not present, who may be suffering from informational trauma. Outreach by community-based services provides trusted support people who can maintain contact with those affected. It is an effective form of assistance (North and Westerhaus 2003). Strategies to reduce arousal include:

- ensuring victims feel safe;
- enabling them to re-attach to meaningful others and their community;
- assisting them to stabilise and re-establish awareness of needs and self management;
- providing comfort, care, information and advice about the meaning of their reactions; and
- providing advice about how to ensure recovery.

Representatives of the recovery system need to act at all times to preserve affected people's dignity and ability to make their own decisions. This makes the support system acceptable and meaningful and encourages them to make contact with it at a later stage should they need it. Some people suffer posttraumatic responses for between three to ten years following traumatic emergencies (North and Westerhaus 2003) and many do not seek help until several years have past (North et. al. 1999). Anything that initiates a constructive relationship with a facilitating social infrastructure to aid recovery may mitigate these problems (Gordon 2004b). Whatever happens to people in a persisting state of high arousal has a symbolic significance and can either help reduce or maintain their state of agitation.

The management of community processes and social tensions is an important area of intervention,

The presence of comforting helpers relieves the sense of isolation and initiates recovery.

since identity and support will bring down arousal and initiate recovery, whereas tension and conflict will maintain it. Techniques of communication and group work can assist in drawing on the constructive social activities to intercept and mitigate some of the less constructive processes (Gordon 2004a).

However, the priority is to recognise the variability of acute responses. Responses are related to the specific circumstances of the person's involvement in the emergency and the knowledge, skills and experience that they bring to the situation. High arousal is inevitable in the face of threat, but how it is managed by individuals and communities is as much a function of what happens after the event as it is of the event itself. Therefore important early intervention strategies need to focus on reducing arousal and restoring stability. Support, comfort and psychological first aid intercept continuing disturbances and emotional distress and aid in restoration of self management. Exploration of emotions or counselling, using techniques appropriate for consolidated problems are likely to further confuse those affected unless conducted by clinicians experienced in emergency mental health. However, recognition of the need for stability, predictability, well organised systems, information, social support and trained personal support workers is the psychosocial equivalent of first aid and hygienic care for physical injury which are so natural in our culture. Yet we have only just begun to consider how to provide a similar continuity of care for psychological injury.

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Author

Rob Gordon is a clinical psychologist who has worked in disasters since the 1983 Ash Wednesday bushfires. He is been a consultant to the Victorian Emergency Management Plan and has been involved in most major Victorian emergencies since then. He conducts a private practice in Box Hill, Victoria where he treats adults and children affected by trauma and disaster as part of a general psychotherapy practice.

Author's contact details

Rob Gordon, PhD, MAPS,
Clinical Psychologist,
921 Station Street,
Box Hill North. VIC
3129. Australia
E-mail: robgord@bigpond.net.au

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National Emergency Management Strategy for Remote Indigenous Communities

Moya Newman reports on the Remote Indigenous Communities Advisory Committee

The Remote Indigenous Communities Advisory Committee (RICAC) was established as a working Group of the Australian Emergency Management Committee (AEMC) in 2003, by Emergency Management Australia (EMA). It was established to address, at a national level, emergency management arrangements within remote Indigenous communities. The committee is supported by EMA and made up of two representatives from Western Australia, New South Wales, Queensland, South Australia and the Northern Territory. The Committee is chaired by the Director General, Queensland Department of Emergency Services.

A key initiative for the RICAC in 2005 was to develop the *National Emergency Management Strategy for Remote Indigenous Communities*. It was agreed that for the strategy to be successful there was a need for extensive consultation throughout Australia with Indigenous people, as well as government and community-based service providers. The Committee employed Isabella Adams, an Indigenous Consultant from Vision Networks, assisted by Mara West, from Western Australia to undertake the consultation process.

The Attorney-General's Department allocated $120 000 from the *Working Together to Manage Emergencies Program*. These funds supported the focus group meetings held in each of the States and Territories throughout Australia (two in WA, SA, NT, NSW and QLD). The States' emergency service agencies also contributed by conducting extra meetings at their own cost to ensure a comprehensive consultation process was undertaken.

Doolan and Walter Eattes, Indigenous elders, welcome participants to 'country'.

The development of the *National Emergency Management Strategy for Remote Indigenous Communities* was endorsed by the Augmented Australasian Police Ministers' Council in March 2005. This followed increased recognition by government since 2000 that the issues relating to emergency management in remote Indigenous communities need to be addressed.

Phillip Bartlett, Gordon Hall, Tony Wally and Tim Muirhead discuss aspects of the National Emergency Management Strategy for Remote Indigenous Communities.

Collaborating on ideas for the national strategy.

The objectives of the strategy are to:

- develop the knowledge and skills of Indigenous people and organisations for emergency management in remote communities;

- improve the level and appropriateness of services relating to emergency management provided by relevant agencies in remote Indigenous communities;

- build the capacity of remote Indigenous communities to improve sustainable community safety;

- increase government commitment and accountability to address issues impacting on effective emergency management in remote Indigenous communities; and

- promote effective partnership between emergency management agencies, Indigenous organisations, government and other agencies to improve community safety outcomes for remote Indigenous communities.

After the consultation process the consultants met with the RICAC in Brisbane during September 2005 to establish the outcome of the national focus group meetings throughout Australia. The information based on the consultation process was reported to the RICAC by the consultant and analysed to identify the common threads arising for progression to the next phase of the strategy.

Some of the key themes relating to emergency management in remote Indigenous communities were highlighted and incorporated into the strategy. They were:

- commitment and accountability;

- communication;

- consultation;

- co-ordination;

- decision-making;

- diversity;

- education;

- employment;

- funding;

- governance;

- provision of services;

- partnerships and agreements; and

- training.

It has been recognised by the committee that all of these key points be considered and implemented when developing the strategy.

The consultant compiled a working draft for the writing team who met in Melbourne during November to commence writing the strategy. The members of the writing team were Isabella Adams, Consultant Vision Networks, Martin Plumb, Northern Territory, Ken Wyatt, NSW, Christine Johnson, Queensland and Moya Newman, Western Australia. The writing team worked tirelessly to develop and write a unique strategy, reflective of the consultation process and emphasising the common threads. The writing team agreed the strategy needed to be written in a way that was user-friendly and a comprehensive guide.

A meeting was held on 8 December 2005, in Brisbane to finalise and endorse the strategy prior to forwarding it on to all relevant stakeholders. At the meeting the strategy was workshopped with a few minor adjustments to be addressed and once completed the committee will meet again to decide when and where the launch will take place.

The RICAC members were extremely happy with the outcome of the strategy which has been developed based on the outcome of the focus group meetings.

Other AJEM articles by Moya Newman

Integration of emergency risk management into West Australian indigenous communities, Vol. 19 No. 1, March 2004, pp. 10-15

A new policing dynamic in emergency management

Mick Keelty provides an insight into the AFP's national and international roles in emergency management

An emergency incident 27 years ago led to the formation of the Australian Federal Police (AFP) and an ironic twist in the history of Australia's emergency management.

When a bomb exploded at the Commonwealth Heads of Government Regional Meeting at Sydney's Hilton Hotel in 1978, it killed three people, injured scores more, and exposed weaknesses in the co-ordination of Australia's disaster response system.

As part of the Australian Government's response to the incident, the AFP was founded in the following year as the national policing agency. However, it has only been relatively recently that the organisation's capacity in disaster consequence management has been exercised beyond the local level.

Responsibility for responding to emergencies in Australia has traditionally been with State and Territory authorities, such as policing agencies, fire, ambulance and other emergency services providers. The AFP's community policing arm, ACT Policing, undertakes this operational role in protecting the Australian Capital Territory, and has been tested at times through incidents such as the 2003 Canberra bushfires and the 'white powder' incidents of 2005.

However, the mainstream AFP has been traditionally focused on taking the fight against crime offshore, in areas such as illicit drug trafficking, fraud and people smuggling.

After the September 11 terrorist attacks, and with the onset of the so-called international 'security environment', emergency situations took on challenging new dimensions for authorities. As a result, new opportunities emerged for the mainstream AFP to apply its specialist skills and experience in the area of emergency management – both nationally and abroad, and at operational and strategic levels.

Since that time, AFP expertise in disciplines such as international policing, forensics, post-blast analysis and disaster victim identification have increasingly been sought by international authorities in response to disasters – both natural and man-made. These have included incidents such as the Bali bombings of both 2002 and 2005, the J W Marriott Hotel bombing of 2003, the Australian Embassy bombing in Jakarta in 2004, numerous bombings in southern Philippines and Thailand, and significantly, the Indian Ocean tsunami on Boxing Day 2004.

The AFP has provided this expertise in the form of Offshore Rapid Response Teams, specially convened to respond to individual disaster situations. These teams, often supported by State and Territory police, enable personnel with the appropriate mix of skills to be marshalled and deployed soon after tragedy strikes.

This experience overseas and the AFP's capacity as the national policing agency are now being used to enhance emergency response strategies here at home. A key development in this regard has been the shift toward proactive initiatives, which aim to prevent emergencies as well as respond to them.

State and Territory police still retain overall responsibility for control of emergency situations, and the AFP has a role in co-ordinating policing responses to promote a more uniform national approach. This is occurring particularly in areas such as counter-terrorism and aviation security, through initiatives such as

Offshore Rapid Response Teams enable personnel with the appropriate mix of skills to be mashalled and deployed soon after tragedy strikes.

the Joint Counter Terrorism Teams, Regional Rapid Deployment Teams and the recent announcement of AFP-appointed Airport Security Commanders, who will control security at major Australian airports.

So how is this new policing dynamic boosting emergency response capability at a practical level? There are many illustrations of this, but some of the strongest impacts to date have become apparent during offshore disaster responses.

International

The first (and arguably biggest demonstration) came with the Bali nightclub bombings of October 2002. After a series of terrorist bombs exploded in the popular Kuta nightclub district, killing more than 200 people (88 of them Australians) the Indonesian National Police (INP) requested assistance from the AFP for the emergency response.

Experts in fields such as forensics, post-blast analysis, intelligence, investigations and disaster victim identification were quickly mobilised and deployed to Indonesia. At the height of the investigation more than 120 Australian police, including State and Territory representatives, were on the ground in Bali working alongside the INP. These teams were well supported in Australia by personnel based at the Incident Coordination Centre at AFP headquarters in Canberra, as well as by teams at Major Incident Rooms in Australian capital cities, who assisted with collecting and co-ordinating the flow of information.

While primary responsibility for managing the disaster lay with the INP, Australian police closely supported their Indonesian counterparts and their contribution was regarded as integral to some early breakthroughs and the ultimate success of the investigation. So far 36 people have been convicted in relation to the 2002 bombings.

The operation – codenamed *Operation Alliance* – became the largest in the AFP's history, and is now widely regarded as having set a new benchmark in regional law enforcement co-operation. Since then, the AFP has received many more international requests for assistance in the wake of disasters – particularly terrorist bombings – in South East Asia and in countries such as Spain, Saudi Arabia and Turkey.

In the aftermath of the London bombings in July 2005, the AFP also led an Australian team to observe the investigation and identify areas that could help with improving responses to these and other types of emergencies. From this we learnt much about how to preserve crime scenes while quickly restoring order to affected areas, as well as special arrangements between law enforcement and business to promote information exchange, intelligence and stronger security.

But terrorist attacks are only one example where the AFP's capacity for responding to catastrophic emergencies has been put to the test in recent years.

The Indian Ocean tsunami that struck on Boxing Day 2004 provided new opportunities for the organisation to work beyond the crime environment in a more humanitarian-style capacity – an area traditionally outside the law enforcement domain. Soon after the tsunami swept over the resort island of Phuket, the Thai Government requested AFP assistance to co-ordinate the international disaster victim identification process.

During the first Bali bombings in 2002, Australian police used a special five-phase victim identification process, involving internationally-agreed standards for recovery, retrieval and reconciliation procedures. These protocols were applied at the International DVI Coordination Centre in Phuket by law enforcement representatives

from more than 30 countries. By November 2005 the Centre had successfully identified more than 2600 bodies. An AFP team still remains in Thailand today as part of that operation, with less than 1000 bodies still to be processed.

In addition, much of the AFP's work offshore is now focused on the prevention of international humanitarian disasters, through peacekeeping and regional assistance. Today, we have hundreds of members deployed to locations such as the Solomon Islands, East Timor and Sudan. They are working to restore law and order and promote stability in these countries, which are essential to preventing the outbreak of emergencies in the future.

Overseas experiences such as these are continually strengthening policing capabilities, with the knowledge being applied to inform the development of strategies to prevent emergencies, particularly terrorist attacks, here in Australia.

National

Unfortunately there has been growing evidence to suggest the threat of terrorism in Australia is very real. Extensive resources worth more than $6 billion are being dedicated to improving strategies for prevention and response in this area. These are overseen by the National Counter Terrorism Committee, of which the AFP is a member alongside senior State and Territory policing colleagues.

The Committee is promoting unprecedented levels of emergency management co-operation around the country, with a large number of agencies involved. These include intelligence, emergency services, defence, protective security agencies and various other Commonwealth government departments. Not only is the Committee overseeing Australia's preparedness for dealing with all aspects of emergency responses, ranging from recovery processes to formal investigations

Experts in fields such as forensics, post-blast analysis and disaster victim identification can be deployed for international emergency response.

and post-disaster analysis; but it is also focused on related areas such as border control, transport security, critical infrastructure and information management protection. These form an integral part of national emergency prevention strategies.

A key initiative in this area is the Joint Counter Terrorism Teams. Today, there are 11 Joint Counter Terrorism Teams located around Australia, consisting of federal agents and their State and Territory counterparts to ensure broad coverage across all jurisdictions. Their role is to investigate suspect terrorist activity and to arrest and prosecute those found to be involved in supporting terrorist activities both within Australia and overseas. They work closely with our intelligence and law enforcement partners to mitigate the risk of terrorism and play a lead role in national counter-terrorism emergency exercises, including the recent *Mercury 05* operation, which tested emergency management responses in the event of co-ordinated terrorist attacks around the country.

The formation of these joint teams reflects the changing nature of crime in the security environment. In the past, emergencies tended to be relatively contained in nature. But incidents over recent years – such as in New York and Bali – show the stakes have become much higher. Advances in technology and knowledge mean the capacity now exists within the general community to commit offences that easily cause mass casualties. This new proactive approach to emergency management involves capitalising on the potential from collective responses and making large investments in initiatives that work to prevent such emergencies.

On this front, the use of chemical, biological, radiological, and nuclear (CBRN) explosives pose a real and growing threat. These non-conventional forms of warfare are now considered within the realms of terrorist capability and the solution to detection and defence also lies across a number of agencies.

For the AFP's part, as well as providing protective services capability at major national scientific institutions, we are also establishing a CBRN Data Centre to help overcome current gaps and vulnerabilities in Australia. Based on a combination of Australian Intelligence Community and law enforcement data, the CBRN Data Centre will provide technical CBRN intelligence, information and advice to all Australian governments. Once a domestic capability is established, the CBRN Centre will contribute to wider government capacity building and information sharing, and provide assistance to regional countries in developing their domestic CBRN management capability.

Conclusion

If there has been a silver lining to the dark cloud of terrorism over recent years, it has been the unprecedented levels of co-operation that have flowed in the aftermath of critical incidents around the world. These experiences have enabled us to identify and address weaknesses in our own prevention and response systems, particularly in regard to critical incident command, communication, division of responsibilities and jurisdictional obstacles.

One of the key findings from the 9/11 Report in the wake of the attacks on the United States, was a "failure of imagination" by authorities in the lead-up to the attacks. Much has been learnt internationally since that time and Australia's strategic approach to emergency management is ensuring we are better placed than ever before to anticipate and thwart potential security-related emergencies. But emergency management remains an evolving phenomenon, encouraging us to continually search for new ways of strengthening our responses and make better use of existing resources in line with the changing environment.

The AFP is pleased to have become a more active partner in this process by using its skills and experience in the national and international arenas, to address the burgeoning array of emergency management challenges that the 21st Century presents.

Author

AFP Commissioner Mick Keelty APM has more than 30 years experience as a police officer in Australia and overseas and was appointed to the role of AFP Commissioner in April 2001. He also Chairs the Board of the Australian Crime Commission, and holds a number of executive positions on national and international law enforcement bodies.

American exceptionalism or universal lesson? The implications of *Hurricane Katrina* for Australia

John Handmer examines the extent to which the problems of Hurricane Katrina *could occur elsewhere*

Abstract

Few events have been as well planned for as *Hurricane Katrina* in New Orleans. Yet the emergency management system appears to have failed in most respects. Media reports on many aspects of the crisis challenge existing orthodoxy in research and practice. A few months after *Katrina*, interest has waned and press and agency apologies for exaggerating aspects of the extent of the crisis are emerging, although some evidence suggests that aspects were even worse then reported. There is also a developing lower profile crisis as local economies shrink, threatening to halt recovery.

This paper examines some important questions concerning the extent to which the problems of New Orleans could occur elsewhere. To the extent that New Orleans is a special case, the implications should be limited. But where similar circumstances exist now or in the future, could we expect to find similar problems? The paper also discusses some general issues to do with the processes of emergency management.

Handmer states that although aspects of the New Orleans situation may be found in disasters everywhere, a similar situation seems unlikely to occur in Australia. This statement is qualified however, by questioning what exactly took place, uncertainty about Australian emergency management capacity for a huge event, and trends in Australia that may make us more vulnerable in future.

The New Orleans crisis

It is too easy to be critical of emergency managers. For them in a major event, the stakes are often very high with lives and economies at immediate risk, resources inadequate and political and media scrutiny intense, interfering and unforgiving. Information will be inadequate, modelling ambiguous and rumours rife. Emergency management is often tested in public with immediate if not real-time feedback, with a constituency dedicated to locating and punishing the blameworthy. Emergency workers may save thousands of lives in the face of an extreme natural phenomenon and vulnerable population, but enquiries and lawsuits for the few unfortunate victims may drag on for years, consuming resources in a fruitless search for zero risk.

However, the crisis in New Orleans, and the apparent multiple failures of emergency management are astonishing. The global media focus has, naturally enough, been on the immediate post-impact phase with the chaos and inadequacies of the emergency response providing plenty of media fodder. There was a determined search for the guilty and suggestions by both local and foreign media, that this was a unique event. But was it really such a surprise?

A month or so later media interest has waned and there have now even been press and agency apologies for exaggerating aspects of the extent of the crisis (eg Rosenblatt and Rainey, 2005; Smith–Spark, 2005). Most attention has turned to the ongoing political credibility crisis for the US President and FEMA (the Federal Emergency Management Agency), and its parent agency, the Department of Homeland Security – a leviathan of 170,000 employees speaking unconvincingly about shortages of resources and expertise. No emergency manager, politician, or anyone else, has emerged as a public leader or hero.

The crisis challenges more than the careers of those senior US emergency managers with responsibility for response. It raises questions about emergency management, disaster myths and the research supporting much contemporary practice. Through

these issues runs the broader question of to what extent New Orleans – with a contiguous urban area similar in population to Brisbane or Perth – is an exceptional event, or is it a warning of what emergency managers have to look forward to? Could it happen in Australia?

The apparent impact – no surprise

"The Federal Emergency Management Agency lists a hurricane strike on New Orleans as one of the most dire threats to the nation, up there with a large earthquake in California or a terrorist attack in New York City." (Bourne, 2004).

With days of warning *Hurricane Katrina* headed towards New Orleans creating a storm surge which raised the level of Lake Pontchartrain – itself attached to the Carribbean – breaching and/or overtopping levees protecting the city. The majority of those at risk evacuated in some chaos as a normally short drive took most of a day. However, over 100 000 did not evacuate. Many of these people did not have the means to do so, including many tourists. Others decided to stay.

In New Orleans you walk uphill to the Mississippi River held in place by dykes that would serve well on the Dutch coast. The city is well below sea level with the Mississippi on one side and the Caribbean via Lake Pontchartrain on the other. The history of settlement there is that of extending into increasingly hazardous areas. On two visits to the city local people made it plain to me that the threat was from the sea rather than the river.

Neither the hurricane striking the city, nor the inability of over 100 000 people to evacuate was a surprise. The whole event down to many of the details was thoroughly well predicted and rehearsed. This is a reasonable conclusion whether we consider the popular culture world of *National Geographic*, the emergency management profession, peer reviewed science, numerous articles and analyses in mass media, or a near miss from *Hurricane Ivan* in 2004 (Laska, 2004). It was not knowledge that was restricted to academics as suggested by a recent report in *Nature* (Reichhardt et al 2005). In addition, the people of the city were well aware of the threat from living below sea and river level. The fact that a scenario paralleling the actual event was used as a FEMA training exercise seems almost satirical – *Hurricane Pam* a category 3 storm. A report in *Nature* (Reichhardt et al 2005:175) soon after the event observes that "The similarities between *Katrina* and the *Pam* simulation are eerie."

However, while the event was expected, the outcomes were surprising. The predictions, scenarios and rehearsals did predict more than the 1200 or so deaths, but did not deal with the following paralysis of local and state government, collapse of essential services (which

After a natural phenomenon the situation for disaster victims improves steadily, however this is not yet the case for Southern Louisiana.

appears to have continued to worsen as the entities run into financial problems), apparent breakdown of law and order, abandonment of many of the more vulnerable people, and the seeming inability of the federal government to get to grips with the disaster. There was also the large number of children separated from parents – over 1000 cases, and so on. It was assumed, and in many cases asserted, that planning and preparations were thorough and would be effective.

On Sunday 28 August, as the hurricane approached, President Bush was among those urging people to leave, "We cannot stress enough the dangers this hurricane poses…" (BBC 2005 (III)). He urged the State Governor to order a mandatory evacuation. Michael Brown, the director of FEMA was more relaxed urging residents to take "precautions immediately". It was well known from the various scenarios that a car based evacuation would leave over 100 000 stranded. Yet the provisions made were the focus of much negative media attention and seemed to underscore the overall failure in response management. For the first time since the 1960s the US mainstream media right across the political spectrum used race and class to critique the US system – the "outrage factor" was high.

The stranded were eventually evacuated to points scattered throughout the conterminous USA (Carroll, 2005) – in the view of one US disaster specialist, to reduce the chance of civil unrest or organised political pressure from the displaced.

An emerging crisis in recovery – local economic collapse

"About 81,000 of Louisiana's 197,000 businesses have either shut down or scaled back operations because of Hurricane Katrina" (LA Times, 2005).

Over 100 000 people failed to evacuate before Katrina. Many of these people did not have the means to self evacuate.

Typically, after the impact of a natural phenomenon the situation for disaster victims improves steadily – at least in wealthy countries. However, as of the end of November 2005, this is not yet the case in southern Louisiana. Another serious set of crises is emerging as the area struggles to recover. This is the apparent partial collapse of local economies. The proximate cause of this partial collapse is *Hurricane Katrina* of course, but the sources of finance for the city and other areas affected by the hurricane have dried up leaving the local authorities with little option but to lay off staff (including those in the emergency services), in turn exacerbating the local economic downturn. The area was very poor before the disaster with massive chronic unemployment. This has serious implications for disaster recovery and highlights an issue that may be fundamental to recovery from most disasters – local economic vitality. Analysis is complicated as many of the Cajuns in the bayous supplement their cash incomes with subsistence fishing, and in New Orleans itself there is a very substantial criminal economy around drug addiction and trading.

Disasters have considerable economic impacts often halting local enterprises for a period. But this is generally made up by other economic activity especially that connected with disaster recovery and flows of aid. It may also be made up by increased activity later on.

The US national economy has not been severely affected by the hurricanes although unemployment grew for the first time in two years. The big issue for the national picture is the potential impact on the US budget deficit now running at about US$333 billion well down from last year's record. The hurricane could cost up to $200 billion. Analysts argue that this cannot be simply absorbed given the size of the current deficit (BBC, 2005, (i)).

The initial signs from New Orleans however are worrying. Some 80 000 worked in the local tourist industry and another 14 000 in floating casinos – these are scarcely functioning at all. The city's port is at 25 per cent capacity potentially affecting a large proportion of the 107 000 whose work is linked to port activities. The city itself has had to lay off thousands (BBC, 2005 (iii)). The Louisiana Labor Department indicated that New Orleans lost 237 200 jobs in September. A local economist argues that the current unemployment level is artificially low as much has been exported to other states (*The Times Picayune*, 2005 (i)). The power company is bankrupt, all three local universities are effectively closed and plan to downsize on re-opening, and only one in three of the city's inhabitants is back in town.

All this in a very poor area – and poor local authorities in the US have ongoing expenses unlike many of their counterparts in other rich countries. They are struggling to meet ongoing commitments to health care funds for example.

Table 1. Employment and *Hurricane Katrina*

Unemployment relief (*The Times Picayune, 2005* (i))

2004	Sept 12,710;	Oct 11 946
2005		Oct 271 846 (plus another 24 519 attributed to Rita)

President Bush and others have suggested that there may be an opportunity to redevelop the south, eliminating chronic poverty and bringing the economic dynamism that the city, if not the region, had a century ago when New Orleans was America's second port. As an economic powerhouse it was the largest and most prosperous city in the Confederacy (albeit partly as a

result of the slave trade). A plan to turn the entire area into a tax free enterprise zone with a range of incentives for small and local businesses (while handing the contacts for infrastructure repair to the multi-national

Halibuton) has been proposed (LAT 25/10/05:8) – "A chance to wipe out poverty and the remnants of racial injustice" (George W. Bush, BBC,(ii)). There are no signs of this yet. Instead the crisis is deepening.

Table 2. Disaster myths, reality and New Orleans – preliminary observations

"MYTHS" about what happens in disaster, drawing on the research literature.	"REALITY" As established by research & experience.	NEW ORLEANS What seemed to happen.
Widespread looting is expected.	*There is no increase in criminal activity, and little or no looting.*	We all saw "looting", and there were numerous media reports and reports by local officials, people in the streets, blogs, etc. Evidence of looting by officials. Some reports of looting & criminal behaviour have been withdrawn. Looting has been re-defined by some commentators to exclude much of the behaviour: so the hungry were feeding themselves, the drug addicted raiding hospitals for their needs, and so on. Criminal drug related gangs were very active.
Helplessness and abandonment of the weak. Disasters strike randomly.	*People help those in need. Differential impacts on the vulnerable.*	Over 100 000 did not have the means to evacuate, and became dependent on others to keep them alive. This help was very slow to come and seriously inadequate. Some in nursing homes and private hospitals were abandoned and died. (St Rita's Nursing Home – pending criminal charges)
Officials experience conflict between their official duties and family demands. Some will hide from the crisis.	*Officials will do their job and not abandon their posts because of "role conflict".*	Large scale abandonment of official posts and duties. 50 officers were fired for going AWOL, 228 are still under investigation (Perlstein, 2005). Police were also caught looting department stores. The situation seemed well beyond the capabilities of CEOs at all levels of government. First priority went to security rather than attending to those desperate for food and water, and to those dying for want of medical attention. There were no public heroes.
Large scale demand for official temporary accommodation.	*Little need for official emergency accommodation.*	About 200 000 people were being housed through official channels a month and a half after the disaster. About 120 000 needed accommodation on the day. The mass evacuation centres were overwhelmed. (There is a dispute over the actual figure with much higher numbers occasionally quoted.)
People take advantage of the vulnerable.	*Much behaviour is altruistic.*	There was no shortage of price gouging and people being evicted from private rentals creating homelessness (Hartman, 2005) adding to the burden for public authorities. The town of Gretna, across the Mississippi from New Orleans, barricaded itself and at gunpoint prevented refugees from entering the town (*Khaleej Times, 2005*).
Disaster plans are the solution.	*The process of planning is key, and should engender flexibility and adaptability.*	Plans, including detailed planning by FEMA, failed totally. Even the previous year's mock 'Hurricane Pam' did little to prepare officials and residents. There was no evidence of adaptability other than on a small scale by agencies like the Coastguard.
Universal need for command and control.	*Co-ordination & co-operation (always many groups). Order does not come from guns.*	No incident command centre established. Lack of leadership from federal and state leaders culminating in an un-coordinated response and initial recovery. This has been blamed on recent changes in roles, responsibilities and resource allocation for disaster management operations under FEMA and Homeland security.
Outside rescue teams save many lives.	*People next door do the saving as outside help may take too long.*	There are reports of people assisting each other, but the general picture is of an absence of rescue and help by neighbours.

The challenge to existing practice and research

Given the exhaustive planning for an event like *Hurricane Katrina*, it is reasonable to ask whether the research results underpinning the planning retain their currency. An associated question concerns the validity of contemporary emergency management practice. If New Orleans is an exception, then why? To the extent that it represents contemporary reality to what extent do its lessons apply in Australia? This issue is tied in with the broader question of the applicability of overseas research to Australia.

It is normal for the mass media and some other groups and individuals to portray disasters in ways that research, primarily from the US but also from Europe and Australia, has long shown to be misleading (eg. Quarantelli and Dynes, 1973; Wenger et al. 1975; Drabek, 1986; Dynes, 1994; Morgan, 2004; Eberwine, 2005; Schoch–Spana, 2005; WHO 2005). Apart from encouraging ineffective policies, the problem can be that these media misperceptions lead to allocation of scarce management and recovery resources, and can cause needless anxiety among those impacted by the disaster. For example, the threat of epidemics from the dead is a persistent myth, leading to pressure for mass burials. Another is the need for goods of all kinds including medical supplies. Unfortunately, these generally simply absorb resources for sorting and checking items that are often of no use to the affected areas – hence the emphasis on "needs assessment" (PAHO, 2001). Another myth concerns looting, which research has long argued does not occur (Auf der Heide, 2004). Fear of looting is an important reason often given for reluctance to evacuate.

Drawing on this literature, Table 2 sets out some myths, the research understanding of reality, and what appears to have occurred in New Orleans. The most striking feature of the Table is that the New Orleans experience appears to call into question the relevance of long standing research results, and the assumptions they generate for practice. In summary, does it contradict decades of disaster research findings? Or is it simply an exceptional event or one reported with exceptional exaggeration?

To this partial and preliminary list we could add a firmly held belief that technology will solve many of the problems (Wood et al, 2005). However, reflecting on New Orleans it is difficult to see where technology alone would have made a significant difference. New Orleans also draws attention to a gap in the disaster literature – it is almost silent on dealing with major disaster in an environment of organised crime, poverty, high levels of drug addition, and weak government.

Disasters highlight existing attributes

An orthodoxy discussed more among researchers than practitioners, is that disasters tend to highlight or sometimes exacerbate existing trends, rather than create entirely new circumstances. Given the 'normal' circumstances in New Orleans, what was seen and the fallout does not seem so surprising. However, an earlier New Orleans flood, that of 1927, is drawn on by historians rather than disaster researchers to illustrate the opposite – that a major disaster can lead to substantial and lasting social change. The management of the 1927 Mississippi River flood left many African Americans destitute and seemed to dramatise the rigidity and lack of concern for Americans of the Hoover presidency. It is credited with paving the way for the huge expansion of central government's role in US disasters and more generally with Roosevelt's 'New Deal' (Barry, 1997). Within Louisiana it helped bring the populist Huey Long to power – and a dynasty that ended in 1960. The Ninth Ward of the city was the first area flooded in 1927 as was the case in 2005.

Is US disaster research applicable to Australia?

Examining overseas experience raises an obvious issue which is far too often ignored – that is the question concerning the applicability of lessons and experience from elsewhere. This is quite distinct from the concerns raised when the information from elsewhere would be embarrassing or show the inadequacy of local thinking and practice. It is also distinct from concerns about the limits of generalising from case study research.

If the national – let alone regional or local – contexts of the research are very different to where it is being applied, then research results may not be automatically transferable. New Orleans appears to be entirely different in almost every respect from any Australian city. A large question mark must hang over the applicability of its experience elsewhere.

This simply highlights a problem with most research results – that is the extent to which they can be regarded as universal. But most research is quoted as if it was perfectly transferable across national boundaries, even if a ritualistic footnote suggests that caution be exercised in interpreting results across cultures. A similar comment may be made about the uncritical transfer of results within countries to rather different contexts, for example, the results of risk research conducted in rural towns in the US and Australia have been applied to metropolitan areas without consideration of the differences.

The output from US based researchers dominates the published and accessible literature. Issues of scale, resource availability, institutional differences, and the multiple cultures of American society should make us cautious about transferring US research results and

practice. Unlike Australian states, each of the 50 US states is quite distinct, and the three US mainstream "cultures" of Anglo–Celtic, African American and Hispanic (in addition to Indigenous groups) (each consisting of many sub-groups) are separated by language, popular culture, and economic, political and health issues.

Most of us know America through the media portrayal of California and New York even if we have visited other areas for tourism or business. Most non-Americans know little of the distinctive societies and economies of the other 48 states, including Louisiana. New Orleans and Louisiana have their unique history, political, economic and cultural experience which sets them apart from the rest of the US, let alone the rest of the world. At a minimum, we should be conscious of this, while not using the differences as an excuse for dismissing challenging implications.

Could it happen here now?

The scale of *Hurricane Katrina's* impact suggest that it could not happen in Australia. However, as it is too easy to simply dismiss the possibility. hree fundamental elements of the New Orleans situation are examined here: the physical exposure; the vulnerability of the people; and the emergency response and initial recovery. Trends in Australia that might increase the risk of a similar event are then examined.

The hazard – the delta, the city and sea level

"An acre [of the delta] disappears every 24 minutes. Each loss gives a storm surge a clearer path… into [New Orleans]." "The Mississippi delta is the posterchild for… the world's degrading deltas, coastal wetlands and cities on the sea" (Fischetti, 2001).

Australia does not have significant deltas and does not have either the original or the evolving exposure of New Orleans as its protective delta is eroded away. It is easily overlooked but there are also thousands of people living precariously around the bayous throughout the delta. An initial analysis by the Louisiana State University has found that a major shipping channel cut through the delta wetlands in the 1960s exacerbated the storm surge. It appears that the channel may have made the surge 20 per cent higher and much faster (BBC, 2005, (iv)). Their analysis also reported that trees provided some protection for the levee against surge – this is well established and was also noted by investigators into other coastal ecosystems and the 2004 Asian tsunami (Harakunarak and Aksornkoae, 2005). The damage from *Katrina* appears to have made the whole area much more vulnerable by washing away some 80 square kilometres of delta land.

But parts of Australian towns lie at or near sea level with little or no barrier between development and the sea, for example, some towns on the Queensland coast such as Cairns, Townsville, MacKay, and the rapidly expanding Gold Coast canal estates, are just above sea level and are vulnerable to quite minor storm surges. The north and north-west of Australia is also vulnerable but the large tidal range there reduces the probability of a surge going inland as it would need to arrive at or near high tide.

The dykes protecting New Orleans from the waters of Lake Pontchartrain have been found to be poorly designed, built and maintained in one of the at least three initial investigations. A number of the breaches were the result of faults in design and construction – investigators say they were not as strong as expected and it is clear that sections failed without overtopping, others failed after the foundations were eroded (Washington Post, 2005). It has been claimed that the poor soil conditions had been drawn to the attention of the responsible agency, the US Corps of Engineers (LA Times, 2005). It also appears that gaps in the levees may have been left open for railway tracks.

Some disaster experts have asserted since the crisis that the design level of 1:250 flood or so was as much as could be economically justified. Unfortunately, this sort of analysis ignores the fact that this is not a normal river dyke the failure of which admits some water for a time which will drain away. Instead it is a dyke keeping the sea at bay, and not simply seawater but seawater seriously contaminated by sewage and chemicals from 31 "superfund" sites (contaminated sites identified for national priority clean-up), as well as hundreds of major additional sources of chemical and biological contamination. Failure threatens the future of the entire city and perhaps region of nearly two million people. By way of contrast (following the 1953 disaster) the current Dutch sea dykes are designed for a legislated return period storm of about 10 000 years and the river dykes running through the same areas lying well below river water level are designed to over 1000 years. These probabilistic risk analyses ignore the problems with the standard as constructed and maintained rather than as designed on paper. It is worth noting that in the past, similar issues concerning the standard of construction, operation and maintenance or major river levees, but not sea walls, have been observed in Australia for example, the 1991 NSW Levee Audit.

The people

"Poverty in New Orleans is pervasive and systemic. Approximately 27%… live below the federal poverty line." Systemic poverty hampers, if not cripples, virtually every aspect of New Orleans… Education, economic development, housing, crime – all these and more are deeply influenced by the severe poverty of the city." (TCA, 2004).

Many cities around the world have significant areas of deprivation, some like New Orleans, may have

a near majority in that situation. The population of New Orleans is predominantly African American distinguished by high levels of chronic unemployment, poverty, poor health and homelessness. While the great majority were able to evacuate the city voluntarily, over 100 000 did not. These people did not have the means to leave and in many cases did not appear to have personal networks to help them. The city has the highest murder rate in the US (with a local entrepreneur selling tee-shirt images of the dead), very high levels of drug related crime, with consequent "no-go" areas (ONDCP, 2004). Those without private health insurance have very limited access to medical facilities.

The per centage of disabled over the age of 65 years is 48.1 per cent, and 22.1 per cent for those aged 21–64 years for the state of Louisiana. Life expectancy for African American men is about 63 years (US Census Office, 2000). City governance is of limited effectiveness, and the state has a long history of political violence and corruption. The city is in the US south and some aspects of the crisis reflect this – something not readily acknowledged by all commentators – strong support for a pervasive gun culture, long established poverty in large sections of society, and a very weak public sector in terms of essential service provision other than law and order (Frymer, 2005). In common with other US disasters many of the poorest are renters who found themselves facing eviction in the immediate aftermath of the event (see also Miller and Simile, 1992). Many outside the city live in small French speaking Cajun communities with a partly subsistence base. Adjacent towns were not all helpful.

In summary, by almost any criteria many of the people of New Orleans are very vulnerable to disaster.

Nowhere do major Australian cities or towns sit within cultures of governance, established poverty and crime like some major US cities. But many of these features and issues exist on a smaller scale within our metropolitan cities and in remote rural areas. They also exist in cities outside Australia but within our immediate neighbourhood.

The emergency response – *Katrina* brought the water, but officials organised the chaos

"Katrina *exposed serious problems in our response capability at all levels of government, and to the extent that the federal government didn't fully do its job, I take responsibility.*" President Bush (BBC, 2005 (v)).

As discussed above, the event was well anticipated, planned and rehearsed. The attributes and vulnerabilities of the population were, or should have been, well known. So it would be reasonable to expect that the emergency response was at least adequate if not exemplary. As is now well established, this was far from the reality with all levels of government failing.

After a couple of weeks New Orleans had possibly more troops on the streets than Baghdad, but their priorities did not align with those in the city for some time as they patrolled the streets in armoured cars. Their primary task was not rescue or assistance for the stranded population. It was property protection and law and order. It is clear from now released FEMA email correspondence that there was a continuing desperate shortage of food, water and medical equipment and expertise which was simply nowhere near being met (with as little as 5 per cent of what was requested) even when requests were made days ahead (Melancon, 2005).

The media focus has been, and continues to be, on FEMA (the US Federal Emergency Management Agency) whose mission is to co-ordinate response and provide resources as required. Some commentators have argued that FEMA cannot act on its own volition – it must be asked to assist by the affected area's mayor or state governor. However, this was not raised as an issue even as the Director of FEMA lost his job. Before the hurricane hit, George W Bush declared a state of emergency for the region under *Title V* of the *Stafford Act*. To quote from the White House statement of August 27: "The President's action authorizes… FEMA… to coordinate all disaster relief efforts… to save lives, protect property and public health and safety…"

Nevertheless, local and state emergency planners and responders have largely escaped public scrutiny so far. When they have been interviewed they seemed overwhelmed by the situation, and appeared to be unprepared in every way. It is easy to blame these managers, but emergency management was not a high political priority in the state of Louisiana despite its location and opportunities for predicted and rehearsed catastrophe. Resources made available for the purpose appear to have been token. Nevertheless, the performance of the police was poor and possibly counter-productive with a range of looting, violence, and other allegations, such as preventing the entry of relief teams and supplies, made against them (and other para-military forces). Some 50 resigned during the event and many others, perhaps as many as 250, failed to report for duty (Times Picayune, 2005). Some other services such as the local fire service and national Coast Guard appear to have worked well.

It appears that co-ordination between authorities – and in the US there are typically many emergency management groups involved at the state and local levels of government – was limited. The absence of the American Red Cross due to lack of communication by authorities led to a statement answering the question: "why is the Red Cross not in New Orleans?" (American Red Cross, 2005). In at least some areas there was an absence of integrated incident command or management systems. A key emergency management capability for

After a couple of weeks, New Orleans had possibly more troops on the streets than Baghdad.

evolving complex disasters is an ability to adapt to surprises, and to be flexible in the face of changing circumstances and demands. There was little evidence of this (Wachtendorf and Kendra, 2005).

In fact, it is quite possible that the response was even worse than portrayed by the media, rather than better as represented by some media apologies and researchers. An analysis of Michael Brown's (then Director of FEMA) emails suggests this. An example of one of many emails he received:

> *"Sir, I know you know the situation is past critical… Hotels are kicking people out, thousands gathering on the streets with no food or water. Hundreds still being rescued from their homes. The dying patients at the DMAT tent being medivac…Estimates are many will die within hours… We are out of food and running out of water at the dome…[where there were 20,000+ people]… DMAT staff working in deplorable conditions… Phone connectivity impossible."*
> (Marty Bahamonde, quoted in Melancon, 2005)

Michael Brown's full response:

> *"Thanks for the update. Anything specific I need to do or tweak?"*

There are worse examples.

The city's medical facilities fared badly, especially as their emergency power failed (Dalton, 2005), and patients at some nursing homes were abandoned and died resulting in legal action against the managers.

A lot of NGO aid groups are very active but largely invisible to the foreign media, in particular faith based groups such as the Mennonites and Islamic Relief.

In Australia, theSstates play the lead role in emergency management with variable support from local government. The federal government has at best a supporting operational role except in federal territories. The emphasis – perhaps unintended – is towards a high standard of planning and management across each State and Territory characterised today by increasing interagency co-operation, communication and some innovative leadership, which has demonstrated an ability to adapt – and it appears that it was leadership above all else that may have been lacking for *Hurricane Katrina*. The reorientation towards counter-terrorism has not been as fundamental as in the US in that the core interest of most state emergency services remains natural and technological disasters.

The above suggests that Australian emergency managers would out-perform their US colleagues if faced with a New Orleans' type situation. The problem with this positive assessment is that we have not faced a very large complex event for a long time, and so it is difficult to be certain about our performance. FEMA has more resources at its disposal than any Australian agency and had planned for the event. What does this say about a reliance on centralised resources and planning?

Could the future bring this chaos in Australia?

Based on examination of the physical hazard and exposure, vulnerability of the people and emergency management competence, it seems that Australia could not experience a New Orleans type and scale of disaster. The likelihood of it happening in a major city in our region, such as Port Moresby – where Australia would be expected to assist and perhaps help lead the response – is not considered here.

But, elements of the New Orleans experience could and do occur in microcosm. Of more concern may be the possibility that identifiable trends are increasing our risk of a larger scale disaster with some New Orleans attributes.

Exposure – investment and global environmental change

Australians like Americans are increasingly attracted to hazardous places. Bernard Salt paints a picture of Australians streaming northwards and coastwards – to the cyclone prone areas (Salt, 2005). Despite the recent devastation, the US hurricane coast is increasing in population by about 1300 a day. The Queensland towns mentioned above are being joined by many others as development expands as close as possible to the sea.

Two aspects of predicted global environmental change: sea level rise and an increase in the number of cyclones associated with higher sea surface temperatures, will bring more storm surges and make smaller surges more dangerous. Recent work on hurricanes in the Caribbean shows that the absolute number of hurricanes has not increased, but the number of severe hurricanes has increased significantly and it is these damaging events that are of concern.

People, property and vulnerability

The vulnerability of many of those stranded in New Orleans can be characterised in terms of exclusion from many of the economic, health, social and political benefits of mainstream America (Cutter 2005), as well as pervasive criminal activity, exacerbated by ineffective emergency management and city governance. There appears to also be a high level of disabilities.

Apart from the widening wealth gap (Salvation Army, 2005), Australian society does not appear to be heading that way. But major changes which reduce the legal entitlements of many Australians, for example through reduced job security, a privatised health system, or other changes which reduced political representation, could shift this assessment. Other trends of a more demographic and lifestyle nature may be making us more vulnerable – primarily that we are increasingly an aging coastal-dwelling population.

Emergency management

The tendency to rely on a single supremo – one person in "control" during a major evolving multi-faceted crisis – invites weakness or failure. Similarly, structures, organisational culture and planning that discourages adaptability, appreciation of the reality on site however unpleasant, and multi-organisational (public, private and civil) co-ordination, may constrain capabilities however well resourced. To the extent that Australian emergency management follows these paths in the future, we risk New Orleans type problems in complex drawn out events. More robust arrangements can keep accountability and disperse the responsibility so that bottlenecks can be avoided, and encourage the flexibility needed to cope with very large complex problems.

Politicians allocate the resources to emergency management against many competing demands – as I was reminded recently by a Canberra politician. In quiet periods it is of course tempting to reallocate funding – setting the scene for inadequacy when performance actually counts – during a major non-routine crisis. Redundancy as in spare capacity is not something managerialism has been happy with. However, extra capacity can be found through arrangements with other public and private groups provided some prior arrangements or planning for this exists. Any trends which weaken response and consequent management

and the current building of recovery capacity, would take us in the New Orleans direction.

Australian emergency management organisations have been heading in the direction of a co-ordinating and facilitating role in major events, and continuous efforts on a flexible multi-hazard approach. But the rise in importance of counter-terrorism has the potential to reduce or reverse this.

Another view

Direct comparison with New Orleans may be overly comforting as we can reassure ourselves that similar situations simply do not exist in Australia. A more realistic test may be to consider some of the generic or systemic issues. How would our major cities cope with a comprehensive collapse of most infrastructure across a significant part of their territory – with an absence of food, water, fuel, communications, transport, electricity, and medical facilities? We could add to this the need for evacuation and immediate accommodation for over 100 000 people. They might manage reasonably well for a short period, but the New Orleans experience with medical facilities for example makes for very sober reading, as back-up power failed long before the crisis was anywhere near being resolved (Dalton, 2005). The situation could be complicated by large gangs who take advantage of the situation for their own purposes. How can the possibility of decision paralysis be taken into account in planning?

Conclusions

Hurricane Katrina presents a very complex situation made more difficult to examine because of the intense media coverage and highly political nature of the event. Something similar is most unlikely to occur in Australia as we lack the type of exposure, we do not have such a large concentrated area of poverty and associated vulnerability, and our emergency services are organised quite differently. However, at a small scale aspects of the US experience may occur and trends in Australian society may exacerbate this. As well, cities within our immediate neighbourhood where we would be expected to assist, contain elements of the New Orleans syndrome. The generic emergency management issues raised by New Orleans present more of a challenge:

- very large scale evacuations;
- the total collapse of infrastructure and unavailability of accommodation, food and water;
- an inability to make effective decisions in a major crisis; and
- dealing with large-scale organised criminal behaviour, and avoiding shrinkage of the local economy.

Plans and planning – including the use of scenarios and exercises – need re-examining for their assumptions and weaknesses which include ignoring local realities.

There has been much discussion about the circumstances when mass evacuation of large cities is viable – apart from moving people where would the hundreds of thousands go? Following in the slipstream of *Katrina*, *Hurricane Rita* shows some of the difficulties. Thousands were trapped for many hours in massive traffic jams as people headed out of Houston. Then the evacuation orders were cancelled (Blenford, 2005). Evacuation has its own risks too – 23 people died when their bus burst into flames, "at least 35 other people – many of them elderly or ill – died during the evacuation of Houston" (in the face of *Rita*) (USA Today, 2005).

The event is a challenge for the continued relevance of long standing research results, and the assumptions they generate for practice. This comment applies to both the management of the event itself and the initial recovery process, which appears to now be seriously hampered by local economic downturns. Detailed study of the event is needed to clarify what areas of practice need rethinking, and the extent to which US research and practice continues to apply to contemporary Australia.

Was New Orleans an exception? Or does it suggest that we need to rethink the currency of long established research and policy? The answer here is closely associated with the answer to the related question: did what we saw actually happen or are we suffering from some collective media induced hallucination? Disentangling the myths, mis-reporting, various sorts of self-interest and agendas, the micro experiences of individuals, and the sheer heterogeneity and complexity of the event, is necessary before we can provide definitive answers.

Acknowledgements

A note on sources

This paper is being prepared as the disaster continues to unfold. The New Orleans and Louisiana situation after *Hurricane Katrina* is immensely complex and political, and any conclusions are therefore tentative. I have drawn on media reports – primarily the US media, BBC World Service website (and its links to global media), and Australian media – some discussions on hazard related internet bulletin boards, discussions with colleagues who have been involved in rapid response research on the impact of *Hurricane Katrina*, initial draft results of surveys of the evacuees, papers by US colleagues posted on various websites, various press releases and commentaries, and observations from local contacts who have been involved with the emergency response and evacuee management. With a few exceptions, I have not checked original sources quoted in media – apart from those reporting high levels of violence. Numerous blogs have also provided a range of additional perspectives. Long before the hurricane I visited the city and surrounding Mississippi delta region on two occasions.

The stranded were eventually evacuated to points scattered throughout the USA.

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Author

John Handmer is Innovation Professor of Risk and Sustainability at RMIT University where he leads the Centre for Risk and Community Safety. He is also an Adjunct Professor at the Australian National University and holds a research position at the Flood Hazard Research Centre, London.

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Appendix A: Timeline

NOT A SURPRISE (a selection from numerous articles in popular and specialist media.)

Oct 2001	– *Scientific American* – Drowning New Orleans. By Mark Fischetti *A major hurricane could swamp New Orleans under 20 feet of water, killing thousands. Human activities along the Mississippi River have dramatically increased the risk, and now only massive reengineering of south-eastern Louisiana can save the city* *(http://www.sciam.com/article.cfm?chanID=sa006&articleID=00060286-CB58-1315-8B58834 14B7F0000&pageNumber=1&catID=2)*
23–27 Feb 2006	– The Times Picayune New Orleans published a 5 part special *'Washing Away' 'It's only a matter of time before south Louisiana takes a direct hit from a major hurricane. Billions have been spent to protect us, but we grow more vulnerable every day.'*
June 2004	– *FEMA's Hypothetical Hurricane Pam scenario brought sustained winds of 120 mph, up to 20 inches of rain in parts of southeast Louisiana and storm surge that topped levees in the New Orleans area. More than one million residents evacuated. The 5 day exercise used realistic weather and damage information to develop joint response plans for a catastrophic hurricane in Louisiana.*

NEAR MISS

4–24 Sept 2004	– *Hurricane Ivan narrowly misses New Orleans – and leaves minimal damage.*

HURRICANE KATRINA

23 Aug	– National Hurricane Center (NHC) issued statement about tropical depression over the Bahamas.
25 Aug	– Storm is upgraded to *Hurricane Katrina* and hits land in Florida as a Category 1.
26 Aug	– Governor Kathleen Babineaux Blanco declares state of emergency in Louisiana. Threat elevated to Yellow by Homeland security. – Joint Task Force Katrina – issued requests for assistance from the states of Florida, Alabama, Mississippi and Louisiana.
27 Aug	– Upgrade to Category 4. – White House declares impending disaster area and orders Dept of Homeland Security and FEMA to prepare, under the Stafford Act Title V. – Various mandatory and voluntary evacuations are ordered; – All highways leading out of New Orleans report bumper to bumper traffic. Hotels 150 miles inland are all booked up. – Mayor Nagin of New Orleans called for Voluntary Evacuation. Argues that legal liability for business closures hinders call for mandatory evacuation.
28 Aug	– Now a Category 5 hurricane at 175 mph – potentially catastrophic – NHC – NOAA urgent advisory issued: ' *...Devastating damage expected... hurricane Katrina... most powerful hurricane with unprecedented strength... rivalling the intensity of hurricane Camille of 1969'.* – Director of FEMA briefed by NHC on potential levee breach. Warnings of storm surges overwhelming the levees are reported. – Mayor Nagin orders Mandatory Evacuation. Those unable to evacuate start filing into the New Orleans Superdome. – Governors of Louisiana and Mississippi request for additional security forces from the Federal government.

Date	Events
29 Aug	– Katrina makes landfall at 0610 as a Category 4 hurricane. (Plaquemines Parish) – 0502 – Electricity fails at the Superdome, switch to back up power so no a/c and minimum lighting. – 0800 – Levee broke on the industrial canal near the St Bernard–Orleans Parish line. Water is pouring through the 17th Street canal and the city begins filling with water. Pumping stations cease operation on the lower 9th Ward. – 0900 – Eye of hurricane passes over NO and Lower 9th St is submerged eight–nine feet in water. – FEMA – Brown, dispatches 1000 employees to the region five hours after the hurricane hit and allows two days arrival time. They are requested to portray a positive image of disaster operations to government officials, community organisations and the general public. (The Guardian 9/9/05 http://www.guardian.co.uk/katrina/story/0,16441,1566278,00.html) – Red Cross announces that it is launching the largest mobilisation of resources in its history. FEMA encourages public donations.
30 Aug	– 'Can't get in...' FEMA (Brown) advises to rely upon local services and Red Cross. Refuses volunteer firefighters into the area until National Guard enters and secures the city. – Eighty per cent of the city is submerged – there is no electricity, no running water, no working sewage systems. Governor Blanco says the Superdome must be evacuated. – Superdome population houses 20,000 evacuees.
31 Aug	– New Orleans police ordered to cease SAR and turn to controlling widespread looting and enforce a curfew. – Telecommunications cut and conditions in Superdome reported to be deteriorating.
1 Sept	– Bush: Zero tolerance on looting, price gouging and insurance fraud declared. – FEMA promises still have not arrived. – Halliburton awarded navy contract for storm clean up – restore power, repair rooves, remove debris at the naval locations. – FEMA halts rescues by California swift water rescue due to security concerns. – Increase in national guard deployment to 30,000. Houston Astrodome refuses to take any more evacuees – Criticism of lack of command and control as violent unrest reported by media – anarchy, looting and chaos.
2 Sept	– Gov Blanco issues public health emergency order temporarily suspending state medical licensing regulations, allow licensing of out-of-state medical professionals to work on recovery and relief. – Bush administration asks Louisiana to request a federal takeover of relief efforts – this will give the federal government control over Louisiana's National Guard and local police. But the state rejected the proposal. – Mayor Nagin is at breaking point and speaks frankly on radio – mentions how 'pissed he is' and about the junkie situation looting the area.
3 Sept	– Red Cross prevented from entering the city (http://www.redcross.org/faq/0,1096,0_682_4524,00.html) – Bush blames State and Local officials (Whitehouse statement) – Cuba and other Latin American countries as well as France offer aid.
4 Sept	– US appeals for international aid – blankets, water trucks and food. (http://news.bbc.co.uk/2/hi/americans/4211404.stm)
6 Sept	– Bush announces a formal investigation into how the disaster was handled.
7 Sept	– Two Jefferson Parish Police Officers and FEMA contractors arrested for looting.
9 Sept	– Michael Brown – FEMA removed – US public pledges $578 million (more than 911 and the Asian tsunami)
12 Sept	– Michael Brown formally resigns from FEMA. – R. David Paulison becomes new acting director of FEMA.

Building community self sufficiency for fire safety

Kellie Watson talks with researchers from the Bushfire Cooperative Research Centre about new research into Community Self Sufficiency for Fire Safety

Introduction

Fire is very much a part of the Australian landscape. The events in Canberra in 2003 highlighted for Australians that bushfires are a very real threat for some urban, rural and urban-interface communities across Australia and New Zealand. How these communities prepare for bushfires and the role of communities and individuals in reducing bushfire risk is a focus of the Bushfire Cooperative Research Centre's (CRC) *Community Self Sufficiency for Fire Safety* program, which is looking beyond the smoke and flames, to the communities who have experienced fire or are at risk.

The *Community Self Sufficiency for Fire Safety* program, lead by Professor John Handmer from RMIT University, is addressing key questions around building community self sufficiency and resilience in the face of bushfire risk.

The program is seeking answers to the following types of questions: How do communities and individuals prepare for bushfires? What is the economic cost of bushfire to communities? How do fire agencies evaluate community education programs? What makes and motivates bushfire arsonists? Why and how do community members decide to stay or go early and what is the role of media in communicating bushfire risk?

These questions are the focus of a collaborative research effort of social scientists, psychologists, social geographers, economists and criminologists from seven research organisations and six fire agencies across Australia.

The Bushfire CRC

The Bushfire CRC was established in July 2003 to undertake research that will assist fire agencies to reduce bushfire risk to communities in an economically and environmentally sustainable way. The research is a multidisciplinary approach to bushfire research—29 research projects are structured into four research program areas focusing on the physical, ecological, community and health aspects of bushfires.

With funding support from its key partners and the Federal government-funded *Cooperative Research Centre Program*, the Bushfire CRC is a collaborative research program between universities, fire, land management and emergency services agencies and research organisations. The Bushfire CRC also provides financial and research support for research higher degree students. PhD and Masters students are linked into the research projects and participate in all workshops and events—building a new generation of bushfire researchers trained in the social sciences.

Meeting the research needs of fire and land management agencies

The *Community Self Sufficiency for Fire Safety* program is divided into six distinct research projects.

The projects, according to Kevin O'Loughlin (Bushfire CRC CEO), are focusing on the key research questions of fire and land management agencies.

To ensure that the research is focused on the needs of end user agencies, O'Loughlin says that researchers work closely with staff from fire and land management agencies, "ensuring a strong end user engagement in the research."

With the *Community Self Sufficiency for Fire Safety* program Research Leader Professor John Handmer works directly with John Gledhill, Chief Officer of the Tasmania Fire Service. "The relationship is a core part of the Bushfire CRC research process" adds O'Loughlin.

Bushfire CRC Research Projects

Evaluating the *stay or go early approach*

A major focus of Bushfire CRC's research is evaluating the implementation and community understanding of the *stay or go early* approach. The Australian Fire Authorities Council (AFAC) has a national community safety policy known as the *Stay and defend or go early* policy. If it is likely that a bushfire will threaten a property, residents are encouraged to make a decision to leave early or stay and defend the property.

Preliminary research into community understanding and implementation of the *stay or go early* approach in north eastern Victoria has revealed that there is a high level of misunderstanding about what it means to *stay or go*

Bushfire CRC researchers, students and end users, part of the Community Self Sufficiency for Fire Safety research team.

early. John Handmer and the RMIT research team have conducted a series of focus groups throughout the region. "The research has found that the evidence supports the policy, but there are issues with its implementation" says Handmer. "*Leaving early* and *staying and defending* mean different things to different people. Responsibility towards neighbours, whether people are renting or own the house, and fitness levels all appear to be factors influencing people's decision-making."

Recent research by Bushfire CRC researcher Alan Rhodes has identified that the understanding of the *stay or go* policy is not as straightforward as may be believed. "What emerged from a recent telephone survey was a significant part of the community (approximately 60 per cent of respondents) who when choosing whether to *stay or go early*, said that they would wait and see what happens and leave if they felt threatened" says Rhodes. The results, according to Rhodes, reflect a dilemma that the *stay or go early* approach poses to communities.

The next stage of the *stay or go early* research will focus on what influences householder decision making in relation to staying and defending or leaving, and why people change their minds and leave at times of highest risk, in the face of an approaching fire front. The outcomes from the research will aid fire agencies in developing community education programs around the implementation of the *Stay and defend or go early* policy.

Evaluating community education programs

One of the major tools used by fire agencies in delivering community safety outcomes, is community education. However, how do agencies evaluate the effectiveness of community education programs to ensure that they are delivering the right messages and information to target communities? The evaluation research project is lead by Professor Gerry Elsworth from RMIT and is developing a series of evaluation tools which can be used by fire agencies to evaluate program effectiveness.

Recent research into the effectiveness of the *Street FireWise* education programs of the New South Wales Rural Fire Service (NSW RFS) in the Blue Mountains involved close collaboration between researchers and NSW RFS staff. The project outcomes indicate that the effectiveness is strongly based upon the degree of community which exists in an area.

The research has also started to develop a map of the key elements of the community safety programs where "quick wins" can be made. Also the methodology is now at a stage where it can be trialled with fire and land management agencies in conjunction with the research team to build further case-studies.

Understanding communities

For fire and land management agencies to deal directly with communities, an understanding of the communities in which they work is an essential part of the communication process. The research based at James Cook University in Townsville and conducted in conjunction with staff from Queensland Fire and Rescue

Service has undertaken a series of surveys in Mt Tambourine and Thuringowa in Queensland as well as remote Indigenous communities in Cape York. Dr Alison Cottrell from James Cook University is focusing on the relationships between policy, planning and service delivery in communities in high bushfire risk areas.

Recent research from Luke Balcombe, a Bushfire CRC masters student at James Cook University, has highlighted the difference between communities and fire agencies. Balcombe's surveys of communities in Mt Tambourine, a high-risk urban-bushland interface, has identified that there are disparate views between expectations of communities by agencies and of agencies by communities.

The outcomes of the entire project will provide agencies with further information about the communities that they service, providing invaluable knowledge about the pressure, values, differences and needs of communities in regards to managing bushfire risk.

Another outcome, according to Balcombe, is the interaction that he has had as a student, "it has provided me with opportunity to interact with academics and fire agencies staff and gain invaluable experience in the process."

Community preparedness and risk communication

Understanding the factors that impact on individual and community preparedness is essential for effective risk communication. The program's fourth research area focuses on the relationship between preparing for bushfires and communicating risk via community engagement, the media and the Internet.

According to the project's co-leader Professor Douglas Paton from the University of Tasmania, "community dynamics influence how people make decisions regarding their relationship with bushfires. It thus plays an important role developing acceptance of bushfire risk issues in the community." Professor Paton states that the media are an important source of information for community decision-making, forming individual intentions to prepare for bushfires, and translating these intentions into protective actions.

Media construction of bushfire risk in shaping community views and the relationships of emergency service agencies with the media is also under examination by a team of researchers at La Trobe University. The project will soon establish two PhD projects which will focus on the implications of new media forms, such as websites, palm held technologies and mobile phones in communicating during bushfire emergencies. A partner project at Melbourne University involves the use of the Internet by fire agencies as a risk communication tool.

The outcomes from the three projects will provide a model for fire and land management agencies for communicating risk and enhancing preparedness amongst at-risk communities.

Bushfire arson

Understating more about deliberately lit bushfires and identifying underlying patterns is the focus of Bushfire CRC research underway at the Australian Institute of Criminology. According to the Project Leader, Matthew Willis, "a large proportion of bushfires in Australia are deliberately lit and we are learning a lot about where and when arsonists strike." The project is analysing bushfire data from fire services and land managers across the country, as well as examining police investigation records. Willis states that the project has discovered that known bushfire arsonists can adopt a pattern of fire setting activity centring on their home or workplace and that knowing these patterns can provide valuable tools for investigators.

A successful output of the project has been the production of the *Bushfire Arson Bulletin*, providing research updates in the field of bushfire arson, to practitioners in fire and land management agencies.

The project is providing a greater understanding of why people light bushfires which will aid agencies in the development of bushfire arson prevention programs.

Economics – understanding the true cost of bushfires in Australia

The economics of bushfire and bushfire mitigation is the focus of the economics project which is examining the value of aerial fire fighting and the economics of prescribed burning jointly with the Bushfire CRC's *Fire Suppression Program* lead by Jim Gould from CSIRO/ENSIS. Both projects have produced draft models and applied the model to recent fire events.

The aim of this work is to produce better models to support management decisions, answering questions such as what is the relative cost savings by utilising more or less aircraft on a fire, and what is a cost effective amount of prescribed burning to carry out, when all values have been taken into account? By determining values such as physical assets (for example houses and infrastructure) but also some of the environmental and social assets (such as biodiversity, water quality and quantity, significant cultural sites, and disruption to people's lives) the project will document the total cost of bushfires in Australia.

Highfire—learning to live with fire in the Australian high country

Continuing the Bushfire CRC's interdisciplinary approach to research, the CRC's newest project, *HighFire*, funded by the Federal government, will study the human factors in relation to fire in Australia's high country areas. While the larger *HighFire* project will focus

on the various influences on fuels in the high country as well as ecology, water and greenhouse issues, this part of the project will look at the resilience of communities impacted on by fire and research the experience and values of local communities.

Handmer believes that "through documenting the experience of High Country communities the project will provide useful insights for practitioners and provide advice on strengthening local resilience to fire."

Project results and international collaboration

The Bushfire CRC has a seven year research agenda, however, there are currently a number of publications that have been produced through the program. A recent special edition of the international journal *Environmental Hazards* featured Bushfire CRC research. Other publications such as presentations, fact sheets and research posters are available on the Bushfire CRC website (www.bushfirecrc.com).

Bushfire CRC researchers are increasingly making connections internationally, such as similar research programs in California, a high risk interface area with a number of similarities to Australia. The international collaboration is recognition of the value of the Bushfire CRC's research program and adds to the Bushfire CRC's goal of being a world leader in bushfire research according to O'Loughlin. "International collaboration can only occur when the research in the CRC is world class. The research in this program which incorporates seven of the top research organisations in social science in Australia is clearly meeting this challenge" adds Dr Richard Thornton, Research Director of the Bushfire CRC.

Handmer stresses the importance of the research outcomes focused on the needs of fire and land management agencies "will mean practical tools for the delivery of community safety programs to communicate risk and improve resilience and self sufficiency in bushfire prone areas."

O'Loughlin believes that ultimately what will make a difference is the use of research findings by fire and land management agencies. According to O'Loughlin "the relationship developed by researchers and fire and land management agencies throughout the research process, will act as a solid foundation for the translation of research outcomes into programs on the ground and for the true fostering of community self sufficiency for fire safety."

Battling ferocious flames: bushfires in the media

Cohen, Hughes, and White reflect on the deeper cultural issues encountered in bushfire representation in the popular media

Abstract

What are the deeper cultural issues encountered when bushfires are represented in the media? This paper reflects on the relationship between media constructions of bushfires and fire related issues. The recently published Council of Australian Governments (COAG) *National Inquiry on Bushfire Mitigation and Management* recommended that 'Living with Fire', should become the basis for a national school education program. But what will happen if this goal conflicts with the dominant representations of bushfires in the media? This question is relevant in light of current attempts by researchers and emergency organisations to generate a new public discourse about bushfires in Australia.

"The discourse around fire is saturated with superlatives, with words such as 'exceptional', 'unprecedented', 'extraordinary' and so on. Such hyperbole may (I remain unconvinced) give some immediate comfort to those who have just suffered trauma and major losses. But in the long run, it only serves to reinforce ignorance and losses in the inevitable future event" (Campbell, 2003:246).

Introduction

In televised news programs, newspaper articles, talk-back radio, government campaigns, documentary and fiction films destruction and catastrophes are everywhere. Disaster images are beamed around the world delivered in neat packages to sophisticated home-entertainment systems and computer screens. Fear becomes a commodity, a product that sells well along with other consumer items. Commercial television uses its reporting of events such as wars and disasters as a way of capturing audiences by providing 'panic pleasure' (Marshall, 1994).

Disasters and disaster management occupy the minds and time of emergency planners, politicians and diverse government agencies, but they are also prominent in the minds of academics, writers, filmmakers, journalists, news-editors and the public at large. Disaster-response, therefore, is not just about improved management practices, better planning, new technologies and innovative mitigation programs. Rather, it must take account of particular images, cultural perceptions and understandings of our natural and built environments and their potential destruction.

Bushfires are integral to the ecology of the Australian environment, and so, some argue, should not be perceived as 'disasters' (Campbell, 2003). This argument appears in much of the criticism of the media depictions of such events. For example, a fire that started on 1 April, 2005, in the Wilsons Promontory National Park on the south-eastern tip of Victoria, had scorched around 6200 hectares by 12 April. The fire had been deliberately lit ten days earlier as part of a planned fuel reduction burn. Yet, once the fire had 'escaped' it was presented and interpreted in the popular media as a disaster. The official responses from Parks Victoria suggested that "unseasonal extreme weather conditions contributed significantly to the spread of the fire"; but that this fire would nevertheless have ecological benefits. In other words Parks Victoria rejected the media framing of the fire as a disaster and shifted the emphasis from 'blame' to the environmental benefits and the ecology of fire.[1]

Clearly there are other examples where collaboration with the media before, during and even post incidents work well. This is partly thanks to the emergency services organisations' implementation of different media management practices such as providing safety training for media personnel, facilitating media representatives' direct access to emergency headquarters and escorting journalists on location (Country Fire Authority of Victoria, 2002). A memorandum of understanding recently signed between ABC Victoria and various Victorian emergency services organisations is another such example. This document is the end product of the many years that local ABC radio has been collaborating

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[1] A report by the Emergency Services Commissioner, Bruce Esplin, indicates that the DSE did not follow its own policies for prescribed burns when they started the fire. His full report is available on the DSE website at www.dse.vic.gov.au

A true representation, or a media construction?

successfully with various emergency services organisations. This collaboration has encompassed reporting warnings and other relevant information during incidents, and the running of educational media campaigns such as the Fire Awareness Day, whereby local ABC radio stations across Victoria help educate listeners about fire prevention and how to protect their homes.

Using the recently published report of the Council of Australian Governments (COAG) *National Inquiry on Bushfire Mitigation and Management* (Ellis et al. 2005), along with interviews with journalists and emergency services personnel, the aim of this paper is to reflect on the deeper cultural issues encountered in bushfire representation and media involvement in this process. Such a reflection is relevant in light of the recent call, and ongoing attempts by researchers and emergency organisations, to introduce the idea of 'Living with Fire' whilst simultaneously generating a new public discourse about bushfires in Australia.

Learning to live with fire

Andrew Campbell's paper *Learning to live with fire* is a call for a new understanding of bushfires in Australia. Fire should not be perceived as a "terrifying aberration, an ineluctable, unpredictable Act of God", instead we should start to see it as "an inherently Australian phenomenon that goes with the territory" (Campbell 2003:244).

The call for a new understanding of bushfires is not just about further knowledge and scientific research. Rather

it is about challenging current cultural constructions and media (mis)representations of bushfires.

"The typical media portrayal of bushfires as 'disasters' reinforces the desire to wage war against fire, and failure seems only to spur on heroic attempts to achieve a total victory" (Bowman, 2004:11).

Campbell himself, when explaining the poor public understanding of the difference between hazards and risk and its overall lack of respect for fire, argues that "The pervasive formulaic media images and clichés compound such ignorance" (2003:246).

The idea of 'Living with Fire' is further elaborated in the COAG Report (Ellis et al. 2005). If you teach Australians to live with fire and see it as a part of the natural environment they are not only more likely to know how to prepare for it, but will also be more able to survive the inevitable fire when it strikes, and may also better understand fire management and mitigation practices (Ellis et al. 2005: xii).

The COAG inquiry

Established after the severe 2002–03 fire seasons, the COAG inquiry aimed to examine the accumulated knowledge and experiences concerning bushfire fighting and management practices in Australia. One of the main issues for the inquiry was to propose methods of managing bushfire fighting resources and knowledge on a national basis, while evaluating the effectiveness of current management practices (Ellis et al. 2005:243). As a way of achieving its goal the inquiry proposed a revised risk-management framework. The report defined this as the 5Rs framework:

• "Research, information and analysis;

• Risk modification;

• Readiness;

• Response; and

• Recovery" (Ellis et al. 2005: xiii).

Each of the 5Rs calls for particular actions to be taken. Together they are designed to provide an holistic or comprehensive model for bushfire mitigation and fire management in Australia.

The first recommendation in the COAG inquiry report is for school-based bushfire educational programs (Ellis et al. 2005:xii). There is no doubt that a well-organised and national education program may be a good strategy to adopt. Yet, the main question not asked by the COAG inquiry is where do people actually learn about bushfires? Where does most of our knowledge about bushfires come from? How have our current knowledge, imagery and popular beliefs about bushfires evolved? How could a school-based curriculum compete with the dominant mass-media based discourse about bushfire?

Moreover, what are the other means, in addition to school-based programs, that may be used for integrating new knowledge or creating a new public discourse about bushfires?

Media myths and disaster mythologies

The media have repeatedly been accused, by emergency services and some researchers, of generating fears and 'myths' about bushfires and other natural disasters (Goltz, 1984; Blong, 1985; Quarantelli, 1989; Marshall, 1994; Country Fire Authority of Victoria 2000). 'Exploding houses', 'fire storms', 'fire balls', 'panic evacuations' are some of the classic media myths that emergency services have been working hard (and some may argue unsuccessfully) to dispel.

Clearly, the media may not be the only source of such ignorance. It is possible to argue, for example, that 'disaster mythology' in relation to bushfires is already built into the popular images of fire fighting itself. Chris Carson from the CFA in Victoria, who manages the organisation's wildfire education program and who has recently developed a new information-flow approach designed to provide information to the public during the onset of disasters, locates the problem with the current discourse on bushfires within the culture of emergency services agencies.

"We, as an emergency service, have built our own problem here. For example, one of the chief problems we have in educating people is a very strong attachment to all the disaster mythology. 'I can't survive it', 'the fire moves faster than a speeding locomotive', 'houses explode'. These are all myths. Unfortunately, the language we've used to sell our stories to the media has been the language of disasters in the past. So that's how the media chose to communicate our stories on a number of occasions. Ok it's dramatic. It sells air space. Fine, but we own that, we pumped out our own heroism, as an organisation, for a long time and I'm

not interested in that anymore" (Chris Carson, personal communication, 24.02.2005).

At the same time it seems that such self-reflections are rare. It is almost taken for granted by emergency agencies and researchers alike that it is media coverage and the televised descriptions of bushfires that reproduce mythologies and the misleading views of bushfires and their role within the Australian environment. The contribution of emergency organisations to this problem is not normally acknowledged.

Apart from the issue of better 'working relations' between emergency services organisations, scientific knowledge and media representations of bushfires, what is missing from the current debate about the media is further data about how individuals and different social groups gain their understanding of such events. How does a particular media report or a specific media treatment of a particular incident shape individual or collective perceptions and understandings of bushfires? As Quarantelli indicates, in the US there is a lack of data concerning who listens or watches what, with whom, where and for what purposes during an emergency event or a disaster (1989:15).

Interestingly, the COAG report acknowledges that despite the importance of educational programs, innovative use of web-based technologies and traditional community outreach programs, for many Australians it is still the mass media that are the main source of information about bushfires. However, this important reference to the media is presented as problematic in the sense that the media, "quite naturally, tend to focus more on the dramatic than the evidentiary. This can result in misconceptions that are both persistent and dangerous" (Ellis et al. 2005:170).

The debate, therefore, is not just about semantics. The main issue for emergency services organisations and disaster prevention and mitigation programs is achieving a desirable behavioural change. Public health, education

The bushfire – an inherently Australian phenomenon that goes with the territory.

The persuasive formulaic media images and clichés compound poor public understanding of hazards and risks.

and risk-communication campaigns are measured against the effectiveness of different means of reaching the public and generating a particular behavioural change (Rohrmann, 2003:116). These are extremely important issues. Yet, it is interesting to note that those who accuse the media of generating misconceptions, or broadcasting misleading information about bushfires, assume that there is a clear linkage between the televised imagery and the behaviour of the public.

The media, in the most generic sense of the term, have important effects on the social, political and cultural aspects of our everyday social life. Academic literature and various Media Effects theories relating to the broader cultural influence of the media, or in more empirical case studies in relation to disasters and warning systems, indicate the complexity of the relations between media text, and its production and interpretation by a diverse audience (Carter, 1979). An influential work in this context is that of Denis McQuail, who provides a comprehensive study of diverse mass media, including new media, and their different effects and meanings for the audience (McQuail, 2005). Such theories demonstrate that media effects, intended and unintended, are quite diverse and hard to pin down in relation to specific social behaviours.

Yet, within the current discourse media images and media coverage of bushfires (and other disasters) are presented as both the *symptom* and the *disorder*. As a symptom, media images are perceived as an example of common mythologies about bushfires that may often resonate with the public misconception. At the same time the view of the media as a disorder, is exemplified by the claim that the evocative language used in the media may steer individuals to act, or fail to act, in ways that may put their life and property in danger and may therefore lead to injuries and death.

"Once you've got people understanding bushfires to be a 'fire storm' why would you believe you could defend yourself? Why would you believe you could protect your house? If you think houses explode, why would you bother starting to prepare yourself? You'll take your risk on the road" (Chris Carson, personal communication, 24.02.2005).

Media management

It is in the context of communicating risk to the public that the Country Fire Authority and the Department of Sustainability and Environment in Victoria have established information units that are activated under certain conditions. The Information Unit's objective is to deliver accurate and timely messages to the communities threatened by a particular fire and to encourage the residents to respond appropriately to the specific threats they are facing (Carson, 2004). This approach challenges the traditional media liaison practices used by emergency services organisations by arguing that "Communication with the media is not an objective, but a tool for achieving the objective of reaching those at risk" (Carson, 2004:70).

Such an operational approach makes a lot of sense. It also supports decentralising the information about an incident by giving the local Incident Controller the authority to decide which information should be released to the public. This may prove quite an effective way for providing the public with the right information at the right time (Godin and O'Neill, 2005). However, at the same time this operational approach to the media lacks a broader understanding of the way media constructions of such events may generate public debate and understanding, and influence policy makers and the emergency services organisations themselves (Olson et al, 2005).

Media constructions

The public and media discourse about bushfires is never a mere reflection of what is 'out there'. Rather

the media are social actors actively constructing reality (Quarantelli 2002).

"Individuals seldom acquire that knowledge [about disasters] from personal experience. The Mass Communication (MC) system constructs that reality for most people, including emergency managers, disaster planners and crisis decision-makers. For example, are disasters the 'result' or the 'fault' of what? The sequence in disaster research has gone from characterizing them as Acts of God, to Acts of Nature, to Acts of Human Beings. In MC stories, all these tend to be used, with the particular frame structuring how the story is presented, and what will provide the agenda for the attention of readers/viewers" (Quarantelli, 2002:3).

As Quarantelli further reminds us, 'popular culture' is another important site where images and understandings about disasters are constantly produced (2002).

The current discourse about bushfires is fuelled by the media's tendency to focus on the most dramatic aspect of the incident. For this reason, some may argue, the public may get the wrong perception of such events and may not fully understand their effects. Yet, it is not often clear how the public responds to, or interprets these media images. It is important to remember that for a typical viewer (and one may argue for journalists reporting such incidents) dramatic coverage and the imagery of an ongoing incident is only one set of images among a never-ending flow of similar images of disasters, locally and internationally, real and fictional.

Clearly, the media are not ignored. Most emergency services organisations and government offices run media departments and regularly use trained public relations personnel who monitor and actively manage their relationship with the media. In this sense, government offices are very careful about their public image as projected in the media – but this can be counter-productive for the emergency services. Openness to the media, rather than further or more effective 'management' of the media, may be a better approach for future collaboration with the media.

Asa Wahlquist, a rural writer with *The Australian*, recalls how during 1994, when she worked for *The Sydney Morning Herald*, an article she wrote lead to a public debate about hazard burning. This public debate, she argues, eventually lead to some legislative changes that enabled fire agencies to conduct more fuel reduction burning, and gave them much more power over planning and building control issues.

"In 1994 we had lot of bushfires around Sydney and what had happened was that a lot of people moved to areas near to bushland and they had really objected to hazard reduction burning. I had this interview with Phil Koperberg [Commissioner New South Wales Rural Fire Service] and he basically said that one reason we have all these terrible problems with bushfires is that because of community

resistance, we weren't able to burn off the way we wanted to when it would have been safe to do this.… And that really started a huge community debate about how we managed bushfires, and in this case the criticism was not of the bushfire people but of the people in the community who said that we don't like fire cause we don't like smoke, we don't think it is a good idea. Because of that debate, the laws in NSW were changed and the bushfire people got much more power to do hazard reduction burning and that sort of thing" (Asa Wahlquist, personal communication, 16.03.05).

Media and disasters

The role of the media in reporting about bushfires before, during and after incidents is an extremely complex issue. Bushfires, especially the more dramatic and devastating ones, are presented as major media events. The media depiction of such events, some may argue, is somewhat different from actual bushfires, or from bushfires as actual events. Yet it is often hard to make such a distinction as even people who are close to the event itself, including the emergency services, may use or be influenced by the media reports. It is not very useful, therefore, to look at media constructions alone or alternatively to study the actual event while disregarding or ignoring media participation, construction and involvement in it.

The challenge, which the COAG report, despite its many achievements, fails to acknowledge, is that the media plays a significant role in generating debate but also understandings about 'Living with Fire'. It is not enough to talk about media myths or misconceptions, nor is it likely to be possible to create a media environment where there is a focus on the presentation of 'clear and accurate reports', which meet the needs of emergency organisations. This is not simply an issue of better operational information-flow, nor is it about public relations and better media management practices. Rather, what is needed is a better understanding of how media institutions operate in relation to, and during, actual disasters.

Conclusion

The first stage of our research project involving interviews with information and media managers from within emergency services organisations and media industry professionals is beginning to uncover how these two groups operate and understand each other. There is an indication that many of these individuals understand the importance of developing good working relationships with each other. There is still, however, a debate about how much access should be given to journalists and media representatives, and how the dissemination of information may aid or harm disaster management efforts and public safety.

An important reference to the media in the COAG report is the call for each State and Territory to

formalise non-exclusive agreements with the Australian Broadcasting Commission as the official emergency broadcaster (Ellis et al., 2005:136). At the same time the report has little to say about how the media may be integrated into planning and preparation processes, or how they could be actively involved in achieving the desired goal of teaching Australians about 'Living with Fire'. From this perspective, we argue, the COAG report has a precarious blind spot. There is a need to rethink the media's relationship with the emergency services and to address it in a more dynamic and creative way than is currently the case. Also, there is a need to consider COAG's call for a national educational strategy based on 'Living with Fire' when it conflicts with the dominant representations of bushfires in the media.

The imperatives of the news media, which are aligned to the creation and retention of audiences, need to be understood and taken into account. At the same time there is a need to better understand how individuals and communities use the media to satisfy their requirements for information about bushfire preparedness prior to and during ongoing incidents.

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Authors

Dr. Erez Cohen is a social anthropologist and a postdoctoral fellow in the department of media studies at La Trobe University. He is currently conducting Bushfire CRC funded research on the relationship between emergency organisations and the media in Australia.

Dr. Peter Hughes lectures in Media Studies at La Trobe University. His research and teaching focuses on documentary and new media. He is co-author, with Ina Bertrand of *Media research methods: institutions, texts, audiences*. Basingstoke, New York: Palgrave (2005).

Assoc. Prof. Peter B. White is conducting research on the social implications of new media and telecommunications policy. He is the Director of the La Trobe University Online Media Program which conducts research into the uses of new media. Peter directs the Media Studies Program's television industry training program in Vietnam.

AJEM BOOK REVIEW

by Peter Arnold, Director Emergency Management Liaison, Emergency Management Australia

Perry, Ronald W. & Quarantelli E.L. (Eds) 2005 What is a Disaster? New Answers to Old Questions.

**Xlibris Corporation (International Research Committee on Disasters).**

ISBN: 1-4134-7985-5

What is a disaster? Prior to starting the review, I consulted the Macquarie Dictionary which defined a disaster as "any unfortunate event, especially a sudden or great misfortune." In emergency management terms, this is not terribly useful. The question is clearly not a simple one.

What is a Disaster? New Answers to Old Questions does not in fact attempt to give a definitive answer, at least not in the form of an agreed definition of disaster. The intent of the book is as much an exchange of ideas as an examination of meaning.

Structurally, *What is a Disaster? New Answers to Old Questions* is a book of three "d"s: disaster, definitions and debate. The book is different to many academic studies, in that the first two parts each constitute what may best be described as a debate. In each part, four authors present and explain their definition of disaster. A "discussant" then presents a critique of each paper and the authors respond to the critique. A number of interesting points were raised in the response, so the debate approach did work. Finally, the third part reviews the debates and examines potential for future work in disaster research.

Several authors make the point that the literature is broadly divided into studies that focus on the practical characteristics of disasters, and those that focus on the theoretical underpinnings of
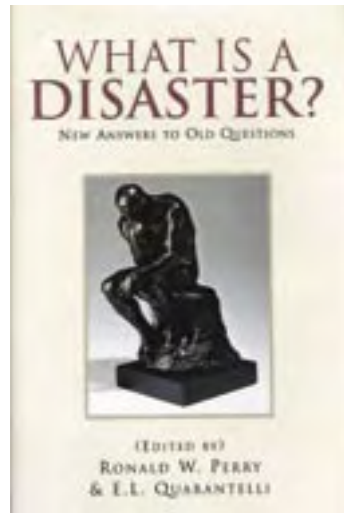
disasters as process. The book is definitely in the latter category. Most of the authors are sociologists or researchers in the disasters field. This is not a criticism as the editors are clear in their aim of exchanging information and the work is successful in meeting that aim.

The authors and discussants were deliberately chosen from a wide range of academics from many different social science contexts and national backgrounds. It is interesting that a considerable degree of consensus is exhibited in the overall perception of a disaster, while it may also be argued that the differences indicate that further research and debate is required.

In the first debate David Alexander, Susan Cutter, Rohit Jigyasu and Neil Britton offer their papers to Wolf Dombrowsky as discussant, then reply to his critique. Barton offers a social science perspective on disaster; Cutter is less concerned with theoretical issues than with implications for social action, while Jigyasu deals with disaster in a perceptive context. Britton concentrates on blending the academic with the practical and he cites Australian and New

Zealand governmental concepts. Dombrowsky's critique I found a little circuitous, with a strong emphasis on sociology and scientific method, but he stimulated four very interesting responses, which clarified the papers in a number of areas.

The second debate sees Allen Barton, Arjen Boin, Philip Buckle and Denis Smith present their papers, with Robert Stallings as discussant. Buckle and Smith explore practical definitions, while Barton and Boin offer analytical definitions and examine the critical issue of classification. Stallings discusses the practical versus analytical approaches before raising points with each paper and emphasising the importance of the question. The responses cover the issues raised.

In his review paper, Perry agrees that "A social science definition can also reasonably differ from a mandated or policy definition."[1] Perry also argues that classification systems provide a means of defining disaster more precisely. The final paper by Quarantelli differs from the rest of the book in that it broadens the discussion and puts the case that improvements in disaster research requires going well beyond theoretical issues. He covers some theoretical issues, but focuses on methodological and research aspects.

What to make of this book? I actually think the title is slightly misleading – 440 odd pages about attempting to agree on a definition would be turgid prose indeed. The book is more a debate about the theory of disasters from a social science perspective and in that respect it is both interesting and serves a very useful purpose. Practitioners and policy makers alike would gain substantially by entering the debate.

1 Ronald Perry, "Disasters, Definitions and Theory Construction", in *What is a Disaster? New Answers to Old Questions* p319.

Australian Journal of E
February 2006 – 20

To cast a look across the contents pages of the 79 issues of this publication over the past 20 years, anyone would be forgiven for imagining that Australia is not just very active but is the hub of global emergency management action. Such is the depth and breadth of subject matter and topics that have been brought forward for discussion. Alas we are down-under to most of the world and only a small player on a huge stage.

The *Australian Journal of Emergency Management* was first published as a six page newsletter in March 1986, with the name of *The Macedon Digest*, to fill an identified "information void within the counter-disaster community." It was recognised that a need existed for a publication to provide summaries of activities, research and meetings to "operatives, planners, trainers and researchers in the counter disaster/ civil defence field." According to this first issue, "the success of the *Digest* will depend to a large extent on reader reaction; contributions and comments on content will

be welcomed, and will help the *Digest* to evolve into a useful periodical for all who are involved in the humanitarian field of disaster management." These sentiments still hold true and continue to have relevance 20 years on.

In September 1988 a sub-title was added – The *Australian Newsletter of Disaster Management* – and the journal doubled in size. Due to continued support from EMA and the industry, the journal had developed into a substantial black and white publication by 1994, the year of the first special issue, Environmental Health and Disasters. Also in that year a survey of subscribers was undertaken with the findings indicating the journal was considered a valuable source of information that reached a significant proportion of emergency management personnel. A survey of readership conducted in 2004 indicated that the journal continued to maintain its high reputation as a comprehensive, multi-disciplinary publication, regarded by its readership as a reliable and

credible source of information covering the full spectrum of emergency management.

By 1995 the title had changed to The *Australian Journal of Emergency Management* and a special issue focused on ways that the International Decade for Natural Disaster Reduction had an impact on Australia and the Pacific. By 1997 *AJEM*, as it had come to be known, had undergone a change in appearance with a full colour back and front cover, which by 1999 had developed to full colour throughout.

International as well as Australian disasters have always received attention in *AJEM* which has published information on such incidents as the Port Arthur shootings, ice storms in Canada, floods in Katherine, Northern Territory, the tsunami disaster in Papua New Guinea, the Thredbo landslide, and the Auckland electricity supply disruption. More recent coverage includes the Indian Ocean tsunami, bombings in Bali, and *Hurricane Katrina*, which appears in this issue.
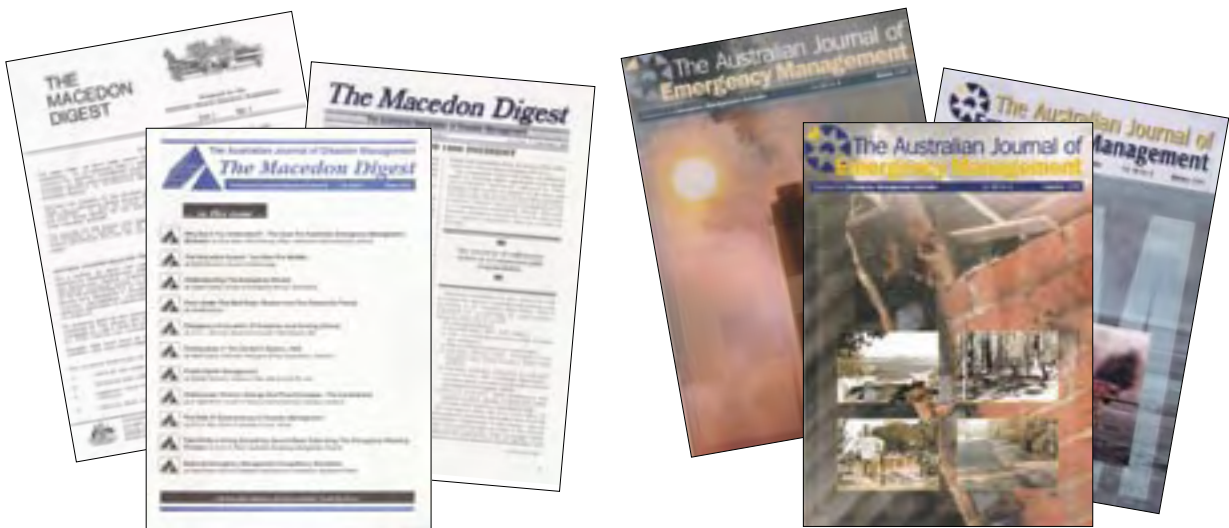
mergency Management
th anniversary issue

A change in editor and editorial advisory team in 2002 resulted in a new look and direction for *AJEM*. Over the last three years the journal's profile has been enhanced through its inclusion on the Commonwealth Department of Education, Science and Training Register of Refereed Journals. *AJEM* is indexed by the National Library of Australia's Australian Public Affairs Information Service (APAIS) and has recently been accepted for selective indexing by the Attorney-General's Information Service (AGIS). Access to *AJEM* articles is made available through the Royal Mebourne Institute of Technology Informit service.

In 2004 there were two special issues of *AJEM* developed through partnership arrangements. In August, in conjunction with the Department of Agriculture, Fisheries and Forestry, an issue dedicated to the role of government and industry in agricultural emergencies was published. This was followed in November 2004 with a special edition featuring articles from the New Zealand Recovery Symposium, conducted in July of that year. Special issues dedicated to contemporary themes continue to have a role in the emergency management industry. A recent example was the May 2005 issue on counter-terrorism and emergency management.

We have seen some highly esteemed emergency sector participants both as content contributors and as members of the editorial advisory committee. Rather than name any, EMA wishes to record sincere thanks to every one of them for their professionalism and their genuine concern that this country has a robust, forthright and independent forum for expression of views on ways to ensure future generations can enjoy living in 'safer sustainable communities'.

While *AJEM* has come a long way in the past 20 years, its commitment to providing access to information and knowledge for the research community and practitioners of emergency management remains unchanged. EMA is excited by this milestone and proud to continue such a significant publication into the future.

NOTES FROM THE FIELD

Macedon Ranges February 1983
by Margery Webster, Director Education & Training Emergency Management Australia

These notes are from Margery Webster's experience as a Community Development Officer and local resident in the aftermath of the Ash Wednesday fires in the Macedon Ranges. At the time the fire impacted she was working in aged care services with the Shire of Newham and Woodend. In the aftermath of the fire she was funded by the State Government to work with fire affected residents of Woodend and those who had evacuated to Woodend from the Macedon area. The government funding ceased after nine months. Recognising the community recovery was still far from complete the Anglican and Uniting churches employed two community workers to continue working with fire affected people across the Macedon Ranges for a further 12 months. Margery was one of those workers.

February 16 1983 will long be remembered as Ash Wednesday. It was on this day that devastating fires, reported to be the worst since Black Friday 1939, burned across eastern Australia.

One of the worst affected areas in Victoria was the Macedon Ranges, where approximately 500 homes were destroyed and seven lives lost. A tree brushing against a power line in East Trentham started the fire which travelled through the Wombat Forest, initially avoiding Woodend and Macedon. However, a wind change resulted in the fire turning back on itself, jumping the highway and beginning its path of destruction through the Macedon Ranges. The fire eventually ran out of fuel after reaching the 'firebreak' caused by a fire which had occurred just two weeks earlier.

The environment

Early in the 20th century, Mount Macedon was a retreat for affluent Melbournians escaping the summer heat. Many of the beautiful homes and gardens were built to house the ambassadors to Australia from various countries. In those days Macedon, located on the lower slopes of the ranges, accommodated many of the staff who provided services to the residents of Mount Macedon. The popularity of the Macedon Ranges declined in the middle years of the century; however this situation was reversed in the 1970s, as the opening of the Tullamarine International Airport led to employment opportunities, and improvement of the road network. This development enabled easier access to this attractive garden community, surrounded by bushland. Pressure for sub-division together with a building boom during the 1970s and '80s led to a rapid increase in population, with people transferring from the Melbourne suburbs.

February 16 1983

As I crossed the road to the bank from my workplace at the then Shire of Newham and Woodend in the early afternoon of February 16, the temperature was well over 40 degrees Celsius and there was a strong north wind. I remember likening the experience to the opening of an oven door. In the early evening fire engines rolled into Woodend from small communities in the north, from as far away as Swan Hill. Later in the evening, following media reports of the situation worsening, the Shire switchboard was overwhelmed with telephone calls from all over the world including ships at sea, enquiring about the safety of relatives and friends. As the Shire Welfare Officer, I was asked to operate the switchboard, there was little information for me to pass on as all roads to the south were closed and telecommunications to the area had broken down.

Next morning I learned of the tragic loss of life and property, and the chaos that ensued as people tried to flee their burning homes. Some managed to escape to Melbourne via the Calder Highway while it was still passable, however as the fire came closer, others travelled north over the top of the mountain. Smoke restricted visibility, resulting in some people veering off the road. Many evacuees were directed to the designated evacuation centre in the Kyneton Shire Hall, others went to relatives and friends to the north and south of the ranges. In Macedon, the pub was packed with people (and pets) unable to escape the fire. As the fire passed through, fire fighters trained the hoses on the pub to save those inside. With such a large number of homes destroyed the pub became the community refuge for many days. The table mats in this pub still tell the story of February 16. With typical Aussie humour locals spoke of the work of the devil—three churches burned and two pubs left standing.

Recovery services

The State and local governments immediately co-operated to establish an area co-ordinating committee and a recovery co-ordination centre at the Shire Offices in Gisborne. Early actions

included the sourcing of caravans to enable people to stay in the area. The football oval became packed with caravans. Gradually, people took their caravans and returned to be on their blackened blocks to begin the enormous task of re-establishing their homes, family and community life with some sense of normality. Disaster relief payments enabled this to happen. Although the burnt environment was a constant reminder, they felt comforted to be amongst people who had shared a similar experience. A psychiatric team was located in the area, in a purpose built caravan clearly marked as the "psychiatric service". This was underutilised for two main reasons; firstly people did not want to publicly identify themselves as "psychiatric patients"; and secondly it was introduced too early. At that time people were more concerned with rebuilding their homes than focusing on their emotional wellbeing.

Following some early difficulties for people accessing resources and services, a 'one stop shop' was established at Drusilla, the Mount Macedon property owned by the Marist Brothers. Apart from the pub where people had sheltered on the night of the fire, this was the only community meeting place until a large portable building was located at the local sporting reserve.

The State Electricity Company first denied all responsibility for the fire but finally agreed to compensate residents. Insurance assessors were subsequently located in the area to assist clients with their claims. Visiting Rural Finance Officers assisted farmers to re-establish their farms by organising grants for replacement fencing.

Community development

Apart from aged services and churches there were no established social welfare services in the affected communities in 1983. The nearest Community Health

Centre was some 30 kilometres away in Sunbury. Unaccustomed to welfare services, residents were not responsive to external welfare and psychiatric services suddenly appearing in their communities.

As the community gained strength they became frustrated with perceived inequities and a lack of action from government. Feelings of "them [the authorities] and us" emerged leading to the first of many public meetings. At the first public meeting two women were elected to co-ordinate an action group staffed by community volunteers who would work out of a caravan supplied by a service club. The role of the group was to ensure the correct information and resources were shared. The action group became a "watch dog" for the community and the voice of the community when difficulties arose with service providers, government officials and professionals. All of the action group meetings were held in the pub, a place of solidarity which had protected so many people on the night of the fires.

The needs of the community in the early days after the fires was of a practical nature—clothing and household goods, assistance with clearing blocks, locating and positioning caravans, restoration of income, gum boots and tools to commence re-establishment of gardens, and advice from local authorities regarding planning and building regulations.

Following criticism of external service providers, local residents were employed as "frontline" workers providing information and support to meet these needs. They built trusting relationships with the community, which enabled them to facilitate psychosocial support if required. A number of skilled professionals were available to support the "frontline" workers and to accept referrals. These workers recognised the importance of the action group to community recovery and began to work closely with

them. A Community Development Officer initiated street meetings, identifying a community leader from each area, and developed a weekly newsletter to share information with other residents.

Just prior to the first winter of living in caravans I was introduced to a community theatre producer who had worked with a number of UK communities that had been impacted by social and economic change. He convinced me of the value of working with a community to interpret their experience and express it through community theatre. I felt this approach could be a cathartic experience for the affected community but needed to speak with community members to get their reaction. The reaction was positive and following a community meeting, funds for the project were secured. Throughout that long winter, the community theatre group met in the portable building. Children were encouraged to recount and act out their experience at an after school program. This reduced the time spent in the caravans and relieved the pressure on parents. The community theatre project culminated in a parade to the top of Mount Macedon, where the children slayed a "fire eating dragon". A documentary film, *Phoenix Rising*, was made of the project and shown on the ABC. Following this event many parents reported their children were more settled and sleeping better.

As people began to rebuild their lives, connections were made with other fire affected communities. In 1984 the cricketing fraternities of Macedon and the fire affected coastal community of Aireys Inlet decided to play for "The Ashes" (ashes were collected from both areas). Each year around February 16 these two communities still come together to play for "The Ashes", rotating the location between the two communities.

Resilience

The role women played in supporting both their community and their families throughout this time left me with great respect for their care and resilience.

At the family level, it was most often the women who expressed the pain, encouraging the rest of the family to seek professional help. Organising the rebuilding and other re-establishment issues were often left to the women, especially if the male of the household was rendered ineffective due to unexpressed grief. This situation sometimes caused friction between partners.

I remember hearing an older member of the community recount her story of the night of the fire. Unable to leave, she sat alone throughout the night as the fire raged around her house. She could hear her young next door neighbour entreating her children to sing. When the young woman stopped singing the children once again became afraid and started crying, the mother would encourage them to continue singing. This went on throughout the night. The following morning, the elderly woman discovered that the woman had tried to escape with her children in the car, however a large burning tree fell across the driveway, blocking her exit. The mother led her children into the dam, grabbing the car rugs to cover them and commenced the singing routine. This story is reminiscent of wartime England when women sang to their children in the air raid shelters in an attempt to drown out the fearful sound of bombing. Many war experiences were recalled at this time, such was the intensity of this recent event on survivors' lives.

Another elderly woman had moved to the Macedon Ranges with her retired husband shortly before the fires. She subsequently discovered her husband was suffering from dementia. She did not have family support. Her husband's dementia worsened with the disaster experience, but she protected his dignity in the most extenuating circumstances. She explained that he was a very proud man, not accustomed to seeking outside help. Mutually agreed strategies were used to support this woman in ways useful to her.

Many parents spoke of their children "knowing what to do" because of what they had learnt at school. They described how children urged them to wear stout shoes and dress in natural fibres rather than synthetics as they planned their escape. Some of these parents spoke of feelings of guilt as their children were better informed than themselves of the actions they should take in such a crisis.

Lessons learnt

Many lessons were learnt from the *Ash Wednesday* experience, contributing to the growing body of knowledge about the recovery process. While there are broad community development principles and guidelines to assist community recovery workers and professionals, each community and its experience is different. There is no blueprint. However, supporting existing services in the community will lead to a more sustainable community recovery.

Lessons learnt from the Macedon fires include:

- effective recovery is best achieved when the process is managed by the community itself with community leaders and members being supported by relevant professionals.

- recovery services need to be co-ordinated and located in the affected area/community in a 'one stop shop'.

- community recovery is akin to grief and loss, it is a long-term process with ups and downs and takes longer than many people expect.

- people can generally make good decisions about their recovery if they are given appropriate information and resources.

- introducing well meaning and often mandated external services requires good sensitive management.

- the early stages of disaster recovery provide golden opportunities for change, particularly for introducing mitigation strategies. This is often unrecognised as people yearn to replace what they had before.

- planned press coverage over an extended period can support recovery. Affected people are often comforted to know they are not forgotten.

Lessons learnt from emergencies such as *Ash Wednesday* have contributed to a range of national resources to support community recovery including:

- Recovery Manual;

- Guidelines for Psychological Service Practice;

- Guidelines for Disaster Management Practice; and

- Community and Personal Support Services.

These can be found at www.ema.gov.au.

AJEM BOOK REVIEW

by Roger Jones, TEM Consultants Pty. Ltd. and member of the AJEM Advisory Committee

Bell, Travis ed. (2005) *Queensland State Emergency Service: 30th Anniversary Book*, **Counter Disaster and Rescue Services, Department of Emergency Services, Queensland**

Keys, Chas (2005) *In times of crisis: the story of the New South Wales State Emergency Service*, **Focus Publishing, New South Wales ISBN 1 920683 58 5**

Given the emphasis that has been put on the role of volunteers in Australian emergency services since the United Nations declared *International Year of Volunteers* in 2001, and in particular the November 2005 edition of AJEM showcasing the work of volunteers, it is gratifying to see the origins and current activities of two long-standing volunteer emergency services being documented. The two books tell similar stories however in very different styles and perhaps targeted at quite different audiences.

Commemorating the 30th anniversary of the Queensland State Emergency Service (QSES), Bell's soft-cover "snapshot" (the term used by former director Ken Cullum in his brief introduction) is clearly aimed at the volunteer members of that organisation. It broadly traces its origins from the State Civil Defence Organisation in the Cold War era to the Service's formal establishment following the enactment of the *State Counter Disaster Organisation* Act (SCDO) in 1975. The text details its recent history and its current role and activities.

The book is interspersed with recollections of many former and present officers and members. Bell includes a chronology of State Directors and ministers responsible and lists all of the recipients of the Emergency Service Medal dating back to 1999.

Bell gives brief accounts of a variety of incidents, operations and rescues in which the Service has been involved, and outlines how the Service's roles and functions have evolved over time.

Keys' account of the New South Wales State Emergency Service (NSWSES) covers somewhat similar ground but, where the Queensland publication is patently a "commemoration", its NSW counterpart purports to be, as its dust-jacket indicates, "at once a history, a celebration, a critique and a search for the essence of the SES". Where Bell's target audience is primarily the QSES volunteer, Keys' hard-cover book is more likely to find an Australia-wide audience in public administration and emergency management specialists as well as students of the volunteer emergency services.

The first quarter of the book offers a detailed and analytical history of the development of the NSW organisation, and deals frankly with the many issues and problems in leadership, policy and practice which have hindered the organisation at various times (issues and problems which it shared with many of its other State and Territory counterparts). Most of the second quarter is devoted to studies of the three major functions currently performed by the NSWSES—flood management, storm damage response and operations in support of other services. Each study offers brief accounts of a number of critical incidents and operational responses. In this sense, the first half of the book presents an historical perspective and critiques the past and current practice of the Service.

The last half of the book represents both "celebration" and "a search for the essence of the SES". Keys presents a variety of unit stories and recounts outstanding individual performances, an upbeat picture of today's SES (with appropriate credit being given to Hori Howard, its Director General in the critical 1989-2001 years). Keys provides an analysis of what it takes to be an effective member of the organisation and demonstrates the need for continuing government and community support. The book is well indexed, and illustrations and photographs complement the text.

Keys' book includes 44 pages of appendix listing the volunteers who died on duty, those who have been award recipients, group and unit citations, and staff and unit memberships as of 2005.

Both publications tell of organisations which had their origin in the civil defence concerns of the 1960s but which are now part of a multi-agency, comprehensive and integrated approach to broader community safety issues. The State-based stories they tell are valuable and informative in themselves, but together they point to an evolution in disaster and emergency management which ranks as a uniquely Australian achievement.

EMA Research & Innovation Program

The Emergo Train System—will it work in Australia?

How can a hospital or health service test its procedures for major incidents, involving multiple casualties, without closing the front doors of hospital emergency departments during a testing exercise?

This real dilemma for hospital managers has led to a pilot study to test the effectiveness of the European Emergo Train of training and testing hospital staff and procedures following a mass casualty event in Australian conditions. The study was sponsored jointly by Emergency Management Australia (EMA), under its Research and Innovation Projects Program, and the Department of Health, Western Australia.

The Emergo Train was initially developed 17 years ago by the Centre for Research and Education in Disaster Medicine (KMC) at the University of Linkoping, Sweden,

and has since been adopted in many countries. An educational tool for training and testing preparedness for major accidents and disasters, the system uses the principle of 'learning by doing' (Lennquist, 2003). It involves magnetic symbols representing patients, staff and resources; movable markers indicating priority and treatment; and a large patient bank with various injuries. A protocol has been developed to identify time taken for various clinical interventions and likely outcomes. Its major focus is on real time management of an incident.

Magnetic boards are used to illustrate the geographic area, resources for transportation, the hospitals and departments involved, and the scene in large-scale magnification. Patient symbols are placed, or delivered to the scene

in real time. The system is not dependent on any specific doctrine or way of working, but can be used in any organisation and with any methodology or procedures.

The authors undertook an Emergo Train Senior Instructor course in Sweden in October 2004, and visited the Centre for Disaster Management at Coventry University, which has extensive experience in using the System within British hospitals.

The Emergo Train purchased was amended to reflect Australian conditions and systems before testing commenced. After a familiarisation exercise at Sir Charles Gairdner Hospital in Perth, two further exercises were held in Western Australia in March and April 2005. The first was held at the 130-bed Bunbury Regional Hospital involving a two-bus

A "patient" arrives to the operating theatre and "staff" are being allocated to perform the surgery.

Ambulance and hospital staff working in the casualty clearing post.

crash. The second was centred at Royal Perth Hospital (an 855-bed tertiary hospital) and involved a rail bridge collapse with 116 casualties. The exercises, which included pre-hospital and hospital management with ambulance and hospital staff participation, tested a range of incident scene and hospital management aspects, including:

- triage and evacuation at the site;

- triage, clinical and resource management, plus transportation triage, at a casualty clearing post;

- ambulance resource management;

- triage, clinical and resource management at an emergency department, theatre and intensive care unit; and

- overall hospital management of the incident, including bed management.

All participants responded to the evaluation questionnaire, stating they strongly agreed (61 per cent) or agreed (39 per cent) that the exercise was personally beneficial for them. Eighty-seven per cent stated they felt more confident in their response to a disaster situation and the same number also indicated that aspects of their health service plan could be improved. The remaining 13 per cent indicated there were possible improvements to their plans.

Ninety-seven per cent of the participants indicated they either strongly agreed (55 per cent) or agreed (42 per cent) that the Emergo Train was an effective way to conduct a testing and training exercise. One hundred per cent of respondents indicated they would recommend a colleague to participate in a similar exercise and that the exercise should be repeated in one to two years time, with many suggesting the exercise should be held even twice a year.

One emergency department director stated he had been involved in many different types of exercises, but felt this "…was the best one yet." A trauma surgeon suggested that more of this type of exercise was needed for the whole of hospital approach. Comments made during the evaluations and debriefs provided suggestions on how to further improve the conduct of the exercises.

While such exercises can be resource intensive, through participation by players and exercise control staff, the benefit to testing procedures and to training of staff (without the expense of a field exercise) can be highly valuable.

Following the success of the pilot study, an exercise program is now being developed with a number of hospitals throughout Western Australia. Additionally, ways are being examined into how the Emergo Train can be used at departmental level, rather than

for whole-of-hospital as occurred in these exercises, as well as other scenarios such as chemical, biological and radiological, bombs and blasts, and burns incidents.

A "show and tell" demonstration and workshop was held in June 2005 at the EMA Institute involving the authors, EMA and representatives from Townsville Hospital (who also have been using Emergo Train), to discuss possible national implementation strategies. Following the demonstration, which was viewed by representatives from the Victorian Department of Human Services, an exercise was successfully held at The Alfred Hospital, Melbourne. At the completion of this exercise, the authors, with assistance from a recently qualified senior instructor from South Australia Ambulance Service, were asked to hold eight further exercises in Victoria to assist hospitals in their preparation for the Commonwealth Games in March 2006.

In February/March 2006 the Swedish owners of Emergo Train will be holding a Senior Instructor's course at the EMA Institute as part of a national implementation of the system within Australia.

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Authors

David Carbonell RN, BSc (Hlth Sc), Grad Dip N (OH&SM) is Executive Officer to Trauma Services Study, Royal Perth Hospital, Western Australia.

Paul Mark MB BS, Dip RACOG, FACEM, Dip DHM, MRACMA, AFCHSE is the Executive Director Medical Services, Freemantle Hospital, Western Australia.

EM Update

Emergency Management Australia provides national leadership in the development of measures to reduce risk to communities and manage the consequences of disasters. EM Update provides current information on activities and issues in the emergency management environment across EMA and State and Territory jurisdictions.

AUSTRALIAN CAPITAL TERRITORY
EMERGENCY SERVICES AUTHORITY

ACT residents better prepared for emergencies

ACT residents are better prepared for emergencies following the distribution of a new all hazards publication. *Emergencies and the National Capital – A residents guide* was delivered to every household across the Territory throughout November. The guide is the brainchild of the ACT Emergency Services Authority (ESA) and follows the production of a bushfire specific booklet 12 months earlier.

"*Emergencies and the National Capital – A residents guide* is the next natural progression for the ESA and the people of the ACT," ESA Commissioner Peter Dunn said. "When we looked at the advice provided for various specific emergencies we found a large part of it was the same no matter what the situation. So we came up with the concept of a guide with a generic all hazards approach," he said.

In particular there is a three page home emergency plan which households can fill out. This includes checklists for home prevention and preparedness activities, and a home emergency kit. The guide contains advice on what to do if disaster strikes and where to access information updates highlighting the Memorandum of Understanding the ESA has with local media outlets.

The new *ACT All Hazards Warning System* is also detailed in the 16-page publication. "The *All Hazards Warning System* was introduced in the ACT in October 2005 as a way to alert residents to the threat of or the occurrence of major emergencies," Commissioner Dunn said. "The ESA used the system for the first time when the ACT was struck by damaging storms in November. We issued a BLUE warning for a possible threat and a YELLOW warning for likely impact prior to and as the bad weather hit. This was followed by a RED warning meaning immediate impact and later on a GREEN warning to initiate recovery," he said.

"We've issued a BLUE warning on a number of occasions since then as well for other forecast storms and when issuing total fire bans for the ACT.

"The resident's guide is a key tool to educating Canberrans about the warning system and actions they should take. We were able to road test the draft contents with community representatives before signoff, which provided highly valuable feedback which we incorporated in the final version," he said.

The ESA has moved to ensure ACT residents with special needs can access the guide. "We have produced the guide in large font and Braille formats as well as an audio CD version," Commissioner Dunn said.

Contents of the guide include:

• ACT All Hazards Warning System;
• ACT Evacuation Strategy;
• Your Home Emergency Plan;
• Bushfires;
• Storms and Floods;
• Home Fire Safety;
• Calling an Ambulance;
• If Disaster Strikes; and
• Emergency Information.

Copies of the *Emergencies and the National Capital – A residents guide* can be downloaded in normal or large print formats from the ESA website www.esa.act.gov.au. Hard copies can be obtained by contacting Community Education Officer Alice Tan Phone: 02 6207 8696.

COMMUNITY DEVELOPMENT

Working Together to Manage Emergencies

The Australian Government policy initiative, *Working Together to Manage Emergencies*, announced in September 2004, recognises the need to develop self-reliance at both the community and local government levels. It builds national preparedness for disasters of all types by providing practical support and recognition. The initiative comprises two funding programs:

- the *Local Grants Scheme* (LGS), to assist local councils to fund and develop emergency risk initiatives, security upgrades around critical infrastructure and provide training for staff; and

- the *National Emergency Volunteer Support Fund* (NEVSF), offering funding to emergency management volunteer organisations to boost recruitment, retention, skills and training.

On 8 December 2005, the Attorney-General, The Hon Philip Ruddock MP, announced the funding of more than 400 projects, valued at $14 million through the LGS and NEVSF in financial year 2005/06.

Projects funded through the LGS include assessment of risks to critical infrastructure, emergency risk management planning, community safety publications, and disaster exercises. Projects funded through the NEVSF include public education programs, volunteer recruitment campaigns, establishment and upgrade of sheds and facilities, and volunteer training.

In announcing the successful projects, Mr Ruddock commended all applicants for their commitment to improving community safety and wished the recipients of funding every success with their projects. Applications for funding in 2006/07 closes on 3 March 2006.

A complete list of successful projects under both programs is available on the EMA website at www.ema.gov.au/ communitydevelopment

Emergo Train

Emergo Train is a major incident simulation system, developed in Sweden for the health service. The simple system is a variation of a functional exercise and provides a unique opportunity for those involved in planning or managing major incidents to develop their management and decision-making skills in a relatively comfortable environment. The pressures and emotions generated by working with 'real' resources in a real-time situation are simulated using radio and other communication methods as in an actual emergency situation. It allows meaningful exercises to be conducted without disruption to normal services.

The system can be tailored for use by a variety of industries including emergency management planning, hospital and health, Chemical Biological Radiological (CBR), ambulance, police and fire personnel. It is used extensively throughout the European and United Kingdom health care systems.

The system does not require sophisticated equipment. It is based on the use of magnetic symbols on whiteboards to represent patients, staff and resources. Movable markers indicate priorities and treatment regimens. The use of a "delay board" ensures that predetermined, accurately validated times are adhered to and that, with careful monitoring from the instructors, the age-old exercise cliché of events happening "notionally" (or in impossibly short time intervals) are precluded.

Emergo Train is being used initially, and very successfully, to simulate hospital mass casualty situations. Performance indicators are provided for each patient in the system. If stated measures are not performed within defined timeframes there is a risk of the patients suffering an 'unfavourable' outcome.

EMA is co-ordinating a national effort towards embracing this exciting system and two courses were conducted at EMA Mt. Macedon, in February.

For further information contact Colin Fiford
Phone: 03 5421 5290; email: colin.fiford@ema.gov.au

Risk Based Land Use Planning Course

EMA is conducting three courses in 2006 to assist participants in practically applying the risk management framework to land use planning activities. The first course is programmed for the week starting 29 May at EMA Mt. Macedon.

There have been a number of significant developments with this course, which focuses on the practical application of risk based land use principles. The course now attracts Planning Institute of Australia Continuing Professional Development points and by May it will be a nationally accredited and recognised short course.

For more information about this course and other courses that EMA offer please refer to www.ema.gov.au

COMMUNITY DEVELOPMENT continued

EMA Library

ALIES (Australasian Libraries in the Emergency Sector) has long played an important role for EMA as a key information network. ALIES has also recently undertaken work in information management in the wider Australian emergency management context. The annual workshop for ALIES members will be held at EMA Mt. Macedon, April 9-13 2006. Representatives from 35 emergency management related agencies from all States, Territories, the Australian Government and New Zealand will meet to discuss, plan and implement strategies for information sharing across the sector and internationally. The theme this year is "Disasters, terrorism, corruption, crime...a librarian's role in uncertain times".

EMA Library staff continue to provide a high level of support to the emergency management sector by supporting EMA course participants, providing an online information service, welcoming researchers and ensuring the library collection reflects client information requirements. Visit our web pages at www.ema.gov.au/library.

For further information contact Linda Hansen
Phone: 03 5421 5246; email: linda.hansen@ema.gov.au

Australian Tsunami Warning System

Following the Indian Ocean tsunami on 26 December 2004, the Australian Government agreed to fund the development of an Australian Tsunami Warning System (ATWS). Implementation of the ATWS is being managed jointly by EMA, the Bureau of Meteorology and Geoscience Australia. It will be one of the first Indian Ocean regional warning systems, and will join a network of planned national systems which collectively form the Indian Ocean Tsunami Warning System. It will also integrate with the existing Pacific Tsunami Warning System to facilitate warnings to the South-West Pacific Region.

EMA has responsibility within the ATWS program for the implementation of community awareness and preparedness, and education and training programs in partnership with Australian States, Territories, local governments and industry. These critical elements of the ATWS will be developed and implemented by EMA over the next four years. At the same time, Geoscience Australia (GA) and the Bureau of Meteorology will be enhancing Australia's seismic and sea-level monitoring capability.

EMA is in the final stages of establishing its implementation team, and has facilitated the creation of and Australian Emergency Management Committee Tsunami Working Group (ATWG). The ATWG met for the first time in Perth between 30 November and 2 December 2005, and will be the focal point for engagement between the Australian Government, State, Territory and local governments in the process of delivering ATWS-related community outcomes.

For further information contact Mark Sullivan
Phone: 02 6256 4693; email: mark.sullivan@ema.gov.au

Safer Communities Awards 2005

Each year Emergency Management Australia hosts the national Safer Communities Awards to recognise projects judged innovative and which demonstrate best practice in emergency management.

The 2005 Awards attracted 63 entries at State and Territory level with 32 category winners going on to the national finals. They were judged by a national panel and awards presented by the Attorney-General Hon Philip Ruddock MP, in Parliament House, Canberra on 2 December 2005.

A booklet describing all the award winners and commended entries can be found on the EMA website at www.ema.gov.au.

A new category for projects of national significance was created for the 2005 Awards. Geoscience Australia received this award with a combination of three entries. The projects were:

1. Collaborative 100K Mapping Pilot for Emergency Management, developed by GA in response to concerns of emergency managers on the lack of updated and suitable topographic information for use in emergency planning and response;

2. Cities Project Perth, a natural hazard risk assessment study by GA and collaborators across three levels of government; and

3. Scenario Modelling for the Assessment of National Catastrophic Disaster Capability, developed by GA to the benefit of many other emergency management related agencies across Australia.

For further information contact Simon Costello
Phone: 02 6249 9665; email simon.costello@ga.gov.au

PLANNING & COORDINATION

In early 2005 Planning & Coordination (P&C) Group was formed to manage an increase in offshore emergency responses and highly specialised domestic events. The group design is deliberately flexible and interlinked to provide a strong framework to support a trained surge staffing capacity to manage the workload in the event of a large scale emergency.

The P&C Group responsibilities encompass management of international engagement activities including offshore capacity building projects, training and development, and contingency and emergency planning. The National Emergency Management Coordination Centre (NEMCC) monitors current and emerging risks, using a whole-of-government, multi-agency and all-hazards approach, engaging in information management and dissemination, with a 24 hour duty officer system and the ability to set up the operations centre on demand.

Under this new framework, P&C Group had a busy 2005. Following the Indian Ocean tsunami, an earthquake on Nias Island in Indonesia killed up to 2000 people, and an Australian Navy Sea Hawk helicopter crash claimed nine Navy personnel. In July P&C closely monitored the London terrorist bombing, and in August, the NEMCC was activated for a third time when peat fires in Sumatra ran out of control. The Australian contingent, led by an NEMCC staff member, had only just returned from Sumatra when the US and Caribbean were devastated by *Hurricane Katrina*,

followed by *Rita*. The Australian Government offered assistance to the US, and P&C provided support to the three-person team which went to the area, and made preparations for the possibility of sending a larger contingent. The NEMCC was activated for a fifth time in October for the Bali terrorist attack bombing—where 22 people lost their lives, four of whom were Australian. The P&C Group assisted in such tasks as repatriation of the deceased. In the same month, more than 73 000 people died when an earthquake hit Pakistan. All of these events had P&C either activated or on high alert, testing arrangements and protocols to the limit. To ensure these arrangements covered every contingency, two major training exercises were run through the year: *Exercise Mercury*, a multi-jurisdictional exercise on counter terrorism; and *Exercise Eleusis*, testing Avian Influenza preparedness.

While the operational side of P&C Group was running at high speed, the International Engagement arm had an equally busy and productive year, with offshore capacity building projects in full swing. The year's end saw a formalised Solomon Islands project, and a signed record of understanding for an Indonesian project targeting emergency services development.

For further information contact Matt Smith Phone: 02 6256 4627; email: matthew.smith@ema.gov.au To contact the NEMCC, please phone 02 6256 4644

Addendum

In the August 2005 issue of the *Australian Journal of Emergency Management* an article on page 15 by John Pisaniello and Jennifer McKay entitled *The need for private dam safety assurance policy – demonstrative case studies 10 years later* contained an omission. The paper in its review of how dam safety is managed in Australia is in fact referring accurately to *mainland* Australia only.

The authors and the Journal wish to thank both Max Giblin and Alistair Brooks from the Department of Primary Industries, Water and Environment in

Tasmania for bringing to their attention that Tasmania recently implemented policy on private dam safety which effectively deals with all the issues raised as barriers to achieving private dam safety programs in other states. The current policy being implemented in Tasmania under the *Water Management (Safety of Dams) Regulations 2003* encompasses all dams, large and small, private and public, low and greater hazard, and is based on the various guidelines published by the Australian National Committee on Large Dams.

The authors believe that the Tasmanian policy provides a model approach to private dam safety assurance that warrants further discussion. A follow-up paper will soon be published in this journal to be authored collaboratively by John Pisaniello, Jennifer McKay, Max Giblin and Alistair Brooks, which will present further empirical evidence of the extent of the problem on mainland Australia, and showcase the Tasmanian policy as a possible solution.

CONFERENCE DIARY

Conference details are sourced from the EMA website.
For more information about these and future conferences, visit www.ema.gov.au

2006 INTERNATIONAL

30 March – 2 April

Location	Omaha, Nebraska
Title	2006 Annual Meeting of the Midwest Sociological Society
Details	This annual conference will include a session on "Innovations in Disaster Theory, Research, and Practice."
Enquiries	Peter Adler or Patti Adler, University of Colorado, 327 UCB, Boulder, CO 80309 email: socyprof@hotmail.com web: http://www.themss.org/meetings.html

31 March – 4 April

Location	Denver, Colorado
Title	ASPA 2006 The Sky's the Limit: Idealism and Innovation in Public Service
Details	This annual conference of the ASPA features professional development workshops, education sessions, and panel discussions for practitioners and academics. Training sessions will address issues such as ethics, human resources, women's issues in public administration, leadership, and performance measurement, while panel discussions cover topics, such as homeland security, transportation, privatization, and internationalism and global government.
Enquiries	Patricia Yearwood, 1301 Pennsylvania Avenue NW, Suite 840, Washington, DC 20004 tel: (02) 585-4309 email: pyearwood@aspanet.org web: http://www.aspanet.org/scriptcontent/index_aspaconference.cfm

2–6 April

Location	Seattle, Washington
Title	Symposium on the Application of Geophysics to Engineering and Environmental Problems 19th Annual Meeting
Details	The theme of this year's conference is "Geophysical Applications for Environmental and Engineering Hazards – Advances and Constraints." The program consists of keynote lectures, technical sessions, exhibits, and special events that will provide participants the opportunity to learn about recent developments in near surface geophysics. Special sessions include Geophysics in Land Use and Management, Geophysical Monitoring of Landslide Hazards, and Seismic Landstreamers.
Enquires:	web: http://www.eegs.org/sageep/

2–7 April

Location	Vienna, Austria
Title	European Geosciences Union General Assembly 2006
Details	This conference will bring together geoscientists from Europe and all over the world to present work and discuss ideas in all disciplines of the earth, planetary, and space sciences.
Enquiries	Copernicus Meeting Office, Max-Planck-Strasse 13, 37191 Katlenburg-Lindau, Germany tel: +49-5556-1440 email: egu.meetings@copernicus.org web: http://meetings.copernicus.org/egu2006/

7–9 April

Location	Phoenix, Arizona
Title	7th Biennial Fire Service Women's Leadership Training Seminar
Details	This event is hosted by the Phoenix Fire Department and supported by a local committee of urban and wildland fire personnel. The seminar will include workshops and training sessions aimed at making participants better fire service leaders.
Enquiries	Women in the Fire Service, Inc. (WFSI), PO Box 5446, Madison, WI 53705 tel: (608) 233-4768 email: info@wfsi.org web: http://www.wfsi.org/

10–14 April

Location	Orlando, Florida
Title	2006 National Hurricane Conference
Details	The primary goal of the conference is to improve hurricane preparedness, response, recovery, and mitigation in order to save lives and property in the United States and the tropical islands of the Caribbean and the Pacific. The conference serves as a national forum for federal, state, and local officials to exchange ideas and recommend new policies to improve emergency management.
Enquiries	National Hurricane Conference, 2952\ Wellington Circle, Tallahassee, FL 32309 tel: (850) 906-9224 email: mail@hurricanemeeting.com web: http://www.hurricanemeeting.com/

18–22 April

Location	San Francisco, California
Title	100th Anniversary Earthquake Conference Commemorating the 1906 San Francisco Earthquake
Details	The 100th anniversary of San Francisco's 1906 Earthquake provides a valuable opportunity to learn from the past, assess the present, and prepare for the future. : Earthquake Engineering Research Institute (EERI) AND Seismological Society of America (SSA) are joining with Disaster Resistant California to focus on how communities can manage their risk through science, public policy, emergency response, and business continuity.
Enquiries	web: http://www.1906eqconf.org/

20–21 April

Location	Miami, Florida
Title	17th Global Warming International Conference and Expo
Details	A sampling of the session topics at this conference include the following: Sustainable Environment and Health for the 21st Century, Remote Sensing and Global Surveillance, Water Resources Management, Extreme Events and Impacts Assessment, and Global Warming and the Oceans.
Enquiries	email: gw17@globalwarming.netvisit web: http://globalwarming.net/

23–27 April

Location	Honolulu, Hawaii
Title	RIMS 2006: Expanding the Power of Risk Management
Details	This conference will provide an opportunity for risk managers and insurance professionals to expand their knowledge and network with industry experts. The conference will focus on enterprise risk management as well as address strategic, business, financial, and operational risk.
Enquiries	Risk Insurance and Management Society, Inc. (RIMS), 1065 Avenue of the Americas, 13th Floor, New York, NY 10018 tel: (212) 286-9292 web: http://www.RIMS.org/2006honolulu

25–27 April

Location	Pasadena, California
Title	9th Wildland Fire Safety Summit
Details	Participants in this summit will include firefighters, prescribed burners, land managers, fire chiefs, agency administrators, fire researchers, public officials, and others. Presentations will be on the topics of liability and legal implications; fire weather; making firefighters safer; safety in the wildland-urban interface; policy, practices, and procedures; case studies and lessons learned; and international wildland fire safety.
Enquiries	Dick Mangan tel: (406) 543-0013 email: blackbull@bigsky.net

2–4 May

Location	Grand Rapids, Michigan
Title	2006 Great Lakes Homeland Security Training Conference and Expo
Details	This conference will bring together over 1,500 public officials, education representatives, and emergency responders from various disciplines looking for the tools needed to detect, prevent, and protect their communities from terrorist attacks.
Enquiries	Colleen Mohr tel: (517) 336-6464 email: mohrc@michigan.gov web: http://www.michigan.gov/msp/0,1607,7-123-1593_3507-118227--,00.html

8–10 May

Location	Houston, Texas
Title	GIS and Water Resources IV
Details	This conference focuses on innovation and application of geographic information systems (GIS) to water resources. Companies, government agencies, and nonprofit organizations involved in all facets of water resources are encouraged to attend. A special category has been added to the call for papers addressing topics related to the effects of Hurricanes Katrina and Rita, including the role of GIS in dealing with the after-effects of such catastrophes and in planning for future severe weather events. Abstracts can be submitted for this category until January 16, 2006.
Enquiries	Patricia A. Reid, American Water Resources Association (AWRA), PO Box 1626, Middleburg, VA 20118 tel: (540) 687-8390 email: pat@awra.org web: http://www.awra.org/meetings/Houston2006/index.html

9–12 May

Location	May Ottawa, Ontario
Title	Climate Change Technology Conference
Details	The theme of this conference is "Engineering Challenges and Solutions in the 21st Century." The purpose of the conference is to stimulate awareness and action for solutions that mitigate or adapt to climate change. In addition to potential technical solutions, the conference will address associated social and environmental consequences.
Enquiries	Engineering Institute of Canada (EIC) Climate Change Conference, 1895 William Hodgins Lane, Carp, Ontario, Canada, K0A 1L0 tel: (613) 839-1108 email: EICCC2006@ieee.org web: http://www.ccc2006.ca/eng/

14–17 May

Location	St. Pete Beach, Florida
Title	The Coastal Society's 20th Biennial Conference
Details	The theme of the 2006 conference will be "Charting a New Course: Shaping Solutions for the Coast." Conference attendees will include scientists, policy makers, coastal managers, and the public, and it will be organized into tracks on innovative solutions for the following: Land Use Challenges, Governing Ocean Use Conflicts, Effective Integration of Science, Changing Behaviors: Professionals and the Public, and Mitigating Coastal Natural Hazards.
Enquiries	Judy Tucker, PO Box 25408, Alexandria, VA 22313-5408 tel: (703) 933-1599 email: coastalsoc@aol.com web: http://www.thecoastalsociety.org/conference/tcs20/

14–17 May

Location	Newark, New Jersey
Title	ISCRAM 06: Information Systems for Crisis Response and Management Conference
Details	The theme of this conference is information systems as the integration medium for the "lifecycle of emergency preparedness and response" (planning, training, mitigation, detection, alerting, response, recovery, and assessment). The deadline for paper submission is January 12, 2006.
Enquiries	Murray Turoff (New Jersey Institute of Technology) or Bartel Van de Walle (Tilburg University) e-mail: turoff@njit.edu; bartel@uvt.nl web: http://www.iscram.org/

17–19 May

Location	Florence, Italy
Title	3rd i-Rec International Conference on Postdisaster Reconstruction: Meeting Stakeholder Interests
Details	This conference will focus on the development of effective and sustainable postdisaster reconstruction strategies and will be a forum for sharing research work and experience from the field on practical issues in affected areas. The i-Rec conferences bring together professionals and practitioners from various fields such as housing, reconstruction, civil engineering, international development, humanitarian aid, architecture, urban planning, and environmental studies.
Enquiries	Cassidy Johnson email: cassidy.johnson@sympatico.ca web: http://www.grif.umontreal.ca/pages/irechomepage.html

21–24 May

Location	Baton Rouge, Louisiana
Title	American Institute of Hydrology Annual Meeting and International Conference: Challenges in Coastal Hydrology and Water Quality
Details	This conference will provide an international forum for the dissemination and exchange of information in coastal hydrology, hydraulics, and water quality. The conference will stimulate interdisciplinary research, education, management, and policy making from physical, biogeochemical, and socioeconomic perspectives related to complex environmental systems in coastal regions.
Enquiries	American Institute of Hydrology, 300 Village Green Circle, Suite 201, Smyrna, GA 30080 tel: (770) 384-1634 email: aihydro@aol.com web: http://www.aihydro.org/conference.htm

21–24 May

Location	Long Beach, California
Title	5th University of California at Los Angeles (UCLA) Conference on Public Health and Disasters
Details	This conference is designed for public health professionals as well as individuals and organizations from both the public and private sectors involved in emergency public health preparedness and response. The diverse topics will be relevant to public health and medical practitioners, emergency medical services professionals, researchers, and managers involved in the wide range of emergency public health issues resulting from natural and human-induced disasters.
Enquiries	UCLA Center for Public Health and Disasters, 1145 Gayley Avenue, Suite 304, Los Angeles, CA 90024 tel: (310) 794-0864 email: cphdr@ucla.edu web: http://www.cphd.ucla.edu/conferenceframe.htm

22–24 May

Location	Boston, Massachusetts
Title	Risk Communication Challenge: Proven Strategies for Effective Risk Communication DETAILS
Enquiries	Harvard School of Public Health, Center for Continuing Professional Education, CCPE – Department A, 677 Huntington Avenue, Boston, MA 02115 tel: (617) 384-8692 email: contedu@hsph.harvard.edu web: http://www.hsph.harvard.edu/ccpe/programs/RCC.shtml

23–25 May

Location	Honolulu, Hawaii
Title	Third Tsunami Symposium
Details	The Tsunami Society publishes "The Science of Tsunami Hazards" journal and conducts a Tsunami Symposium every three years. Abstracts of papers for presentation must be submitted by February 1, 2006.
Enquiries	Barbara Keating tel: (808) 956-8143 email: Keating@soest.hawaii.edu web: http://www.sthjournal.org/

23–25 May

Location	Las Vegas, Nevada
Title	CPM 2006 West Conference and Exhibition DETAILS
Enquiries	CPM 2006 West, WPC Expositions, 20 Commerce Street, Suite 2013, Flemington, NJ 08822 tel: (908) 788 0343 email: CPMEvents@WitterPublishing.com web: http://www.contingencyplanning.com/events/west/

23–26 May

Location	Seoul, South Korea
Title	TIEMS 13th Annual Conference 2006
Details	This year's conference will include sessions on emergency management training and education, priorities for humanitarian aid, natural hazards, business continuity, and many others.
Enquiries	Young-Jai Lee or TIEMS, PO Box 1462, 8021 Zuerich, Switzerland; email: yjlee@dgu.edu web: http://www.tiems.org/index.php

23–26 May

Location	Stavanger, Norway
Title	IAIA '06: Power, Poverty, and Sustainability 2006 - The Role of Impact Assessment
Details	Participants in this event will discuss how the various instruments of impact assessment - environmental impact assessment, strategic environmental assessment, sustainability assessment, health impact assessment, and social impact assessment can contribute in assisting developers, decision-makers, development cooperation providers, and the public to integrate environmental, social, and other concerns in a variety of fields.
Enquiries	IAIA, 1330 23rd Street South, Suite C Fargo, ND USA 58103 tel: (701) 297-7908 email: info@iaia.org web: http://www.iaia.org

31 May–3 June

Location	Arlington, Virginia
Title	National Conference on Animals in Disaster 2006: Learning from Katrina - A Commitment to the Future
Details	The fourth biennial National Conference on Animals in Disaster will be dedicated to the lessons of Hurricanes Katrina and Rita. Participants will work to secure the improvements made in the disaster planning and response process and to re-create and reinvigorate approaches currently in process that will help in future preparedness and response efforts. Leaders from government, nonprofit and voluntary organizations, and the business community will all participate.
Enquiries	Humane Society of the United States, 2100 L Street NW, Washington, DC 20037 tel: (02) 452-1100 web: http://www.hsus.org/NCAD06

4–7 June

Location	New Orleans, Louisiana
Title	2006 National Main Street Conference
Details	This conference focuses on commercial district revitalization and showcases projects and strategies used by small and rural towns, suburban-ring communities, large and mid-sized cities, and urban neighborhood business districts to revitalize their commercial districts. A major conference theme will be opportunities related to crisis management and disaster recovery for historic sites and commercial districts. The 2006 conference will also offer an opportunity to demonstrate how preservation-based revitalization can be used to rebuild the Gulf Coast region after the devastation of Hurricanes Katrina and Rita.
Enquiries	National Trust for Historic Preservation, 1785 Massachusetts Avenue NW, Washington, DC 20036 tel: (202) 588-6219 email: msconference@nthp.org web: http://conference.mainstreet.org/

4–8 June

Location	Orlando, Florida
Title	NFPA World Safety Conference & Expo
Details	This meeting is directed at fire and life safety professionals and offers professional development opportunities, educational tracks focused on timely issues, and an exposition featuring industry suppliers. For more information, contact ROC Exhibitions, 1963 University Lane, Lisle, IL 60532 tel: (630) 271-8210 email: info@rocexhibitions.com web: http://www.nfpa.org/categoryListWSCE.asp?categoryID=1059

5–7 June

Location	Rhodes, Greece
Title	Coastal Environment 2006: Sixth International Conference on Environmental Problems in Coastal Regions Including Oil and Chemical Spill Studies
Details	Coastal Environment 2006 will address problems related to the monitoring, analysis, and modeling of coastal regions including sea, land, and air phenomena. The conference will gather researchers, engineers, and professionals involved in the field of coastal environmental quality.
Enquiries	Charlotte Bartlett, Coastal Environment 2006, Wessex Institute of Technology Ashurst Lodge, Ashurst, Southampton, SO40 7AA UK tel: +44 (0) 238 029 3223 email: cbartlett@wessex.ac.uk web: http://www.wessex.ac.uk/conferences/2006/coast06/

7–9 June

Location	Rhodes, Greece
Title	Debris Flow 2006: First International Conference on Monitoring, Simulation, Prevention, and Remediation of Dense and Debris Flows
Details	This meeting will study the fundamental mechanical principles as well as rheological properties and phenomenological aspects of debris flows. Particular attention will be given to modeling techniques and case studies. The conference will also address the problem of debris flow disaster mitigation using structural and nonstructural measures.
Enquiries	Katie Banham, Debris Flow 2006, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK tel: 44 (0) 238 029 3223 email: kbanham@wessex.ac.uk web: http://www.wessex.ac.uk/conferences/2006/debris06/
Enquiries	ASFPM, 2809 Fish Hatchery Road, Madison, WI 53713 tel: (608) 274-0123 email: asfpm@floods.org web: http://www.floods.org/Conferences,%20Calendar/albuquerque.asp

14-16 June

Location	Delft, The Netherlands
Title	Ethical Aspects of Risk Conference
Details	This conference will bring together moral philosophers, sociologists, psychologists, and engineers to reflect on the ethical issues concerning "acceptable risk." Cost-benefit analysis, the role of emotions, and the role of the public will all be discussed.
Enquiries	Department of Philosophy, Faculty of Technology, Policy, and Management, Jaffalaan 5, 2628 BX Delft, The Netherlands tel: 0031-(0)15-2783887 email: ethicsrisk@tbm.tudelft.nl web: http://www.ethicsrisk.tbm.tudelft.nl/

18-21 June

Location	Lillehammer, Norway
Title	Geohazards: Technical, Economical, and Social Risk Evaluation
Details	The objective of this conference is to provide a roundtable for engineers, geoscientists, social scientists, public authorities, and insurance companies to discuss the human, environmental, and economic consequences of geohazards.
Enquiries	Engineering Conferences International, 6 Metro Tech Center, Brooklyn, NY 11201 tel: (718) 260-3743 email: info@eci.poly.edu web: http://www.engconfintl.org/6ag.html

18-21 June

Location	Toronto, Canada
Title	16th World Conference on Disaster Management - Emergency Management and Business Continuity Working Together
Details	This premier event will feature over 80 Educational Sessions on pandemic planning, lessons learned from Hurricane Katrina, COOP, standards, risk management, data forensics, crisis communications, ICS/IMS, interoperability, public alerting systems, public/private partnerships, plus much more.
Enquiries	web: http://www.wcdm.org

2006 AUSTRALIA

6–9 June

Location	Brisbane, Australia
Title	Australasian Bushfire Conference 2006
Details	This conference will provide a forum to share new ideas on the complex issues of bushfire management, encourage communication between agencies and groups involved in bushfire management, build upon the lessons learned in previous bushfire campaigns, and facilitate a new understanding of the role of fire in the landscape. Topics will cover fire management in wildland-urban interface, development controls, bushfires in a changing climate, fuels management, community involvement and participation in fire management, fire ecology, remote sensing, mapping, and maintaining the balance between protection and conservation.
Enquiries	ICMS Pty Ltd, 88 Merivale Street, South Bank, Queensland 4101, Australia tel: +61 7 3844 1138 email: bushfire2006@icms.com.au web: http://www.bushfire2006.com/

AJEM now indexed by AGIS

The Australian Journal of Emergency Management is now selectively indexed by the Commonwealth Attorney–General's Information Service (AGIS), available through *Informit* (http://www.informit.com.au/).

AGIS, produced by the Lionel Murphy Library of the Attorney–General's Department, is a comprehensive indexing and abstracting service. Over 120 law journals from the Australian, New Zealand and Asian Pacific regions are comprehensively indexed.

Informit is a source of online Australasian scholarly research published by RMIT Publishing. The Informit range of online products includes a comprehensive set of indexes to government and scholarly publications including the *Informit Plus Text* databases.

AGIS Plus Text is a full text online database which provides access to articles from over 100 legal journals. Selected articles from AJEM are now included in this service.

Subject coverage includes all aspects of law including administrative law, banking, companies and securities, constitutional law, copyright law, criminal law, emergency management law, environmental law, family law, human rights, international law, legal aid, and trade practices.

LETTER TO **THE EDITOR**

Dear Mr Templeman,

I wish to commend you and your staff for producing an excellent thought-provoking magazine.

I found the November, 2005 edition to be one of your best. With your permission I would like to comment on some of the articles.

They should be heroes

Like Dianne I hate the word "hero". As a person who has been involved in Emergency Management for 40 years, I totally agree with her. Over the years I have on occasions expressed my annoyance at Police, SES and Fire Fighters who see themselves as heroes yet not acknowledging the hard work of Support Personnel. Even among the emergency response agencies there is a tendency to only acknowledge the person who "does the deed", for example to save the house from burning, finding the missing person etc. What about the other often large number of people involved in the incident? Speaking from experience for each time I have been classified as being a "hero" I would have worked just as hard if not harder hundreds of times supporting the rest of the team.

What about those who spend a large per centage of their lives doing preventative work such as property inspection, preparing emergency plans or training, or being on standby etc? Then there are people who no matter what time, day or night, you can call upon to assist. These are the real heroes of society.

Australian Rural Fire Services Recognition and Service Awards for Volunteers

First of all I agree with the views expressed by Jim and Mary. This issue goes across all agencies. I fought for years to get the present five and 10 year medals presented to volunteer Bush Fire Fighters in Western Australia. I have seen cases where people have said they only plan, due to personal problems, to do one more year service to get a medal. Once they get it with associated acknowledgement of peers and community, they have given many more years of service.

However, besides the medals there are other ways acknowledgement can be given to volunteers. For example after a major incident and/or on annual bases a barbeque or some other type of public reception. Letters of thanks for services for even short periods of service are important and have on occasions seen such people return to emergency services.

Letters of thanks to members of the public are also good public relations and a recruiting tool. As a young District Police Officer in the 1960s in a high crime rate area I learned the value of giving letters of thanks to those who helped during emergencies.

When arriving at an emergency I was guaranteed there would be a "crim" there ready to give me a hard time. My response would be to give them a job to do such as crowd control, traffic control, helping with first aid etc. After the incident I would arrange for a letter of thanks signed by the Commissioner of Police to be sent to the helper. This drew some interesting results. Despite generations of hating people in uniform they found it difficult to hate a person who had shown them respect and appreciation. The major side effects were a decrease in crime, and far less aggression shown to me.

I have also found that giving people affected by a disaster a job to do, followed by a letter of thanks is an effective tool in assisting them recover from the incident.

The bottom line is a simple "thank you" goes a long way when dealing with all volunteers.

Developing an effective emergency management partnerships

I am extremely glad to see agencies are becoming more accepting of this concept. It is only common sense. It still annoys me to know that some agencies still have officers who will not seek help from or want to work with other organisations.

Efficiency and in turn the community are the losers in such cases.

Yours faithfully

Ray Sousa
Ranger and Emergency Services Coordinator

5 January 2006

interesting websites

New Website for the Australian Emergency Management Volunteer Forum (AEMVF)
http://www.aemvf.org.au

A new and professional website for the AEMVF was recently launched. It has been made possible due to funding received through the Program *Working Together to Manage Emergencies*, and assistance from Surf Lifesaving, one of the member organisations of the AEMVF. The website provides the Forum with the visibility it needs to better serve the volunteer emergency management sector. It contains useful information for volunteers and their organisations alike. We invite all interested volunteers to check it out regularly.

Center for Research on the Epidemiology of Disasters
http://www.cred.be/

The Center for Research on the Epidemiology of Disasters, is a World Health Organization Collaborating Centre with a special focus on public health, epidemiology, structural and socio-economic aspects. CRED promotes research, training, and information dissemination on disasters. The website includes an international disasters database providing information on disasters and their human and economic impact, categorised by the country and type of disaster. The database includes country profiles, disaster profiles and lists, and searching capabilities.

Cyclone Testing Station
http://www.eng.jcu.edu.au/csts/

Since 1977 the Cyclone Testing Station has been researching, testing and advising industry and governments on building practices to minimise loss and suffering as a result of severe wind events. The website includes information about ongoing projects, information bulletins, a newsletter, and animations explaining severe wind damage.

Index of articles from the Australian Journal of Emergency Management

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