

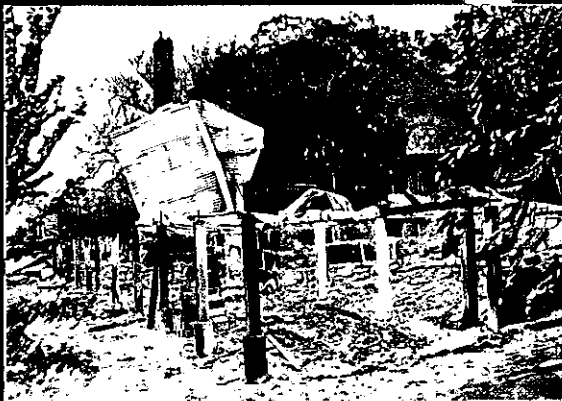
The Australian Journal of

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



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The use and value of research in the field of emergency management

At a recent police research seminar a Deputy Commissioner of Police was asked what he wanted from research, his reply was that whenever he had a need for immediate answers to complex problems, he would go to a researcher and obtain a response that he could easily understand. While this may show a somewhat naive perception of research and how it works, it demonstrates that the approach of research and researchers can be misunderstood even at a senior level.

Research is the use of systematic methods to evaluate ideas or to discover new knowledge. There are two main reasons for conducting research:

- to discover or learn more about the basic laws of nature
- to apply this knowledge to the solution of practical problems, such as a new product or process.

Thus the first is called 'basic' research, and the second is 'applied' research. While most research in the emergency management field would be applied, basic research can still have a profound effect on how we effectively respond to a crisis.

The inter-relationship between the two can be seen in how basic research, such as the examination of methods for more effective fire retardants, may be adapted into applied research, such as the application of the retardant in fires.

Unfortunately, in the emergency management field there has been very little targeted research and little has been incorporated into improving practice and applications. As well, in Australia, research has been fairly narrowly focused on specific hazards or disciplines. This is not a criticism of the research undertaken, but a reflection of the diverse and wide nature of the emergency management field.

The police research seminar highlighted the need to critically evaluate research using seven criteria: objectiveness, rigorousness, relevance, independence, clear application, timeliness, and acceptance in the field. These criteria are all subjective and, while some research may meet most, it is often difficult to meet the last two: timeliness and acceptance. This may be very pertinent

to emergency management agencies in Australia, as there has not been a good track record of embracing or recognising the value of research within the field. There have been times when research was openly discouraged, or at least ignored. There has been a distinct culture of 'anti-research' and there is a very large gap between researchers and practitioners. Academic research is often treated as 'out of touch' with the real world, or even a threat. Researchers themselves are often treated similarly.

The bridge between the research fraternity and the practitioners can, however, be crossed to some degree by educational institutions, who often promote the findings of research and its application in the field. It is through contact with students in an educational process that knowledge can be transferred into the corporate thinking of the students' parent organisations. Another bridge is by publication of findings in journals, and the access to the findings through libraries and the Internet.

It is essential to identify what is the current research, issues and trends, and to turn them into practical outcomes and recommendations to enhance emergency management. When research findings are published, emergency management practitioners should assess the research to see if it meets their evaluation criteria and to determine how it could improve management practices in:

- *informing resource allocation* — how to best use what we have, how to obtain resources that we don't have
- *identifying international best practice* — assessing the feasibility of domestic application or implementation
- *identifying what works and what doesn't*
- *identifying emerging trends in emergency management* — so that we can anticipate and manage them rather than responding reactively
- *identifying new ways of looking at issues and problems* — research can identify strategic opportunities that might not otherwise be apparent
- *analysing cases of organisational failure* — essential if we are to learn from our mistakes

- *helping to categorise and organise institutional knowledge* — this is important, given the oral tradition in response agencies and the likelihood that careers in the field are of short duration due to the changing employment practices and conditions.

Perhaps with this perception and recognition of the value of research, it could play a more vital role in enhancing emergency management capability in Australia. Over the last few years EMA has been more vigorous in promoting and supporting research in the field, through the provision of research grants, projects, workshops and seminars.

EMA has provided a forum for publication of research findings and now a directory of research has been established on the Internet in conjunction with the Natural Hazards Research Centre at Macquarie University (<http://www.es.mq.edu.au/nhrc/ema.html>). This provides researchers with access to a database that is unique in Australia. As well it provides valuable information for practitioners as to what research is occurring in the field of natural and technological hazards and who is doing the research. It is readily-available information that we should use extensively. We now need to go one step further and broaden the scope to the full spectrum of emergency management.

EMA has been proactive in establishing access through the Internet to the full range of resources in its Information Centre (<http://www.ema.gov.au/library.htm>). This enables researchers and practitioners to obtain access to research findings, at a time of their convenience, and with no gatekeeping role played by information specialists. Perhaps with a new perception of the value of research within our own field, we should take full advantage of it and turn it into the vital knowledge that enhances Australia's emergency management capability. But it is important to bear in mind that research and data are not always to be found in immediate or easily understood 'quick grabs'. Thus, a bridge between researchers and practitioners is an important link to develop and maintain beyond the traditional educational process.

Issues for local government

by Helen Proctor, Acting Chief Executive Officer, Municipal Association of Victoria

If I say that Ash Wednesday was the disaster that changed the way Victorian communities dealt with catastrophes, you, as people involved in emergency management, will be thinking that is the most obvious and puerile thing that you have heard. But for a number of reasons, the after effects of Ash Wednesday were the catalyst for local government in Victoria to adopt a new approach to the way in which it managed risks and attempted to protect councils, and ultimately communities, from the financial cost of catastrophes.

That new approach resulted in the setting up of local government's own liability insurance scheme (*Civic Mutual Plus*), designed to ensure that councils have adequate levels of cover to deal with claims made against them, but also to put in place risk management strategies to ensure that councils' exposure to risks is minimised.

Before Ash Wednesday, many councils were probably naive about their exposure to risk and claims resulting from natural disasters. Many councils were under-insured because the cost of adequate levels of cover was almost prohibitive, there was a lack of understanding about how councils could be implicated in such matters and there was simply a view that a big claim against a council would not happen.

The Court action involving Stirling Council in South Australia (for property loss occurring because of an inadequately supervised burning operation at the council's tip in the lead up to Ash Wednesday) brought that naivety to an end and made the position clearer. The council, with \$1 million in liability cover, faced a damages bill in the region of \$15 million. Stirling brought the need for councils to have a different approach to their liabilities into sharp focus.

A council's involvement, and therefore a potential liability that could arise from a council's role in emergency management, comes from two sources. These are the legislative requirements that impose clear obligations and duties on councils, and from common law.

Presented at the Local Government Executives Briefing, Australian Emergency Management Institute, Mt Macedon, Friday October 10, 1997

The basics of the laws of negligence are generally understood, so I will deal primarily with the legislative requirements.

The legislative requirements

Local government, as 'community government', has always played a role, and had a commitment to, emergency management, but over the years its role has been more clearly defined in legislation. This is in an environment of rate capping, compulsory competitive tendering and juggling competing community demands for services and council support.

It is also in an environment of increased litigation and higher claims being made against councils. This can partly be explained by restricted access to other sources of compensation, such as that previously paid by the Transport Accident Commission and by new approaches by the legal profession encouraging people to bring claims on a 'no win no fee' basis.

Curiously, the Local Government Act 1989, which is the principal empowering legislation for councils in Victoria, does not deal with the roles and responsibilities of councils in emergency situations. The Act simply provides that the functions listed in Schedule 1 to the Act may be carried out by councils. Schedule 1 states that the functions of councils include 'general public services' including 'fire prevention and protection' and 'local emergency and safety services'.

The Act also sets out the purposes and objectives of councils which could be said to encompass activities which would be consistent with general public services.

In addition, a council can make local laws for or with respect to any act, matter or thing in respect of which a council has a power or function.

There are few limitations on local law-making powers, except that a local law cannot duplicate anything already dealt with in primary or secondary legislation of the State or in planning schemes.

The local law provisions of the Local Government Act give councils the capacity to charge fees etc. for permits and to impose fines for a contravention of a local law. The Local Government Act reinforces the enforcement capacity of a council's authorised officers by giving them powers of entry and a capacity, after certain procedural steps have been followed, to enter onto premises to carry out work which a person has neglected or refused to do or to arrange for another person to carry out that work and to charge the 'offender' for the work.

It is through the use of these local laws powers that councils can deal with matters that might fall into the category of fire prevention, such as clearing unsightly premises and the removal of nuisances.

Additionally, the Country Fire Authority Act 1958, while vesting the control of prevention and suppression of fires in the country area of Victoria in the CFA, specifies duties and powers of councils in relation to fire prevention. It is a clear duty of every municipal council to take all practicable steps to prevent the occurrence of fires and minimise the danger of the spread of fires on or from:

- any land vested under its control or management
- any road under its care or management.

To do that, a council may acquire any equipment, do any thing, or expend any money from its funds. The CFA Act also gives the fire prevention officer of a council an ability to serve a fire prevention notice on the owner or occupier of land and to issue infringement notices and recover penalties where there is a failure to observe the notice and where an objection or appeal against the notice has not been upheld.

The most far reaching requirements applied to councils comes from the Emergency Management Act 1986. In brief, Sections 20, 21 and 21A require councils to 'prepare and maintain a municipal emergency management plan'.

The plan must contain information that:

- identifies the municipal resources and other resources available for use in the municipal district for emergency prevention, response and recovery. (These resources are either owned or under the direct control of a council.)
- specifies how resources are to be used for emergency prevention, response and recovery.

Councils are also required to co-ordinate and plan for emergencies. Councils must:

- appoint an emergency resource officer
- appoint a municipal emergency planning committee
- ensure that municipal emergency management plans are audited by the Director of the Victorian State Emergency Service at least once in every three years.

In summary, councils have clear responsibilities under various pieces of legislation to minimise the risk of fire emergencies to communities.

Recent reforms to local government in Victoria have taken their toll on councils' emergency management functions.

The application of Compulsory Competitive Tendering (CCT) has had a significant impact on the way that the emergency legislation can be implemented. To a lesser extent, amalgamations of councils and the sale of surplus assets have also had an impact.

The Local Government Act requires that councils submit 50 per cent of their expenditure to market testing. Most councils have opted to tender works and services of a physical nature (e.g. road making) within that 50%. These functions are easily identifiable and can quite easily be separated from councils' governance functions. In most cases, physical services were the first 'cab off the rank' in the new CCT process. So for many councils, ownership and the direct control of substantial plant and equipment may not be an option. Restructure and amalgamation also saw councils rationalising plant and equipment, with councils divesting themselves of machinery or limiting it to

equipment that might not entirely suit emergency needs.

The end product of both these reforms is that the availability of resources for emergencies may well be limited by

- the nature of the contracts entered into between a council and a contractor
- the remote location of plant and equipment in larger municipal districts
- the loss of direct control by councils
- the high probability that plant and equipment might be being used by the contractor on non-council contracts, placing the contractor in a dilemma in satisfying other contractual obligations.

While there has been some suggestion that councils ought to be more sophisticated about the contracts that they enter into and that contract documentation should make provision for use of equipment in emergencies, it is doubtful that councils in Victoria have any powers to acquire contractor's staff or their equipment and to allocate either of them to emergency situations. It is also doubtful that councils can be required to, or should, include the resources of contractors in their emergency plan. Such an approach has potential for all sorts of complications and, more particularly, may expose a council in Victoria to a liability claim, e.g. contractor's bankruptcy.

These difficulties do not negate the need for councils to comply with statutory duties imposed on them. It simply means that compliance becomes much harder, unless appropriate recognition and planning go into the process.

Duty of care and litigation

It is clear that if a council has a duty to act, and it does not act, it can be exposed to a liability claim.

For instance, if a Victorian council did not have an emergency plan pursuant to Section 20 of the Emergency Management Act 1986, and as a result of this a third party suffers personal injury, property damage or economic loss, a negligence action could be sustained.

Similarly, following the High Court Australia decision in *Sutherland Shire Council v Heyman* (157 CLR 424), if a council has the power to act in an emergency situation, and does not exercise its powers and act, it could be liable for resultant losses if there is sufficient proximity between council and the third party who sustained the

loss and the third party relied on council so acting.

In situations where a Victorian council has created or increased the risk of physical injury or economic loss, by virtue of its actions in an emergency situation, as opposed to council simply not acting at all, a council can be found to be negligent and therefore liable to the party suffering the loss.

In *Alex Finlayson P/L v Armidale City Council* (1994) (123 ALR 155), the Federal Court of Australia considered a situation where land that had previously been used for industrial purposes and in respect of which it was known that contaminants had spilt, had been approved by the council for rezoning to residential. Years later the land was found to be seriously contaminated and a risk to children.

Brennan J said in this case (p. 479):

'Where a person, whether a public authority or not, and whether acting in exercise of a statutory power or not, does something which creates or increases the risk of injury to another, he brings himself into such a relationship with the other that he is bound to do whatever is reasonable to prevent the occurrence of that injury unless statute excludes the duty.'

The proviso expressed by Brennan J above is important.

In summary, it would therefore appear that while the amount of resources that municipal councils in Victoria have to devote to emergency plans or emergency situations has decreased due to the impact of the CCT process in Victoria (and to a lesser extent amalgamations) there are still three situations where a municipal council in Victoria may be exposed to a liability claim in the performance of its emergency management roles.

These are:

- where the council has a duty to act and yet fails to undertake the necessary action
- where the risk of damage was created or increased by the conduct of council
- where a council has the power to act and does not do so and there is sufficient proximity between the third party and they or it has relied upon a council acting.

Only if there is a statutory immunity in these situations will council be protected.

It is unlikely that councils can abrogate their responsibilities under the legislation by transferring responsibilities for the provision of resources in

emergency situations. The legislation is quite specific about councils' obligations and it is quite clear that for the preparation of plans and so on, the primary obligation rests with councils, irrespective of who a council may have entered into a contract with. If appropriate contractual arrangements are made councils may be able to spread the risk, i.e. a contractor may be joined in any action but councils will not be able to avoid liability altogether.

Management of risks

One of the underlying principles associated with local government's liability insurance scheme is that of managing risks and implementing appropriate risk management strategies. There are a number of steps available to councils in dealing with the sorts of risks that might emerge from catastrophes.

Reality says that all the risk management strategies in the world will not assist councils to avoid liability for circumstances like a Newcastle earthquake.

However, councils ought to be able to identify the potential that might

emerge from a flood or fire. Most councils are aware of the natural disasters that can occur in their municipal districts from time to time. In those cases, the following are suggested ways in which councils might address the risk.

- Be aware of, and identify, the likely hazards or dangers that can exist in the particular municipal district. In other words, councils should have particular knowledge of their own areas to establish what their plans need to be geared to meet. Is there a potential, natural event that sets you apart from an average council? Is the municipal district, or part of it, flood prone or is it in a high fire risk area?
- If the answer is 'yes', then emergency management plans need to be tailored to deal with, and respond to, those identifiable risks.
- The plan needs to ensure and to allocate resources to circumstances or events that are reasonably foreseeable — that is they are likely to occur. Obviously, councils need to be mindful of availability of resources, ability to access resources and to direct and control them.

- The plan should be continually monitored and reviewed to have regard to changing circumstances.

Despite the trend that might exist to sue councils rather than individuals or other organisations for claims of negligence, these sorts of suggestions may assist councils with any potential liability that might arise from an alleged failure to observe their statutory obligations.

At the end of the day, councils need to be mindful and ever vigilant that other spheres of government may have expectations that may go beyond the ability of councils to respond. Councils need to be realistic about their emergency management role, the obligations that are imposed on them and indeed their community's expectations.

Conversely, other governments need to acknowledge that local government has the same limited ability, as they do, to be all things to all people. Emergency management is about minimising, identifying and managing risks to the community and providing appropriate responses to disasters in the best interests of the community.

Emergency Expo '98

Werribee Racecourse, Victoria
October 2nd–3rd, 1998

Bigger and better in '98

Emergency Expo '98 will be held on Friday 2nd and Saturday 3rd of October 1998 at the Werribee Racecourse, Victoria.

Organisers say the event promises to be the 'biggest, best and most comprehensive trade and emergency services expo ever held in Australasia'.

It is expected that over 150 trade exhibitors will be attending, displaying and demonstrating some of the latest equipment for emergency service operations.

An extensive range of workplace safety equipment, fire protection and suppression equipment will also be displayed. In addition, emergency services and others incorporated under the Victorian Emergency Management Plan will be participating. The defence forces will also be attending.

The two-day event commences with a 'trade day' on the Friday, followed by a 'family day' on Saturday. Both days will feature continual displays, a carnival and an array of interactive activities.

For exhibitor or emergency service information contact the expo organisers, Hoppers Crossing Fire Brigade, on:

Phone (03) 9748 0829

Fax (03) 9748 8341

email: hcrossing.fs@cfa.vic.gov.au

Further information can be accessed on the Emergency Expo '98 web page:

www.vicnet.net/~hxfb

Correspondence can be made to:

PO Box 1126, Hoppers Crossing,
Victoria, 3029, Australia

Odd spot

The call — 'There's a croc on the runway at Townsville Airport' — was welcome comic relief to Queensland's State Disaster Co-ordination Centre staff during the recent Townsville floods, in which the airport itself was flooded.

Apparently reopening Townsville Airport became complicated when maintenance staff were required to row rather than drive out to airport navigation installation to refuel the generator and found it covered with snakes! When these were removed and the all-clear was given, a second refuelling team rowed out and found, instead of snakes, a huge crocodile standing guard by the generator!

All in a day's work!

from Samantha Keegan and Dilka Whish-Wilson, Queensland Department of Emergency Services

Integration of emergency management into day-to-day local government functions

by Greg Burgess, General Manager, Municipality of Tasman

This article is very much my personal account of events after the Port Arthur tragedy. I hope it will give some insight into how a small rural council in the south-east corner of Tasmania dealt with a tragedy of world significance.

It is not meant to be a 'manual on how to deal with disaster recovery'. Any disaster will have unique characteristics that sometimes demand unconventional responses — ones that are not written in any plan or text. However, the experience of the past eighteen months has reinforced some basic principles that apply in to any disaster recovery, namely 'information', 'communication', 'leadership' and 'co-ordination'.

It is also very helpful, if you are fortunate enough, to have one or two people on the team that have the ability to manage the media!

Planning

In Tasmania, all municipal areas are required, through the Emergency Services Act, to have an Emergency Management Plan.

Tasman Council has a plan. Like most emergency management plans, it identifies hazards, talks about command and control, operation support centres, administration and finance, communications, response and recovery.

However, we didn't have this hazard one listed. While the response was immediate, the recovery has been traumatic and will be going for a number of years.

The community

Tasman is a small rural municipality located on a peninsula in the south-east of Tasmania. It is a small, close-knit community of 2200 permanent residents which can swell to around 8000 with the summer holiday influx. The community is island-like, fiercely protective (some would say 'inward looking'). It is an extremely beautiful part of the world. The economy centres around tourism, agriculture, aquaculture, forestry, and

Presented at the Local Government Executives Briefing, Australian Emergency Management Institute, Mt Macedon, Friday October 10, 1997.

chicken farming (whose importance will take on greater meaning a little later).

It has basic services like a district school, doctor, one-man police station, nursing home, shops, taverns and hotel/motels. It is about 1¼ hours travelling time from Hobart.

The community is very well served by a volunteer emergency service group consisting of ambulance, State Emergency Service and fire brigade. These receive, quite deservedly, strong support from Council and the community.

The population is a mix of the old established families — sometimes referred to as the 'gate keepers', newer settlers generally attracted to the area by its beauty and lifestyle, and an element of alternative 'arty-crafty' folk.

The council is one of the smallest in Tasmania. It boasts a total administrative, technical and day labour workforce of fourteen and 'buys in' specialist services such as engineering and planning. It also runs the nursing home with a permanent part-time staff of thirty. The total operating budget is around \$28 million. *We are not big.*

So there we were, this small, isolated community 'plunged' into the world spotlight for all the wrong reasons, struggling to understand why this had happened. The tragic events of the 28th April 1996 left thirty-five dead, nineteen injured, countless others horrified, bewildered and emotionally scared for life, and a community totally devastated.

It is a fitting recognition of the professionalism and dedication of the volunteer and professional emergency teams that all nineteen of those injured survived. The media arrived 'en masse'. I can recall Mayor Neil Noye's first interview was held at the Council chambers at 1.00 a.m. on April 29th. That would prove to be the first of many.

The next few days were chaotic. The media, grief counsellors, Department of Community and Health Services staff, Police and State Emergency Services personnel were all new faces in the community. Communications and office facilities were hurriedly 'put together' and all this to the back drop of a community that moved in stunned silence ... frightened to speak, frightened to smile or laugh, frightened to live. It was as though someone had pressed the 'mute' button whilst the remote was pointed at Tasman.

Leadership and direction was essential and that role fell squarely on the shoulders of Council and in particular, Mayor Neil Noye. With guidance and assistance from State Emergency Services Officers and staff from Department of Community and Health Services and the Premiers Department, a local Community Recovery Committee was established under Neil's chairmanship.

The committee was made up of representatives from service clubs, clergy, council, Port Arthur Historic Site, police, general practitioners and Department of Premier and Cabinet. Its primary purpose was to develop community driven strategies to advance the recovery process and its meetings were open to the public. This provided an opportunity for anyone to bring forward issues, make comment or just listen.

The dissemination of accurate information was essential and a media liaison officer was seconded from the Government media centre to handle this important area and to manage the constant media requests. The demands on staff and elected members was enormous, particularly Neil. Hundreds of messages of condolence and offers of support arrived daily, and dealing with these required additional resources.

We had all known people who had been killed — school mates, friends, the couple who had worked with you on the local tourist association, the little girls

that your own child had been at school with only several days earlier. We had all been touched very deeply and very personally. There were many tears, periods of silence and quiet reflection during the days that ensued, but with support, by way of personnel and financial assistance from neighbouring Councils, the day-to-day wheels kept turning.

What soon became apparent was that the community would soon face a second disaster — a collapse of the local economy that is principally tourism driven. Understandably, people were staying away and cancellations were the norm. There was an urgent need to get the message out to Australia that, whilst this terrible tragedy had happened, the area was safe, was as scenic and as beautiful as ever and all the features, both natural and man-made, that attracted people to the area were still there.

This was helped when Neil Noye and Premier Rundle embarked on a hectic five-day visit of the major Australian cities and centres. It was an enormous task with constant media engagements, functions and schedules to be met. The message was reinforced time and time again, as was the heartfelt thanks to all of Australia for the wonderful and caring support that had flowed to our small community.

Back on the Peninsula the Community Recovery Committee were active in organising the Community Memorial Service, aimed at drawing the community together to share their grief and support for one and other. It was a moving and beautifully simple service held in the ruins of the convict church at the Port Arthur Historic Site.

This was followed several days later by a State Memorial Service at St David's Cathedral in Hobart and finally two weeks later and open Memorial Service at the Port Arthur Historic Site. There were times when you were tempted to say '... not another memorial service', but then you stood back and reflected that this tragedy, this cruel waste of life has hurt all of Australia, if not the world. People wanted to pay their respects and grieve in their own way and time. No one had the right to deny people that opportunity.

The Committee was also heavily involved in organising a Family Picnic and Music Fun Day on 25th May 1996 at the Port Arthur Historic Site. This may sound a little bizarre and insensitive to hold such an event within the historic site, only one month after the tragedy.

But it was a very important event for two reasons:

- it was the community, in the broadest sense, reclaiming the Historic Site as a place where people from all walks of life could come to enjoy the history and the quiet beauty, and to experience Port Arthur.
- it was seen as an opportunity for the community to enjoy itself, to say, 'yes, it is OK to laugh and to relax'. To my mind, this was a very important and significant event.

The Council response

May and June are particularly busy times in local government, with budgets, estimates, works programs, annual operating plans, Grants Commission hearings, just to name a few. Trying to integrate the recovery process of emergency management was simply too great a task, given the limited human resources available to Council. There were two options, as far as Council were concerned:

- direct me to concentrate totally on the recovery process and bring in a relieving general manager for an initial twelve months, or
- appoint a specialist community recovery and development coordinator.

I was tempted to try convincing the Council that the first option was the correct way to go, after all I had been there all of two-and-a-half years. Surely I knew the community by now ... 'I had been there from the beginning, I had been involved'.

As it turned out, more rational thinking did eventually hit me and it was recommended and accepted that the Community Recovery and Development Coordinator be appointed. I believe it was one of the most important decisions made in advancing the recovery process. I say that mainly because of the caliber of the appointee, Susan Parr.

At the time, Susan was the Director of Community Services with Hobart City Council and had worked in that field for fifteen years. Susan actually approached Tasman Council to see if there was any way that she, as an individual, may be able to help. After interviews, Susan started a twelve-month secondment from Hobart City Council. The position was funded by Department of Community and Health Services, there was no operating budget and the shortfall in salary was 'picked up' by Hobart City Council. Such was

the level of support that local government throughout the State was prepared to provide.

Before appointing Susan, I can recall expressing some reservations to Neil, not about Susan's obvious skills or professionalism, but how someone from a large organisation like Hobart City Council, with support staff, information technology systems and so on, would fit into this small work environment and deal with it. I wondered how it might impact upon her family given the demands of the position.

The reassurance came after another long telephone conversation with Susan's then boss, Gary Storch, who was General Manager of the Hobart City Council. After giving my reservations, he replied 'she'll roll up the sleeves and do the washing up when she has to'. That was good enough for us. Susan started duties on 23rd July 1996.

Remember the chicken farming? Shortly after she finished her time with us, Susan wrote:

As a member of the Hobart City Council Emergency Management Team, I had been involved in the preparation of the Recovery Plan for the City of Hobart and was fully aware of the key principle of community ownership of recovery. However, recovery was something nebulous and to be dealt with after we had done the heroic stuff of dealing with the immediate emergency of saving lives, property and feeding people. So with no experience in an event like this, a real determination and commitment to be of service, I set off for a year in the Tasman. The contrast between my Hobart Local Government experience and my introduction to the smallest municipality in Tasmania was delightfully demonstrated to me by the following situation:

As a farewell gesture, the former Lord Mayor of Hobart, Alderman Doone Kennedy invited me to a formal reception in the Town Hall, complete with red velvet upholstered furniture, plush carpets, antique furniture, chandeliers and the Lord Mayor bedecked in Lord Mayoral robes and chain of office.'

'Two days later I began work at Tasman and was busily trying to move into a 'make-do' office when at the end of the day, a knock at the door heralded the arrival of the Mayor of Tasman. Neil Noye was dressed in the gear he always wore when he was cleaning chicken sheds. The welcome was warm and pungent and marked the beginning of an excellent relationship with Neil, which I will always cherish.'

Nothing could more clearly demonstrate the difference in working environments.

Neil, Susan, myself and Michael Leonard, our Regional Economic Facilitator, soon formed a solid working relationship that helped us and the community through many difficult situations.

By this time, the Community Recovery Committee had 'lost the plot' a little, and were determined and convinced that they could solve all the pre-existing ills of the community — particularly unemployment, and ownership and control of the Port Arthur Historic Site. It had to be restructured and refocused and this wasn't any easy task.

Again in Susan's words:

'Their participation in the Recovery Committee was the means by which they were avoiding their pain and grief and trying to come to terms with the growing knowledge of their own sense of personal violation. I am highlighting these points because they are critical to understanding the complexity of the issues that were generated by this tragedy, particularly for those who were not injured, but who had to deal with the consequences of the acts of Martin Bryant.'

As we started to get a handle on things, Bryant pleaded *not guilty*.

This was an enormous 'brick wall'. People realised they may have to relive the horrors of that day, be called to give evidence and be cross-examined, perhaps in a very hostile way ... what a nightmare! Those principles I highlighted earlier (information, communication, leadership, co-ordination and media management) were all called into play. Fortunately, Bryant eventually changed his plea and this provided for some certainty in the planning process.

You may be surprised to know that to this point, the Federal Government had refused to provide any special financial assistance to Council or the community to aid the recovery process.

Yes, they had guaranteed \$2.5 million to the Port Arthur Historic Site to build a new visitors centre and a replacement cafe for the Broad Arrow, but the community had no access to any part of that money. What became more frustrating was that when specific submissions were presented under existing program 'boxes' on several occasions a reply came back from the relevant Federal Minister ... 'sorry, use part of the \$2.5 million the Prime Minister has already granted' ... a total lack of understanding at the Federal level. Eventually, we did have

success in gaining some Federal funding after a co-ordinated approach was developed between Council, Port Arthur Historic Site and community groups and assistance from Senator Paul Calvert. The funding secured provided for:

- continuation of the Community Recovery and Development Coordinator's position for 12 months.
- continuation of the Economic Facilitator's position, also for 12 months.
- new part-time position of Tourism Development and Marketing Officer for 12 months — this was particularly important given the massive downturn in the local tourism industry.
- New part-time position of Youth Development Officer for a 3-year period. Potential youth problems had been identified as a 'sleeping giant' that would emerge over the next few years.
- 'TASK' training package to provide training and upskilling in the tourism and service industry.

Bryant's sentencing took place on 22nd November 1996. I cannot emphasise how important it was to manage the media during that period. Strategies were prepared, protocols developed and I must say that, in the main, the media reacted responsibly and sensitively.

I mentioned earlier that Susan's skills and professionalism were never in question. They certainly came to the fore during this period — protecting Neil, deflecting requests and questions, preparing media releases in conjunction with Port Arthur Historic Site staff, scheduling controlled press conferences. I hate to think what it would have been like if that level of control and determination had not been there.

We then started to prepare for the next milestone — Christmas. This is a particularly difficult time for those experiencing their first Christmas without loved ones. We were fortunate in gaining the support of Alan Anderson, a Minister from Nowra, who is a specialist in grief loss. Alan had assisted the community immediately after the tragedy and his presence during the lead up to Christmas and the work he undertook was a great comfort to many.

It was around this time that former Australian test cricketer Keith Stackpole telephoned me to discuss the possibility of bringing the Australian One-day Team to the peninsula for a light hearted 'hit and giggle' match against a local side. The Australian team would be in Hobart

on 6th January 1997 to play Pakistan, and had at least one and possibly two free days. This was a great idea and just the thing for the community to focus on around Christmas.

The proposal was immediately floated with the Port Arthur Historic Site acting management, who warmly received it. Over the next few weeks Keith and I were in regular contact and a proposal was worked up and a formal presentation put to the Port Arthur Historic Site Board of Management to hold the event at the site on the cricket oval, arguably the oldest in Australia.

To our surprise there was a lukewarm reaction. Apparently some 'imported' staff were opposed to it and were not prepared to support the proposal. A day or so later I received a telephone call from one of the 'imported' staff advising me that the match would not be proceeding.

As you can probably imagine, those of us who had been working so hard to pull this together were absolutely amazed. Here was a great opportunity — a 'once in a life time' opportunity — to give the community something, to assist in the recovery process and it was being rejected. What do we do?

Next morning the headlines in the Mercury newspaper read '*Port Arthur snubs cricket stars*'. The following day the Mercury headlines read '*Backflip over All Stars match — Minister Groom intervenes and guarantees the All-Stars cricket match will go ahead*'. To this day, I have no idea who 'leaked' the Port Arthur Historic Site refusal to the media or briefed the Minister's advisors about the 'benefits' of the match.

We survived Christmas with much of it being taken up organising the Port Arthur Cricket Classic. The willingness of so many people to give up their time and assist with preparations during the Christmas break still astounds me.

The match went ahead. It was a great success and raised around \$30,000 for the Tasman Trust, a community trust established after the tragedy to assist with community development projects. The new structure of the Community Recovery Committee was more focused and working well. A community recovery plan was developed and endorsed by the council and the committee.

It focused on moving from recovery to development and whilst it has been in place for only seven months, it is proving very much to be the foundation on which the community will rebuild. The first anniversary was another major

milestone that had to be planned for and managed. What started out rather shakily turned out to be a wonderful event, a day when many people drew a line in the sand, discarded the baggage of personal suffering and pain of the previous twelve months and made a conscious decision to move forward.

Perhaps the day is best summed up in the words of Keith Moulton, father of Nanette Mikac and grandfather of Madeline and Alannah Mikac, who were all killed in the tragedy. He said:

'The anniversary commemoration got the monkeys off the backs of so many people. It brought people together again, for a short time, in recognition of not only shared grief and pain, but also the survival of a year of personal and community angst'.

Looking back over that twelve month period, I marvel at the support that came from the Australian community, the continuing selfless commitment shown by so many, including my

staff, the guidance and assistance provided by Department of Community and Health Services staff and State Emergency Services personnel, particularly during those first five to six weeks, and the strength and ongoing commitment shown by counselling personnel.

It was a fragile environment that could so easily have shattered and fallen apart. The community was fortunate in having two people that in my mind held it together: Mayor Neil Noye (now AM) — the grandfather and farmer, who rose to the occasion to show leadership and guide his community through the most difficult of periods, who made tremendous personal sacrifices and has only recently undergone by-pass surgery — and Susan Parr — the lady from the 'big smoke' who helped a small and devastated community, gave so much of herself and just kept going when others were burnt out or just incapable of handling the task. The community owes them both an enormous debt.

With the benefit of hindsight, we didn't always make the best decisions. What was important though was that decisions were made, based on the best information available at the time and in a consultative environment, and were put into action. There was no 'paralysis by analysis' — there was no time for that — the process just kept moving. Our community still has a long way to go. The tourism sector has been hurt very badly and with so many residents reliant on that industry for employment, the 'ripple effect' has been widely felt. There are many positive signs.

You can never plan to prevent an incident like the Port Arthur tragedy. It's a sad reflection on our society that we might believe we have to.

Can I once again reinforce those key principles that became the cornerstone of recovery: information, communication, leadership, co-ordination and media management.

They are vital.

Letter to the Editor

From Nick Carter

Dear Sir,

May I request space in your journal to comment on Nicholas Kanarev's article 'The Political Nature of Disasters—Part 2', published in the Summer 1997–98 edition.

Kanarev is drawing a long and rather inept bow when he makes the veiled suggestion that I might have faced a conflict of interest as a member of the 1983–84 Bushfire Review Committee. By that time, I was an established international consultant of some 5 years standing. Thus, my views and judgements were more influenced by this international experience than by past association with Federal Government institutions. Indeed, this overseas experience was a significant factor in my selection to the Bushfire Review Committee.

Moreover, Kanarev is being mischievously misleading when he refers to me as 'the administrative head of the Australian Counter Disaster College', as if I were some sort of dogsbody responsible for ordering the rations or dishing out paper clips. As I recall, I was appointed Director of the College, with clearly defined responsibility for all aspects of its functions.

Kanarev's snide manipulation of the facts reflects no credit on your otherwise excellently professional journal.

Yours sincerely
W Nick Carter

The local government response to Port Arthur: a personal experience

by Neil Noye, Mayor, Tasman Council

Port Arthur falls within the Municipal boundary of the Tasman Council. On 28 April 1996 the community found itself thrust into the international spotlight as a result of the shootings at Port Arthur.

The Tasman municipality contains many areas of tourist interest, and is heavily depended on tourist trade for its economic livelihood. The Council was faced with a range of problems following the tragedy at Port Arthur, including shock at the numbers of people killed, impact on the economic infrastructure as a direct result of the loss of tourist earnings, and how to handle the issue of 'community recovery', a process that was recognised as being complex and protracted. The Council and key community members were able to recognise the importance of the tasks before them, and put in place structures that ensured that the adverse effects of the tragedy were minimised as much as possible, and that the Tasman community could look to the future with confidence and security.

Sunday 28th April

I was fencing with my son on my property, which is 7 kilometres from Port Arthur. I saw one ambulance go up the road and, shortly after, another. I wasn't too worried at the time as we have two ambulances in our volunteer group. When I saw a police car follow, I made contact with our local nursing home which has two emergency beds. At that point I was told that someone was running amok at Port Arthur with a gun. They were not sure of any other details.

I then tried to contact Port Arthur, but couldn't get in because the lines were jammed. I managed to contact houses just out of Port Arthur, and was told that there were up to twenty people dead in one area — the media were still saying three or four.

I then contacted the Council General Manager and went down to the Council Chambers at Nubeena, fourteen kilometres from Port Arthur. There we opened the telephone lines with the Police Task Force at Taranna. At around 4 p.m. the Police contacted me and

This paper was presented at the Port Arthur Seminar, 11-12 March 1997, Melbourne. Readers should bear in mind that it is Neil's personal experience related one year ago.

Neil's involvement with Local Government extends over 28 years, including nine years as Mayor. He was also the local SES Co-ordinator for seventeen years, retiring in 1996. The Council of nine people serves a relatively small community of 2,200 permanent residents.

requested Council plans of the Seascope Cottage. We got those out, and took them to the Police Headquarters where I introduced myself and made myself known. I advised them that we would keep the telephone lines open from the Council Chambers for anything they needed. It was about 6.00 p.m. by the time I left Taranna and returned to the Council office.

We remained there that night, and gave our first media interview after midnight. The media wasn't supposed to have got through because of the road block. The interview went well but it was pretty unexpected. At this point the Police were in charge of the whole situation, and I was of the view that we were there to assist them wherever possible.

At around 2 a.m. (Monday) the Police contacted me and wanted a bulldozer supplied to Seascope to block the entrance, and possibly provide protection for any subsequent Police action. We made arrangements for that.

At 8 a.m. we had the Council Chambers open. The General Manager and myself were there full time answering media calls from around Australia and the world. We were really the only two running it. The telephone lines were then jammed until nearly midnight.

It was 'full-on' for the first week, until we organised a media officer to assist. As we did not have a media officer on council staff, initially one, then another, was provided by the Premier's Department. The rest of the Council staff were traumatised and were not at work. The General Manager and I kept the office running. All Council business

was put on hold for perhaps three weeks to a month whilst we concentrated on the matters at hand.

Within the first week, we issued all Councillors with a fax machine so that we could quickly distribute information to them. Any piece of news or information that came through was therefore quickly sent to all councillors.

Formation of the Community Recovery Task Force

On the Tuesday evening following the shooting, we formed a Community Recovery Task Force, with fourteen on the Committee. Anyone in the community could come to the task force meetings and could vote on any issue.

The role of the task force was to inform the community as to what action the Council was proposing. Those that were in some way affected by the tragedy needed to be given something to do. The task force therefore formed a number of sub-committees: the Memorial Committee, the Trust Fund Committee, and the Entertainment Committee.

The Trust Fund Committee was formed over and above the state-level Port Arthur Appeal Committee. We found that where people wanted to be involved, we gave them a committee job — where they weren't satisfied, we gave them two committees to be involved with!

We also established a community newsletter, distributed twice a week. This covered every household in the area and contained details as to what we were doing, and asking for their input. It was probably the most beneficial thing that we did for the community. They wanted news, and the information was critical. More than once I got messages on my answering machine, and when I rang back to see what they wanted, the person would say that they didn't need me now, and that the newsletter had given them everything that they wanted to know. We felt that if there was anyone traumatised, it was important to get them involved with Council or one of the committees, and we could use the newsletter to do this.

We received a tremendous amount of advice from the Department of Community and Health Services, the State Emergency Service and the Premier's Department, but we had decided that we were going to do our recovery from inside. We were happy to accept help from outside, but the main effort and direction had to come from us.

Politicians were kept away — we wouldn't have a bar to do with politicians! They were ringing up left, right and centre, but we asked them to stay out of the way — just let us get on to do what we do ... 'We'll let you know when its time to come in.'

The first of the real milestones in the recovery process was the local community Memorial Service for those who had been killed. This was held at Port Arthur on Friday 3 May 1996, and was important in keeping the community together and ensuring that people were involved in the recovery process.

One very important aspect of the council involvement was the tremendous part played by the General Manager and the accountant. They put in extremely long hours each day, all week, and they didn't once give in. We gave the General Manager a fortnight off for the time he had put in, but during this he kept coming into the office every day to ensure that things were going properly. There was no asking for overtime, or only working to fixed hours. Many nights we were there till well after midnight — as long as it took to do what we had to do.

Visit by the Prime Minister to the Port Arthur site

At one point the Premier of Tasmania wanted to get in touch with me. My line was jammed, so he rang the next door neighbour and asked them to get in contact with me.

This was because the Prime Minister, John Howard, was coming to Port Arthur, and the Premier wanted me to meet with him at 8.00 am. I said that I couldn't as I had to be in Hobart that same morning to do the reading at the State Memorial Service at St David's Cathedral. The Premier said not to worry about that and that he would look after things.

So following the meeting with the Prime Minister, I flew directly to Hobart by helicopter, and was there in time to read at the State Service. It was the first time that I had seen my cattle, and particularly my cows calving in three weeks — and that was from a helicopter!

Delegation visit to other Australian states

A delegation comprising myself, the Premier and the Chairman of the Board of the Port Arthur Historic Site was formed. We visited each of the Eastern Australian States over the course of a week, and thanked the people for what they had done for us. This was a particularly memorable experience.

We met with members of the Victoria Police Special Operations Group who had assisted at Seascope Cottage. They were very pleased that we had taken our time to go and thank them for what they had done for us.

We then went to Ballarat and visited children who had lost both their mother and father. We met them at a lunch hosted by the Ballarat Shire. We did a number of major interviews in Victoria, before going to Canberra where we met with school children who presented a cheque for money that they had raised.

We continued with interviews in Canberra, and attended a dinner at the British High Commission. We then flew to Sydney and continued with the extremely long days of media interviews and visits. From Sydney it was on to Brisbane, where patients at a hospital for terminally ill children presented us with a cheque for Port Arthur.

By this stage, the issue of the debate over gun control was starting to come in and the media didn't want to talk so much about Port Arthur, but rather about this issue. After dinner on each of the nights we were away, we would meet and plan our strategy of what we would say the next day.

We returned to Melbourne after Brisbane, and from there went to Adelaide. There we continued the interviews with a range of media sources, before finally returning to Hobart.

The whole trip was extremely beneficial. The people were hungry for news, and we visited wherever possible the Tasmania House in each State, and spoke with the staff there, as well as the media generally. Our main aim was to thank the people of Australia for what they had done, because they had been marvellous.

Economic impact of the event on the municipality

We recognised as a Council that the shootings would have a profound effect on the economy of the area. Port Arthur itself was closed down for three weeks, but some of the businesses did not suffer quite as badly as the others because they received the additional business from the

media and government departments who were now operating in the area.

We could see this, and contacted the Premier's Department and Tasmanian Development and Resources (TDR) to get them into the district and circulating around. Port Arthur started to recover after that initial three-week period. People come back in different ways. It wasn't only tourism — the people of Tasmania really got behind it and that was excellent for Port Arthur itself. That was coming back nicely.

But at the fringes — the caravan parks, holiday homes and other accommodation — they were really hurting and this was the case until the end of 1996.

TDR were slow. They had promised interest assisted loans and restructure of existing loans, but until I contacted the Premier before Christmas, things had been slowing down. This was probably due to the restructuring that the TDR has recently gone through. After I contacted the Premier, the loan assistance started to come through.

Overall we have had a tremendous amount of assistance from the Government and from various departments. The Prime Minister also allocated \$2.5 million specifically for the Port Arthur Historic Site. A lot of people thought that the assistance from the Federal Government was for us, the community. But it wasn't. It was given to the Historic Site to rebuild the visitors' centre and to upgrade the car park. The demolition and rebuilding of the Broad Arrow Cafe was another issue.

We also received assistance from Sorell Council, our next door neighbours. They allocated \$10,000. In addition, a number of other costs were picked up by the State Government.

But as a council we were meeting a number of unforeseen expenses from our own resources. Until the end of June, we had recorded an additional \$56,000 lost in terms of telephone costs, salaries etc. and this was becoming a real burden on ratepayers. We were starting to get a bit 'uptight' about it. We contacted the Federal Government, and they said we had to deal through the local Premier, which we of course had also been doing. The State Government eventually came through with \$50,000.

We have also had to increase rates, with some of the increase due to Port Arthur. However, we realised that everyone in the community was hurting, and we endeavoured to keep any increases down to a minimum.

Personal visits to members of the community

On the Tuesday following the shooting, I visited all the local people who had lost loved ones. I knew eight of the people who were killed and I knew the perpetrator — I had met him twice. We had previously met when he had come to my property and wanted to buy calves off me for a property that he owned at Copping, north of the Tasman Peninsula.

Funerals of the deceased

As Mayor, I attended a number of funerals of those killed, both in Tasmania and interstate. These were very traumatic experiences. Local Government was responsible for meeting the cost of my attendance at these, but when I was talking to the Lord Mayor of Hobart in passing one day, she offered to meet the cost of the interstate air fares from her own sources. This was particularly helpful.

Other financial costs

I receive an annual \$7,000 Mayor's Allowance. I have not claimed any additional costs as a result of Port Arthur, and have walked away from my business for months at a time.

I have told the municipality that I will not claim any out-of-pocket expenses unless the State or Federal Government compensated the council. I couldn't ask my ratepayers to 'carry' Port Arthur any more than they were, which will eventually be hundreds of thousands of dollars — significant in our small community.

Significant events from the early recovery process

We were told a number of things that had arisen as a result of the Dunblane shootings, particularly in relation to the troughs and peaks that we would experience during the recovery process.

I initially thought that we would be strong enough to get through, but what they indicated in relation to this was true. Some of the local community wanted to go to the preliminary court hearings of the gunman. I tried to talk them out of going. They insisted on going, but afterwards came back and told me that it didn't improve them much at all. For some it was an extremely traumatic experience.

Another issue was that some residents wanted to take control of much of the recovery process.

During meetings of the task force, there was some opposition to people

from the gallery offering their views directly to the task force, and being allowed to vote.

There were quite a number of people in the task force and in the gallery who were under extreme pressure. They were not thinking rationally at the time, but in time they started to get their feet on the ground, and realised that the whole community needed to be involved with the task force during the recovery process.

This agreement of the community to any action also extended to the media. The *Witness* TV program approached us and wanted to come and interview members of the community. But they wouldn't do it unless the local people agreed.

The task force voted on this proposal, and I accepted a vote from the public gallery too. I wasn't personally in favour of the *Witness* reporters coming, but I was in favour of them getting the view of the community that they didn't want them. As it turned out, the interviews were well conducted.

The future

We think now that the community is slowly starting to recover, but the process will go on for at least another twelve months. Some of the people who have lost loved ones are starting to get their feet back on the ground and feel positive.

As a Council we are looking to the future, and trying to build up the municipality. We have a lot of new enquiries coming in for accommodation, and the establishment of new businesses. Out of the tragedy of Port Arthur, we have received a tremendous amount of publicity, and we want to look at the positive aspects of this

The Recovery Task Force has now been made a formal committee of Council, and we will confirm from a list of nominees a committee of twelve community members, to meet monthly. The committee will also formally establish a number of sub-committees such as the Special Events Committee, the Memorial Committee, and the Community Radio Committee.

The idea of a community radio station will address the real problem that we have in the local area of poor communications, which was a significant issue operationally during the Port Arthur incident. Mobile telephones don't currently work in the area, but we are told that this is being addressed. The initiative of the radio station preceded

the shootings, but this has now been given more impetus and importance.

The community is looking at the establishment of a suitable memorial to mark the event. We have invited comments in newspapers throughout Australia, asking what people consider would be a suitable memorial. About 72 per cent of the respondents suggest that we should use part of the Broad Arrow Cafe or its grounds as the focus point of the memorial.

I am also involved with the Port Arthur Appeals Committee, which is headed by a Queens Counsel as chairman. At present we have approximately \$3.3 million. This is taking an enormous amount of my time, particularly in responding to media articles that suggest that there may not be enough money, or that no funds are available for the head stones of the victims, for example. Generally however, the media have given me an armchair ride, and have been very understanding, both nationally and internationally.

The Port Arthur Historic Site

There is still a lot of work also to be done in relation to the staff at the Port Arthur Historic Site. They are still hurting. The community and staff at the site need to be drawn closer together, and the management of the site and the community also have to come together.

I've worked well with the management of the site, but many people feel that they have been left out. It's been a bit fragmented at times, and there have been problems, but we are slowly overcoming them. It's all part of being a small community. This was also one of our biggest assets, in that everyone generally knows everyone else.

Conclusion

I would like to thank the many and varied organisations that have assisted the Tasman Community, particularly Tasmania Police and the State Emergency Service, and the Department of Community and Health Services which includes the Tasmania Ambulance Service. Also to the staff at the Royal Hobart Hospital, particularly the nursing staff, who may not have received the level of recognition that they rightly deserve.

I am acutely aware that in thanking people that it you leave just one group off, they get offended. This is not the intention, and the Tasman community owes a tremendous debt of thanks to all the people of Australia for their support and help.

Management of support services at Port Arthur

by Peter Fielding, Manager — Family and Individual Support Services (Southern Region),
Department of Community and Health Services, Tasmania

The Tasmanian Emergency Welfare Plan identifies the Department of Community and Health Services as lead agency for providing personal services in the event of a disaster. The department is also responsible for the planning and co-ordination of these activities.

The range of recovery services for which the department is responsible includes community counselling and debriefing, accommodation, child care, clothing, legal services, financial assistance and referral services for victims.

Immediately after the shootings, the Department established a recovery centre at the SES Headquarters at Nubeena, 15 km from Port Arthur.

The management of a comparatively large, 24-hour relief effort in a small rural community required a delicate balancing of resources while being sensitive to community needs and expectations. The centre played a significant role in ensuring that support services were responsive to community needs.

Introduction

An underlying principle in the provision of personal services is that recovery works best when conducted at the local level with the active participation of the affected community and maximum reliance on local capacities and expertise.

Early on Monday 29 April (the day after the shootings) a team of six counsellors established a presence at the Nubeena centre, providing an immediate information, advice and counselling support service. By that evening it was apparent that an operations centre was required to support these services and identify the on-going needs of affected individuals and the community.

A management team assembled in Hobart by mid-morning on the Tuesday and arrived at Nubeena early that afternoon. The SES centre was an ideal location as it was close to the Council chambers and was seen by local people as a legitimate focus for support services. It also enabled us to establish close links with the SES volunteers who were to

Presented at the Port Arthur Seminar, 11–12 March 1997, Melbourne.

perform a crucial role in working with our teams on the Peninsula.

By noon Wednesday the operations centre was fully established, providing a local base for 24-hour, personal support services. During the first two weeks, the centre was staffed by 35 counsellors and 5 administrative staff. Staff were rostered on three shifts between 7.30 a.m. and 10.00 p.m. each day. Two workers were rostered on an overnight telephone counselling service between 10.00 p.m. and 7.30 a.m. This service was based across the road from the centre in a room at the local motel.

The teams worked two days on, with an overnight stay on the Peninsula, then rostered off for a day between shifts.

On the Peninsula, nearly 400 people (out of a population of 1600 people) sought face-to-face or telephone counselling or information. A significant number requested follow-up assistance.

About 80 individuals were registered as having made direct contact with the operations centre in the first week. The actual number may be higher as not all contacts were able to be registered in the first two days of operations. The second week was much quieter, with demand for direct services to individuals dropping to six a day. However many individuals had multiple contacts.

There were no discernible trends in relation to average contact times. Some individuals were seeking information and left almost immediately after being handed pamphlets, while others required several hours contact time. One hour plus seems to be an accepted average.

The Nubeena centre remained the major focus of relief efforts. However, the Department also set up counselling sites at the Taranna Community Hall and the Eaglehawk Neck Fire Station within one week of the shootings. The sites are located approximately 10 and 17 kilometres respectively from Port Arthur.

These sites were established after requests from local government and members of the communities. It was important to respond to such a strong request from the community.

A perception existed within these communities that all services were based at Nubeena. The provision of counselling services within the Eaglehawk Neck and Taranna communities was seen as an acknowledgment of these areas as communities in their own right.

The sites attracted few referrals during the time they operated. However any discussion related to closing them down met with a strong community reaction. The communities saw them as a safety net if people needed them.

No one in the community actually expressed a personal need to access services at the two sites, but they were certain that others in the community would. This expression of concern for others was to become a common theme in the initial weeks of recovery operations and required special attention and sensitive management by the Operations Centre at Nubeena.

The Taranna and Eaglehawk Neck sites closed after the third week of operations once the initial crisis had passed, having fulfilled a vital, symbolic role.

Roles and responsibilities

Nubeena Centre management

The operations centre at Nubeena was managed by a co-ordinator who was responsible for the operation of the counselling services and liaison with community groups, local government and other agencies working in the area.

A counselling co-ordinator was responsible for rosters, in co-operation with the Hobart operations centre, and for ensuring that requests for assistance were responded to appropriately.

The counselling co-ordinator was assisted by two experienced counsellors who checked each referral sheet as it was completed. This was to ensure that individual requests for assistance were followed up and to prevent over-servicing. The risk of over-servicing was

high due to members of the community referring family, friends, neighbours and work colleagues for support. Multiple referrals were common and a system of assessing which ones should be responded to and in what manner was essential.

A major difficulty encountered in those first few hectic days was keeping track of the whereabouts of staff and visitors to the centre. By Wednesday a system of signing visitors and counsellors in and out was established. This system ensured that we knew who had been to the centre, their reason for being there and most importantly, where the counselling teams were at any given time. It made the job of the counselling co-ordinator much easier, especially when advising members of the community where particular counsellors were and when they could be expected back.

An important step in involving the local community in the recovery process was making use of local resources. In particular it was seen to be important to use local suppliers wherever possible.

To this end, counselling teams were accommodated in motels on the Peninsula during their shifts, and meals were catered for locally. Wherever possible the team purchased goods and services from local businesses rather than having them sent from Hobart.

The co-ordination team met at 8.30 a.m. and 5.00 p.m. daily. The purpose of the meetings was to review centre operations at the end of each day and to ensure that lessons learned were implemented the following day. Feedback from the operational debriefing of counsellors from the previous evening was provided to the morning meeting and adjustments to rosters or tasks were undertaken accordingly.

Minutes from these meetings formed the basis for daily briefing which were faxed to the operations centre in Hobart.

Communications between Nubeena and the Hobart operations centre were difficult during the first week. However, despite some initial problems, requests for changes to rosters or the provision of additional resources were responded to quickly and without question. By the beginning of the second week a system of regular tele-conferences was in place and communications were more orderly and systematic from that time on.

An audit of security procedures undertaken at the end of the first week identified the need for locked brief cases, filing cabinets and a shredder. These were delivered on site within hours of the request being issued.

As it was not possible to install a secure landline for the computers, confidential information was transported to Hobart in locked brief cases at the end of each shift.

The operations centre handled a large number of visitors from other relief agencies, the media and politicians. All were requesting information about how the community was coping and how they could best respond to the situation.

The provision by our department of a media liaison officer at the Council chambers ensured that requests from the media could be redirected.

State Emergency Service volunteers

The local SES volunteers played an important role in enabling the department to provide support services on the Peninsula through the provision of local knowledge and expertise.

Many had been in the front line response on the afternoon of the shootings and continued on duty over the coming weeks, working with counselling staff at the operations centre. They were able to provide advice and assistance on local conditions and services. They also kept the operations centre stocked with hot food and drinks and ensured that essential services were maintained. They earned the respect and friendship of all the staff who passed through the operations centre.

The partnership and co-operation between these volunteers and the department was an outstanding success of the operations centre.

Role of the Army

A valuable contribution to the success of the recovery centre was the role played by a psychology unit from the Australian Defence Force Command Centre. This unit arrived at Nubeena on Tuesday evening, offering to assist in the establishment of the operations centre.

The Army team members were all of senior rank and several had experience in overseas 'hot spots' such as Rwanda and Mogadishu. They undertook a variety of roles including logistical support and advice to the management team on centre operations.

One of their most valuable contributions was as observers, feeding back information about what was working and what was not. It was an essential and highly successful element of centre operations.

The Army personnel commented on how difficult it was to remain aloof from the frenetic activity of the centre during that first week. However, both adminis-

trative and counselling staff commented on the strong impact the Army personnel had in reducing their stress levels by providing 'islands of calm in the storm'.

The Army team also assisted with emergency counselling, especially in the evenings when the rostered teams were called out on home visits.

They were also part of a counselling support team that attended the first community information session, held four days after the shootings at the local school hall.

Communications

Communications on the Peninsula and from the Peninsula to Hobart were fragmented and difficult (to say the least) in the first week of operations.

The local telephone exchange could barely cope with the volume of calls from the Emergency Services, the local community and our own operations centre. One of our first priorities was to arrange for additional lines. A line was dedicated to communications between Nubeena and Hobart. Another was set up as a local 'Hot Line' for the public. A third line was installed for use by the administrative staff, who were liaising with local businesses regarding accommodation, provision of meals and other services for the operations centre.

The turn around time for a request to Telstra was usually only a matter of hours, a remarkable achievement considering the demand from a range of groups working on the Peninsula.

We discovered that mobile phones did not work on the Peninsula. This made communication with key operation centre personnel impossible when they were away from the centre. Within hours of discussing the problem with Hobart operations centre, three satellite phones had been ordered from interstate. They arrived by air freight the following day. Once staff had mastered the intricacies of pointing the miniature satellite dish due east and at an elevation of 30 degrees, communications in the field was much easier.

The satellite phones were only needed for the first 1½ weeks of operations and proved invaluable in overcoming the difficulties that the terrain presented for mobile communications.

Lessons learned

Management of a 24-hour presence on the Tasman Peninsula.

The management of a comparatively large, 24-hour government presence in a small rural community required a

delicate balancing of resources while being sensitive to community perceptions and expectations.

There was some tension in the community between the perception of the government 'taking over' and government being responsive to community needs. An often-repeated comment that we heard in those first weeks after the shootings was 'it feels like we have been invaded'.

We all heard concerns, expressed repeatedly, about the highly-visible presence of large numbers of government vehicles and personnel wearing government identification badges. These concerns were always qualified with appreciative comments about the supportive and caring role undertaken by individual workers.

In order to manage the ambivalent reaction to our presence, the operations centre developed a code of behaviour for staff. Upon arrival, staff were briefed on their role and its impact on the community. Wherever possible, they were to travel and socialise in small groups. This was especially important for staff who were staying overnight in local accommodation. Staff were asked not to congregate and socialise in places that were seen to belong to the locals, such as public bars and restaurants. A roster for lunch and evening meals at local hotels was arranged to spread the groups out. Each group left the restaurants soon after completing their meals, and not delaying any longer than necessary.

Staff who had been working long, stressful days found this difficult, but understood the need to be sensitive to community feelings. It was especially important to understand that many of the staff working in the hotels, restaurants and shops had lost relatives, friends or a member of their immediate family. It was not unusual in those early days to encounter staff or guests in tears or exhibiting other signs of severe emotional stress. Everybody did their best to respond sensitively to these incidents.

Staff who were being debriefed back in Hobart commented upon the added stress that this placed upon them while on the Peninsula.

Convergence

Wherever possible recovery managers need to ensure that their intervention into a community has been negotiated with the community and is responsive and relevant to their needs. Convergence of people and organisations who have not negotiated their presence can often

disrupt community recovery rather than assist it.

Convergence of individuals, fringe religious groups and independent counsellors from within Tasmania and other states contributed to the concern of some community members about over servicing and invasion of privacy.

A common response became 'the next person to ask me if I am OK, or if I need counselling will get a punch on the nose!'. There was no ready answer to the question of how to control this convergence. The issue was discussed at community meetings with local government and management at the site. After discussion with community representatives and recovery centre staff, it was agreed that accredited counsellors would wear photo identification badges at all times and ensure that they only contacted people who had requested assistance.

Wherever possible, outreach services were offered through existing community networks where friends, family or work colleagues were able to introduce counsellors to people identified as requiring support. This strategy assisted in decreasing unwarranted intrusion on people's privacy. Individual complaints were followed up and those found to be responsible were informed of community concern and invited to co-ordinate their activities through the operations centre.

Importance of symbolism

How recovery agencies are perceived to respond to a disaster can often be more important than what they actually do. The message generated by symbolic gestures can be more significant than what is often seen to be a more logical and efficient use of resources by recovery managers. Recovery managers need to ensure that this is taken into account in the planning and response phases.

The establishment of the Eaglehawk Neck and Taranna sites is an example of the significance of symbolism in recovery management.

Treatment versus support

The nature of the response to the shootings generated a debate about the community reaction to professional terminology i.e. the community equated counselling with treatment. The community was much more accepting of services labelled as 'personal support' than those labelled 'counselling'.

Literature advertising the services provided by the operations centre was altered to emphasise the information, advice and support role rather than

counselling. This was done after consultation with community representatives.

An interesting outcome, however, has been a perception that counselling is now more widely understood and accepted in the community than it was prior to the shootings.

The community commented most favourably upon those counsellors who provided practical assistance and 'a cup of tea and a shoulder to cry on'. One person remarked that the 'counsellors were great, especially those who let you know it was alright to cry, or shed a tear themselves'.

Nature of the emergency

Recovery management planning and training has tended to focus on providing accommodation, material assistance and practical help to victims of natural disasters, such as flood and fire. The scale and nature of this event was completely different. We had to adjust to providing personal support on an unprecedented scale. The fact that it was another human being who had deliberately shot so many people was almost beyond comprehension. Many workers commented upon how much more difficult it was for them to function effectively in the first few weeks of the response.

Recovery managers need to understand that the scale and nature of an emergency will affect the ability of workers to function effectively and they need to provide appropriate supports and debriefing to suit the circumstances.

Staff continuity

An additional management pressure on the recovery centre was ensuring continuity of counselling staff. Many individuals and families would only accept support from the worker with whom they had initially made contact following the shootings. They felt that that worker understood what they had been through. They did not want to have to tell their story all over again. The sheer volume of calls for assistance in the first two weeks made it difficult to meet these requests on occasions.

There were many examples of staff having formed close, personal relationships with victims and being asked to accompany victims and their families to the church service at the historic site, funerals and other significant community events. Many staff returned to the Peninsula on their rostered days off to honour these commitments. Incorporating these activities into the rosters proved to be a logistical nightmare.

The need for flexible management arrangements

In the aftermath of an emergency there is a need for management arrangements to be flexible and responsive to community need. There were many examples of innovative and sometimes heroic management decisions in the weeks following the shootings. There was an all pervading 'can-do' attitude amongst those working on the Tasman Peninsula during the initial crisis period. Managers need to ensure that this energy is productively directed and not stifled.

Composition of response teams

Six member teams (five workers and a co-ordinator) seemed to be the most effective unit. Where possible workers operated in pairs. Feedback suggests that those who had worked together previously were the most effective and the least stressed at the end of their shifts. Managers need to ensure that this is built into future planning.

Worker isolation

Recovery managers need to ensure that mechanisms are in place to enable 'front line' workers to receive regular briefings on the broader impact of the emergency.

Staff commented on the sense of isolation, of feeling cut off from the rest of the world while working on the Peninsula. They often referred to 'coming into' and 'going out' of the area. One of the local residents commented upon his surprise at seeing people in the streets of Hobart with tears in their eyes. He had not understood how the tragedy had impacted upon the rest of Tasmanian and Australia until he travelled to Hobart for the memorial service. This was a feeling shared by many workers.

Many who worked on the Peninsula for extended periods of time were surprised by the effort required to re-adjust to being back in their own communities. Everybody relied upon the media to fill in the gaps about what was happening in 'the outside world'. Those who had access to the back copies of newspapers and tapes of television news coverage seemed to adjust more quickly than those who did not.

Conclusions

The Department of Community and Health Services moved quickly to establish a recovery operations centre at Nubeena from which support services were provided.

Heavy demands were placed upon support services on the Peninsula in the immediate aftermath of the shootings.

Feedback from the affected community has indicated that these services were seen to be appropriate and to have met community expectations.

By the end of the third week the crisis response phase was winding down. A team of representatives from non-government organisations and State and Commonwealth agencies was assembled. Their brief was to provide ongoing personal support and to evaluate the need for longer-term strategies. The team was based at the SES centre for a four-week period during this transition phase of the operations.

Did we make a difference?

The answer to this question would seem to be self-evident to recovery managers. However, I have been asked the question a sufficient number of times since the shootings to question our role in the immediate aftermath of the shootings.

A disaster of the magnitude of the shootings at Port Arthur undermines people's sense of normality. Social supports and helping networks within a community become disrupted. Many experience intense feelings of loss, grief and anger. They need to understand that what is happening to them is a normal response to an abnormal situation.

The more information that affected communities have available to them, the less likely they are to require ongoing support and specialist services. Those who understand what is happening to them tend to cope better than those who do not have that awareness.

The operations centre provided advice, support and information to the community to enable them to have a better understanding of these effects and to guide their own recovery. A significant number of individuals required immediate support or counselling due to compounding effects of this and past traumas.

It is the local networks that work best in providing supports to disaster affected communities. The role of the operations centre was to support local networks to manage their own recovery. Practical assistance was also seen as important by the community. For example, professional child care was provided to enable parents and child care workers to attend significant community events such as memorial services and funerals.

Later, massage sessions offered by the Catholic Welfare agency Centacare were booked out. A significant number of Tasman Peninsula residents who did not seek counselling or other support

services attended the sessions and referred many others.

The General Manager of the Tasman Council, Greg Burgess, best summed up the difference we made in his address to the Welfare Administrators Conference in Hobart in 1996.

'It was our responsibility to manage our own recovery. The Department understood that. It did not come in and take over, but offered support, advice and encouragement. When we faltered or were unsure of which way to turn, they were there with a steadying hand to guide us. At no time did we feel as if we had lost control or been taken over.'

That is what we set out to do and that was the difference we made.

Recommendations

A number of recommendations can be drawn from the operation of the recovery centre.

- Relief agencies need to be aware of the significant impact they can have on small disaster-affected communities. Sensitivity to community expectations and feelings is essential.
- Convergence of people and organisations who have not negotiated their presence can often disrupt community recovery rather than assist it.
- The provision of practical assistance in the form of 'a cup of tea and a shoulder to cry on' is more appropriate than providing treatment in the crisis phase of an emergency.
- Recovery managers need to understand that the scale and nature of an emergency will affect the ability of workers to function effectively and of the need to provide appropriate supports and debriefing to suit the circumstances.
- Providing continuity of workers to disaster-affected people is an important issue that needs to be factored into planning and responses.
- Management arrangements need to be flexible and responsive to the needs of those affected.
- Teams of workers who know each other are more effective and are less stressed by the emergency than those who are working together for the first time.
- Managers need to ensure that 'front line' workers have opportunities to access information on the broader aspects of the disaster.
- Managers and co-ordinators should have access to observers to monitor operations and provide feedback on operational issues.

Port Arthur Historic Site Management Authority response

by Craig Coombs, Chief Executive Officer, Port Arthur Historic Site.

'Planning for disaster' is how I would like to title and treat this article. It's an ironic statement because, with the benefit of hindsight, I don't think it is entirely possible to properly put into place the complete system necessary for dealing with the full range of disasters and tragedies that can befall the community and their businesses.

Port Arthur suffered a disaster and, while it was a wholly unnatural one, it was one suffered without warning — one wreaking destruction similar to that of Cyclone Tracey in Darwin or the Newcastle earthquake. Port Arthur suffered more than the combined shootings of Hoddle Street and Queen Street. And in all of these events, was there a master plan for emergency services? If there was it didn't appear for a period of time after the onset.

From this we can infer that what is uniform in any disaster is an initial period of chaos — the period of time where the management structure, chain of command and emergency systems are unco-ordinated. How effective is our planning under these circumstances? Port Arthur faced this 'anarchy'.

Our planning for a disaster, however, was mostly non-existent. Should we have been better prepared? I guess in hindsight the events have given many emergency service managers, other decision makers, and ourselves the impetus to put in place systems for dealing with such a disaster in the future. But will these systems be effective? Can we ever be fully prepared? That is a question I do not have an answer for. I can only say the people of Port Arthur and the survivors of the tragedy pulled together and reached beyond their training and skills and, thankfully, managed this tragedy to the very best of anyone's ability.

Organisation structure

Port Arthur is located on the Tasman Peninsula in the State's south-east, a little more than an hour's drive from Hobart. Its history is almost as old as settlement in Tasmania, serving firstly

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in 1830 as a timber milling station, before becoming the State's principal convict station in 1833. Eventually abandoned in 1877, the site almost immediately became a tourist attraction.

Since 1987, the Port Arthur Historic Site has been managed by the Port Arthur Historic Site Management Authority. The Authority is a quasi-government instrumentality governed by a specific act of the Tasmanian Parliament empowering the Authority to manage the tourist and heritage infrastructure in accordance with broad operational parameters. The Site has a delegated parliamentary Minister, to whom the Authority is ultimately responsible. Prior to 1987, this was under the control of the National Parks and Wildlife Service. More recently, in June 1995, Port Arthur became a Government Business Enterprise, authorising the Site to implement a plan to adopt the philosophies of corporatisation. This strategic document, and consequential management changes, has projected the developmental needs which, along with any necessary changes, will make it possible for the Site to become self-sufficient and self-determining allowing Port Arthur in the near future to divorce itself from political intervention.

The Authority manages its tourism programs and conservation and heritage preservation activities by dividing its core functions into four business units:

- *Visitor Services* — responsible for maintenance and expansion of the tourism and visitor functions on-site
- *Support Services* — the administration department at Port Arthur
- *Heritage and Asset Management* — empowered to manage the conservation and preservation programs
- *Commercial Operations* — concerned with the retail functions at Port Arthur.

Each division has a departmental manager who answers directly to the Chief Executive Officer.

On the tourism front, the Site attracts 210,000 day visitors per year and, until the shootings, 55,000 evening Ghost Tour visitors.

The Port Arthur Historic Site spreads across 600 hectares, with 40 hectares forming the historic core of the Site. This core comprises 81 buildings, and the Authority employs up to 180 staff in the peak season (or 88 'full-time equivalents'). At the time of the event more than 90 per cent of the staff were employed from the local area and many were related. In some instances, children of staff are employed.

The visitor to the Site pays an entrance fee of \$13.00 (\$6.50 for a child), which includes a 40-minute walking tour and a 30-minute harbour cruise.

28 April 1996

This Sunday was a typical Autumn day, mostly fine with the temperature a pleasant 18°C. A little cloud reflected that it had been a very wet summer, with the Tasman Peninsula receiving its total average annual rainfall in the first three months of the year. By 1.30 p.m. there were about 500 visitors on-site. It just so happened that ten of my most senior staff were heading away for a two-day training seminar to Swansea, a seaside resort on the State's east coast, about two hours from the Site. There were 20 staff working under the supervision of the Weekend Supervisor.

In under 30 minutes, Martin Bryant killed 35 people, forever changing the lives of almost every resident of the Tasman Peninsula and single-handedly creating history as being the cause of the world's worst single-person massacre.

The events of the day

The Authority had in its employ a part-time security person whose main responsibilities were to transfer cash between locations, to supervise the parking of cars, and to check that visitors had tickets to enter the Site. The procedure of having a security person rostered on for the weekend had been part of the Authority's policy for the management of cash and visitors since

late 1995. The person who had the security job was trained and registered as a security guard, but was unarmed, as had been the practice since he was employed in 1995. He was the local unit manager of the SES and group captain for the fire brigade.

The security person first noticed Bryant when he refused to park his car where he was directed. Bryant said he wanted to park in the lower car park.

The parking at the Site is tightly managed to ensure that a maximum number of vehicles can be accommodated. The lower car park is usually set aside for the tourist buses and coaches, and for the large hire motor homes.

After directing Bryant to the correct place to park his car, the security person then went about his usual duties. Sometime later he heard 'unusual noises' from the Broad Arrow Cafe, and saw dust rising from the external rock walls, the dust being created by the shooting occurring within the cafe. He approached the cafe only to be confronted by Bryant and the carnage he had caused. He retreated and commenced attempting to evacuate the Site.

The problems he encountered were as follows:

- *disbelief* — people thought it was a re-enactment
- *lack of planning* — there had never been any planning of where to evacuate people to, and any normal evacuation would have probably been planned to muster people onto the oval, which in this case would have been disaster
- *language* — there were about nine different nationalities and many visitors became confused and didn't understand what was happening.

The staff member nearest the phone dialled '000' and was connected to the police, who showed reluctance to believe the call until gun shots could be heard in the background. This line was then kept open until about 5.00 p.m. and proved to be an invaluable link with the 'outside world'.

Once Bryant had left the Site those staff in the immediate vicinity administered first aid. Over 90 per cent of the staff are trained in Level 1 first aid and 20 per cent in Level 2.

Within 30 minutes, visitors started to assemble in the car park. Staff appeared to go into remote control. For example, the weekend supervisor, who had lost her daughter in the Cafe, bravely managed the site until I arrived at approximately 3.00 p.m.

By this time staff were comforting visitors, supplying tea and coffee, and treating most people for shock. There were many relatives of the dead who were very distressed, so I quickly established that it was necessary to separate them from the mass. Consequently one of the historic homes was opened and manned by senior staff and these people were escorted to the house. These relatives stayed until about 7.00 p.m., at which time they were removed by bus to the Police Academy at Rokeby. Staff that could be relieved from duty were stood down and sent to another house, as I wanted to keep them together and readily accessible for a debriefing.

The response from official agencies appeared to take a long time and was exacerbated by the lack of accessible communications with people on-site. Local emergency services were the first to respond but lacked co-ordination. The main immediate responsibility was to close off the Site and to stop people from using the Arthur Highway.

A senior police officer arrived on-site at about 4.00 p.m. and took control of the crime scene. Many of the tourists were anxious to get out of the place as disbelief turned to reality, and many tourists were booked on outbound flights that evening. There was an immediate need to establish who were witnesses and who were not.

As there was no public address system I was forced to stand on the back of a 4-wheel-drive vehicle and shout requests and instructions. In hindsight I realise that I failed to adequately identify myself. I wasn't in uniform and I only had a nametag to identify myself and lacked the necessary authority to take full command of the situation. In the debriefing it was established that visitors were only obeying those in uniform and doing so without question. An 'off-duty', interstate policeman and staff started collecting names and addresses of people who were on-site and the witnesses were asked to stay.

At about 5.00 p.m. a report came through that Bryant may have broken out of Seascapes and was heading back to the Site. Shots were then reported as coming from across the Site.

This caused widespread panic and most, on reflection, saw the next 30 minutes as the worst in their life. By this stage I could feel myself going into shock but then it got very busy.

Unfortunately during this period the Broad Arrow Cafe remained open. The cafe should have been closed off, because

those who entered it have suffered both physically and emotionally since.

The only communication off the site was a public pay phone. There was a long queue and the phone quickly jammed with money, and do you think anyone could find the key? There was also a direct phone-line in the cafe that was manned by a visitor of great skill who later just disappeared into the night. He acted as an operator just relaying messages on and off the site. This worked very well because there was no social chitchat and call length was kept to a minimum.

At this stage (about 5.30 p.m.) the day was drawing to a close. We were assured that there was a group of SOGs arriving by helicopter to secure the site. I hoped this would help to settle people down and give them hope. I felt at this stage a strange feeling that I was not going to be shot, a feeling shared by other staff members. I moved out in the open and without fear commandeered three 4-wheel-drive vehicles and had them ready to transport the SOGs to secure the site. Driving the vehicles to the edge of the oval, we awaited for the helicopter to arrive. The helicopter contained two young police women who had come off the beat in Hobart.

It was then resolved to move those remaining on the site, mainly witnesses, to the Port Arthur Motor Inn, where they could be fed and housed, because it looked to us as if it was going to be a long night.

At this time I attempted to contact the Minister responsible for the Site to see if everything possible was being done to get us help. I spoke to his wife who assured me that it was, and that he was in fact at Police Headquarters with my Chairman. It was at this point I think I realised it was a much bigger picture than just the site and the magnitude of the disaster began to set in. In hindsight, the tragedy was just the tip of the iceberg of what was to come over the coming months.

We then resolved to close down the site and relocate the crisis centre to the youth hostel off the site away from the crime scene. All during this period you could hear the gunfire as Martin Bryant, holed up at the Seascapes, kept shooting at police. By this stage (7.30 p.m.) there appeared to be as many police as witnesses and they were arriving by the busload. I was quite happy to just sit and give support to the operations officer, in the form of local knowledge, as required.

At about 10.00 p.m. a debriefing team arrived from the Department of Community and Health Services and a long session was held with staff. The staff were then allowed to go home, ending the darkest day for all of us.

Following this, the Chairman and other board members arrived and a board meeting was held. The meeting resolved that there was to be maximum support available for the staff and that the site would be closed until further notice. Signage and a press announcement advising of the closure would be arranged in the morning. A full meeting was set down for the next morning.

During the rest of the night I continued to assist the police and to ensure the historic fabric of the Site was not being compromised.

The next morning (Monday) a Board Meeting was set up. The Board received a briefing by the Police Commander and a plan for the next three days was established. It was agreed the site would remain closed until the police had finished with the crime scene and all bodies and any other reminders (blood, etc.) had been removed. The site reopened on Thursday as a township in mourning. There was no charge for accessing the site, and the front steps of the Broad Arrow Cafe became a makeshift altar.

This was a very difficult period for everyone as the size and impact of the event became recognised and accepted. DCHS supplied counsellors and many of the clergy offered support.

Because of this chaos, no Authority accounting was kept during this period and many mistakes were made. In fact it has taken us nine months to get this area back on track.

By the end of this first week, people were now out of shock and wanted to blame someone. Human resource management became a major issue.

The workers compensation company took up a very active role looking after the physically and mentally wounded. They had three counsellors who took up a 24-hour roster and this was in place for three months. This worked well but they themselves quickly became tired. Staff would feel comfortable with one of the counsellors and would refuse to see the others. This became hard to manage and anything that went wrong soon became the fault of the Authority. The grieving cycle was moving rapidly from the grief phase through to anger and blame, only we didn't recognise this at the time.

Post-tragedy, from the two- to six-month stage, it appeared the Authority couldn't do enough for anyone. No matter what, you were damned if you did and damned if you didn't.

Media handling was made especially difficult because of the confusion on-site and the existence of a management structure where the site is administered by an Executive, who report to a Board of Management, who are in-turn controlled by a Minister.

The Offices of the Minister and the Premier supplied valuable external resources and helped handle much of the in-bound media and community enquiry, however there was confusion over the lines of demarcation. The Site PR person had to nonetheless attempt to satisfy a ravenous media with interviews from a traumatised site staff.

The media, while all understanding the magnitude of the tragedy, had their own agenda. For most, this agenda was not disciplined by 'a respect for the victims', but rather by the search for ratings. Many of the media would have great difficulty justifying the intrusive, penetrating and all-pervasive attitude they took to the human tragedy that occurred in a sleepy corner of the globe.

The site has been subjected to intense intrusion, criticism and confrontation. Over-worked and 'still not properly grieving' staff attempted to provide the media with as many opportunities to access staff and the victims as it could. But the very process of being interviewed stressed the already shocked and distraught local community. It was never win-win for the victims or the Site. If we impeded the media we were branded as protecting and obstructive. When we gave access it was never enough, or the 'talent' was so traumatised we couldn't put the pressure back on them to talk to the media.

The exercise of dealing with the media and the trauma of the tragedy finally took its toll on our PR officer. She took leave after six months and was offered a good position on the mainland. This experience, we are told by the specialists, is likely to be repeated, to the point where Port Arthur may turn over up to 80 per cent of its positions in the next few years.

The experience of the initial three months was repeated as the court date came closer. By appointing external consultants, the Site decided to more carefully manage its communications and media liaison. Both consultants became accessible to the media seven-

days a week and 24 hours a day. The Site's staff were invited to utilise the expertise of the consultants and they participated in interviews, providing a buffer and counter to the media's sometimes intrusive and unfeeling attitudes towards victims.

We also resolved to appoint a special management team to deal with all matters external to the day-to-day running of the Site. It took six months for this resolution to be agreed upon. It probably took us six months to realise the work load being handled by the Site was not sustainable.

We put in place a new management structure and divided the Site up to more effectively deal with issues and internal command and communications structures. It helped to have an Army Colonel as a member of the Board, but it is a good lesson.

To separate the event from the daily management tasks allowed everyone on-site to focus on the jobs they were employed to do. Now it was possible to the see light at the end of the tunnel.

By Christmas, just three months after the team began, we had all our projects and developments under way, Site-specific reviews had been completed, and the Site was running more efficiently again. The team leader also dealt with many of the niggling media enquiries that usually had to be funnelled through the Chairman and the Minister, and while both still participated in the process, we now had two able communicators based on-site.

The communications strategy that was developed as a process of dealing with the tragedy also identified that visitors needed to be asked to respect the feelings of the Site staff. This was communicated through a leaflet, which turned into a brochure, which was handed out at the tollbooth. The result was a quick reduction in the number of upsetting incidents on-site. We also erected signage and put the message on the Internet.

Media management was then the focus. At this point there was some very vocal community criticism of the Port Arthur Historic Site and the Management Authority. This criticism continues today, and is very much a problem related to unresolved anger.

As the twelve-month 'anniversary' approached, we faced a new trauma, but this time through experienced eyes. It was resolved to restrict the media's access to the Site and to facilitate their enquiries, not on an individual basis, but

through media releases and media conferences.

Many of the staff actually complained of being smothered in kindness. Everyone wanted to help but there was very little for them to do. This resulted in a lot of frustration.

A Memorial Service was held in St David's Cathedral in Hobart on the Wednesday after the tragedy, which was broadcast across the nation. I personally found this very hard. Everyone wanted to go but there was only limited seating and, on reflection, this is when the 'us' and 'them' feeling started to develop.

It was also resolved that a community service would be held for the staff and 'locals'. This was a great success and everyone felt very bonded at that time. The emotional effect on 'insiders' who hadn't been to the Site since the event became very emotional and this was very hard to handle and manage whilst trying to keep one's own composure.

The Site reopened the following day as a township in mourning. The steps of the Broad Arrow became the centre for grieving. We found that counsellors were required at the steps for 12 hours a day to help console the public, and staff were only able to assist for short periods.

The administration systems were completely overloaded, with the phone and fax unable to handle the demand. About 500-800 items of mail were arriving each day and no day-to-day work was being done.

The cafe staff became concerned that they had nowhere to work and their long-term security became an issue.

The Authority had insurance to cover the additional cost to do business in such an event. However, to resolve the insurance process is very complicated. The largest cost apart from personal human effect was the loss of productivity. Eleven months after the tragedy our normal productivity was only just returning. Nobody wanted to take responsibility for anything but all wanted to stay. It was fortunate that the Authority had a well-documented corporate plan in place before the event and this became the guiding tool during the period of chaos and having staff on remote control.

From a management point of view, tiredness and frustration were the two biggest hurdles that needed to be overcome. It seemed everything was grey, with no issues that could be defined as being either black or white.

There were many community meetings, set down for just about every night,

and not many had any outcomes. They mainly seemed to serve as an opportunity for people to speak and vent their anger. At the time they were very important, but I wonder now what would have been the consequences if there weren't so many meetings.

It quickly became clear that there needed to be a focus point for people's remembrances. It was decided that a temporary memorial should be established and this has worked very well. We now face the problem that there is likely to be concern about plans to move the memorial. We are considering the temporary memorial may become part of the permanent memorial.

The laying of flowers and other memorabilia where people actually died still presents a problem as the public and staff find it very hard. This is especially so where Nanette and her two girls died, which is on the main entrance to the Site. A policy was quickly created which evolves the staff taking down the flowers and such at the end of each day, for which we copped public criticism.

A major memorial service was held the Sunday prior to the Site reopening, even though this created a lot of work. It was very beneficial in keeping people busy and gave them focus, although they mourned right through the process. It was more of a public relations exercise than a grieving process. This was helped by the beautiful day. It certainly helped to tell the world that Port Arthur was again open for business and acted as a milestone in the recovery process.

The community established it would like to have a 'family picnic day' to encourage locals back to the Site, as many were still apprehensive about how they would react. It was advised that the sooner they returned to the Site the better. This experience proved true and there was a large turnout. The goals were achieved and it is likely that this will become an annual event.

As time moved on it became possible to recognise the waves of tension that flow through the organisation. In the early days it was common to see people fighting over a 'yellow sticky pad'; now people just appear to over-react to situations and take things far more seriously, especially if it is personal. In the early stages you could walk in offices and the person would be staring out in space and you would be lucky if they even realised you were there.

It was impossible to enforce any degree of discipline as people would over-react and break down and then you

jeopardised their long-term recovery process. It was all too easy to take one step forward and three steps back.

The fragile environment didn't help anyone. I feared that staff were always wondering when their turn would come. For management it was the fear of not knowing how we would react and what would happen if we were break down.

The size of our organisation doesn't help either, because it is neither a small business nor a big business, and consequently we have a relatively flat management structure with no 'reserve seating'.

Because problems were so broad, by the time an external consultant was brought in and up to speed, it was easier to deal with the problem yourself.

Conclusion

In any disaster there is likely to be a sequence of events and a systematic chain of human reactions.

Port Arthur has moved and continues to move through this cycle. The lessons and the challenges that are continually posed to the Management Authority are not yet completed.

There is another chapter to be told, at some time in the future, about lessons that are worthy of passing on. All we can hope is that you may never have to face the kind of disaster with which our staff and service personnel had to deal.

Lessons learnt to date

- Regional disasters raise a lot of additional problems that need to be addressed.
- Get outside help quickly in the professional area and quarantine normal staff to an area where they can perform a duty that is not critical.
- Have a standard operating procedure for accounting (and everything else that you can).
- Have funds for personal emergencies available quickly as people don't have any reserves.
- In fund raising, obtain a title that tells the donor exactly who is getting the money.
- Critically look at your insurances and try to consider the likely affects the different events could cause.
- Try to establish milestones in the recovery process. Have a plan and try to stick with it.
- Relocate staff if you can.
- Get people away from the environment.
- Keep life as normal as possible, avoid reacting to situations, as often by the time you have reacted to the situation, it has changed completely.

Foundations of Emergency Management

by Karl Cronan, New South Wales Ambulance Officer

Emergency Management is not a haphazard practice, but a structured science performed by experts. This paper outlines the definition of emergencies and disasters in traditional and sociological terms considers the social and monetary costs and benefits of emergency management to the community. The framework of emergency management will identify the functions of a manager and relate these to the concepts of prevention and mitigation that lead to a prepared community, through planning, hazard analysis, legislation, public awareness and education. The tactical functions of command, control and co-ordination will illustrate how resources come together to provide overall effective emergency management. In viewing the human factor, consideration has been given to the physical and psychological welfare of people affected and their planning needs after a disaster, are assessed. In support of framework concepts, emergency legislation and their responsibilities have been outlined at federal, state and local government levels.

What are emergencies?

To understand what emergencies are, appropriate definitions of the terms emergency, disaster and catastrophe are required. The Encyclopedic World Dictionary (1971) defines *emergency* as 'an unforeseen occurrence; a sudden and urgent occasion for action', *disaster* as 'any unfortunate event, especially a sudden or great misfortune' and *catastrophe* as 'a sudden and widespread disaster'.

From these definitions it may be assumed that these events affect large numbers of people, but this may not necessarily be the case. In a family, the death of the bread winner may be viewed as a catastrophe, in a small town the death of five community members may be considered a disaster, but in a city a multi-storey building fire might only be classed as an emergency. Humans apply a subjective interpretation to the terms emergency or disaster and mould them

appropriately to fit their situations.

From an emergency management perspective, these definitions are required to be standardised and accepted by the majority, from this 'emergencies may be defined as unexpected circumstances combined to create situations calling for immediate action'. 'Disasters can be natural (or man-made) emergencies that affect the surrounding community. They are usually localised events that spin out of control and end up posing a threat to uninvolved parties' (Gigliotti and Jason 1991).

In sociological terms Fritz (1961) (cited in Drabek, 1986) defines disasters as 'accidental or uncontrollable events, actual or threatened, that are concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger, and incurs such losses to it's members and physical appurtenances that the social structure is disrupted and the fulfilment of all or some of the essential functions of the society is prevented'.

An event leading up to or causing a disaster is known as a hazard. A hazard is defined as 'a potential or existing condition that may cause harm to people, or damage to property or the environment' (*Community Emergency Planning Guide* 1992). These hazards can be divided into two distinct categories:

- **natural** – climatic (e.g cyclone), geophysical (e.g. earthquake) and biological (e.g epidemic)
- **human-made** – technological (e.g. transport accidents), human fault (e.g. oil spill) and hostile action (e.g. terrorist attack) (Thristan 1995).

The effects of emergencies, and 'why emergency management?'

When a hazard impacts on a community the social and material infrastructure is damaged (or in extreme cases destroyed) and this impact has a disruptive effect that places stress on individuals and communities. To understand the effect an emergency has on a community, it is

a worthy purpose to explore what a community contains. Communities are made up of sub-groups, such as family groups, working or business groups and cultural social groups. A community has a structure based on social, cultural and functional lines (Thristan 1995).

During an emergency or disaster, the bonds that bind a community can be broken and this has a negative effect initially but eventually turns to a positive effect as individuals and communities attempt to reconstruct the community bonds. 'During and immediately after the emergency an immense feeling of community spirit is usually evident, with people helping others who prior to the event did not even know each other. Barriers are broken down by the need for self-survival and help of others' (Thristan 1995).

The damage to property, loss of livestock and crops, and destruction of the service infrastructure (e.g. power, water supply and sanitation) is also a serious effect of hazard impact. This may place an enormous financial burden on government (local, state or federal). An example of the enormity of destruction and cost incurred following a disaster was evident in Cyclone Tracy, where 65 people were killed, 11,500 homes destroyed or seriously damaged, power, water and telecommunications disrupted. Damage was estimated at \$500M and at least \$300M was spent by government (Australian Counter Disaster College 1981).

Emergency management is a necessary function in society, 'our physical geography and climate make us prone to most forms of natural disasters' and 'we share with other modern industrialised nations the potential for man-made disasters such as industrial accidents, hazardous substances and hostile acts in peace or war' (Dunn 1983). With such a disposition towards natural and man-made hazards, emergency management takes on the function of attempting to decrease the impact of these occurrences by providing the planning required to implement a counter disaster

strategy thus ensuring all communities are prepared to handle any threat; to provide a command and control function in the event of a hazard and by providing support in the rehabilitation process. Planning, preparedness and mitigation efforts such as appropriate building codes and flood mitigation programmes, aids in reducing the effect of impact, this in turn lessens government expenditure on rehabilitation costs. 'Effective disaster management is a dynamic process which involves many disciplines such as science, engineering, health and welfare, architecture, social sciences, management and law, as well as the traditional "emergency" groups' (Australian Counter Disaster College 1986).

Framework for EM

A framework for emergency management consists of planning, organising, directing (leading) and controlling.

'The planning function involves establishing organisation goals and defining the methods by which they are attained. The organising involves designing, structuring, and co-ordinating the components of an organisation to meet organisation goals. The directing function involves managing interpersonal activities, leading and motivating employees to effectively and efficiently accomplish the tasks necessary to realise organisational goals. The controlling function involves monitoring both the behaviour of organisation members and the effectiveness of the organisation itself, determining whether plans are achieving goals, and taking corrective action as needed' (Pierce and Dunham 1990).

These concepts must be applied and a framework for emergency management constructed. This framework consists of prevention, preparedness, response and recovery. *Prevention* is defined as 'regulatory and physical measures to ensure that emergencies are prevented, or their effects mitigated'. *Preparedness* is arrangements to ensure that all resources and services which may be needed, can be rapidly mobilised and deployed. *Response* is actions taken during and immediately after a hazard impact to ensure that its effects are minimised. *Recovery* is arrangements to ensure that a community is restored to normal' (Community Emergency Planning Guide 1992).

Framework components have no fixed commencement or conclusion. Each function has an affect on the other,

planning influences preparedness, which in turn contributes to the effectiveness of response and this response effects the amount and input required for rehabilitation or recovery.

Emergency prevention

'Prevention concerns the formulation and implementation of long range policies and programs to prevent or eliminate the occurrence of disasters' (Australian Counter Disaster College, 1981). The impact from natural forces and technological accidents may never be totally prevented but the consequences of these disasters can be lessened by prevention and mitigation.

Mitigation is an emergency prevention strategy and is defined as 'measures aimed at reducing the impact of natural or man-made disasters on a nation or community' (Carter 1991). Drabek (1986) concludes 'the concept of mitigation... that is, purposive acts designed toward the elimination of, reduction in probability of, or reduction of the effects of potential disasters. Specific examples include land-use management programs whereby people are restricted from building in flood prone areas, or the more stringent building code requirements that have been adopted by many communities with histories of seismic activity'.

When implementing mitigation strategies, in the prevention phase, four main goals should be applied.

- Containing or modifying the hazard in order to change its nature and thus to lessen the threat
- Protecting people and facilities in order to decrease the vulnerability to injury or damage
- Limiting the use of areas and facilities in order to lessen the threat
- Preventing the emergency or occurrence of a hazard (Thristan 1995).

An all hazards approach to mitigation or prevention should be considered as an important strategy aspect. This approach considers that some mitigation efforts may cause additional complications when a disaster strikes. The use of generic style plans ensures that everyone concerned stays committed to the one plan and that responding services are not duplicated. 'When it comes to emergency planning, it is most important that every conceivable action, reaction, response, resource and emotion be considered even if such considerations may later be dismissed as nonessential to the emergency planning effort' (Gigliotti and Jason 1991).

The prepared community

'The development of Australia's counter-disaster capability depends on an informed and aware community and a local government that is involved in, and supportive of, disaster prevention and preparedness measures' (ACDC 1986).

'Preparedness is supported by the necessary legislation and means a readiness to cope with disaster situations or similar emergencies which cannot be avoided. Preparedness is concerned with forecasting and warning, the education and training of the population, organisation for and management of disaster situations including preparation of operational plans, training of relief groups, the stockpiling of supplies and the earmarking of the necessary funds' (ACDC 1981).

One of the cornerstones of preparedness is planning. 'The purpose of planning is to anticipate future situations and requirements, thus ensuring the application of effective and co-ordinated counter-measures' (Carter 1991).

For planning to be effective then a hazard analysis must firstly be carried out. This analysis identifies possible effects and an appropriate plan is then formulated. Drabek (1986) cites Tierney (1980) that 'a good plan' is:

- based on realistic expectations.
- brief and concise
- details a response that can be expanded by stages, calling up resources as needed and avoiding the potentially disruptive effects of over response and convergence at the site;
- possesses an official stamp of authority.

An awareness in the community for the need for disaster prevention and involvement in the planning for such an event, is an aspect of the prepared community. In the planning stages the use of citizens to provide up-to-date information is an under-utilised resource. 'Many organisations — schools, media and the like — could provide far greater amounts of hazard information than is done currently' (Drabek 1986).

Public education by disaster management agencies also helps in the task of preparedness. This education can take the form of education through the media, education through the school system or by community involvement in training exercises and procedures.

Further factors should also be considered. These include mutual aid agreements between commercial ventures, government authorities or governments, the use of public warning

systems that are easily understood and recognised, as well as the use of government funding for the maintenance of equipment and the stockpiling of emergency supplies.

Command and Control

Emergency managers must have command and control to prevent response from becoming disorganised. To help understanding, these terms need to be defined in the context of how they apply to emergency management.

Command is the direction of members and resources of an organisation in performance of its agreed roles and tasks. Authority to command is established in legislation or by agreement. Command relates to an organisation and operates vertically within it.

Control is the overall direction of emergency management activities in a designated emergency. Authority for control is established in legislation or in an emergency plan, and carries with it responsibility for tasking and coordinating other organisations in accordance with the needs of the situation. Control relates to situations and operates horizontally across organisations' (Community Emergency Planning Guide 1992).

Command equates to organisation whilst control relates to the situation, but these are not the only considerations during an emergency response. Another aspect that requires managing is that of resources arriving at the point of impact. This is where the function of co-ordination comes to the front.

Co-ordination may be defined as "bringing together organisations to ensure effective emergency management response and recovery, and is primarily concerned with systematic acquisition and application of resources (people, material, equipment, etc.) in accordance with requirements imposed by the threat or impact of an emergency. Co-ordination relates primarily to resources and operates vertically within an organisation (as a function of the authority to command), and horizontally across organisations (as a function of the authority to control)" (Community Emergency Planning Guide 1992).

The human factor

'A disaster is about people, as it affects them, their living conditions and their lifestyle' (ACDC 1980). 'The emotional impact on people involved in major incidents appears to be massive and enduring' (Toft and Reynolds 1994). These quotes indicate that in times of

emergencies, human behaviour is unalterably changed and these changes are not for the better.

Some common myths have arisen regarding human behaviour in times of crisis. These are:

- people panic during emergencies
- people look after themselves with little or no regard for others
- anti-social behaviour increases
- people are gripped by a sense of helplessness
- children are too young to be affected (Thristan 1995).

During the planning phase, provision should be made for the inclusion of mental health professionals to provide input. 'There is a tendency to treat disaster victims as a category of helpless and dependent human beings, who all have been subjected to the same terrifying experience and trauma. Often too little attention is paid to their individual differences, such as socio-economic background, cultural background and personal make-up' (ACDC 1980).

By the inclusion of provisions for welfare in disaster plans, planners have taken into consideration the need to provide physical, psychological and social relief to victims. Planners have then 'addressed the emotional side of an emergency' (Gigliotti and Jason 1991).

In order to address the needs of those affected, 'the range of welfare activities required in the immediate post-disaster period as assessment of injuries and damage, reception and registration of victims, information for media and relatives, emergency feeding, clothing and shelter, transport, medical and health services, animal welfare, provision of power and communications, restoration of utilities and control of access to disaster area' (ACDC 1981).

Emergency legislation

The responsibility for emergency management rests with the various levels of Government. 'Australia's emergency management and counter-disaster arrangements, reflect the fact that, under the Federal Constitution, State and Territory governments each have responsibility for protection and preservation of the lives and property of their citizens' (EMA).

'Local government by statute has the responsibility to provide many basic services, including roads, some health and welfare services and, in some states, water drainage, sewerage and electricity.

State Government has responsibility for law and order, safety, health, some

welfare aspects, land transport, intrastate air transport, water, sewerage, drainage, electricity and gas, together with town planning and economic development.

Federal Government has responsibility for quarantine, monetary policy, a share of fiscal policy, aspects of health and welfare and the defence of Australia' (ACDC 1981).

'Local government plays a major role in the development of State Emergency Services and Civil Defence preparations at the local level and the establishment of local SES organisations. Moreover, Councils because of their day to day community responsibilities have ready access to local resources which can be utilised to deal with emergencies' (NSW State Emergency Services 1981).

Conclusion

Emergencies are sudden and widespread events resulting in death, destruction of property, physical and psychological upheaval and enormous financial burden. The aim of emergency management is to lessen the hazard impact and to provide timely and effective response, together with relief and rehabilitation. The emergency manager works within a framework of prevention, preparedness, response and recovery.

The use of strategies such as mitigation, planning, hazard analysis and an all-hazards approach help to minimise the effects of an impact. Through effective planning involving members of the community, education campaigns, media, training exercises, and stock piling of supplies, aids in the preparedness of a community. During a response phase a strong emphasis on command, control and co-ordination will produce a controlled, organised rescue effort. To address the human factor in a disaster, planners should include welfare organisations to deal with the physical and psychological well-being of victims. Government has enacted various legislation to guard and maintain lives and property and to provide for response and recovery.

'Perhaps the only benefit of calamity is that it binds people together in a common cause. In a time of disaster there is the opportunity for the display of some of the qualities in which Australians take pride ... initiative to make an effort and to run risks, and a readiness to help people in trouble' (Australian Academy of Science 1979).

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Medical Displan Victoria: Guidelines for prevention of heat injury

by Dr Rodney Fawcett, Area Medical Coordinator, Kilo Region

To maintain the body's general health and well-being it is important for the body temperature to be kept at 37°C. This maintenance of a fixed internal environment is of significance as many of the body's internal biochemical processes have critical chemical systems that perform best at this temperature. The ability of the body to gain or lose heat to maintain this constant temperature of 37°C is ultimately vital to sustaining life.

In conditions such as fighting summer bushfires the main issue is one of ensuring the body is able to

maintain a reasonable heat loss in normally hot conditions. This is achieved mainly by evaporation (sweating), while small amounts of heat can be lost by the mechanisms of radiation (direct heat transfer from a warm body to a cooler environment) and convection (movement of air over the body, as when using a fan). This latter process can also aid sweating. Once environmental temperatures exceed 37°C, the only method of body heat loss is by sweating, which can be aided by increasing airflow over the body.

Heat loss is not the only factor to consider, as the work done by the body's

own internal metabolic processes creates additional heat. At rest the body generates about 100 watts from internal heat and activity, but processes involving physical exertion, such as firefighting, can increase this heat production to at least 1000 watts, depending upon the level of exercise. The production of sweat involves the loss of body fluid and salts. Under normal circumstances at 20°C, a person at rest loses 2 litres of body water per 24 hours. This loss goes up with increasing heat or workload. At

... continued page 26

For an adult		
Approximate volume of water lost (litres)	Body weight lost (%)	Symptoms caused by dehydration
0	0	
		Thirst, slowing down, weariness, nausea, emotional instability.
3	5	Stumbling, headache, increase in body temperature, pulse rate and respiratory rate. Dizziness, indistinct speech, increasing weakness, mental confusion.
6	10	Delirium, swollen tongue, circulatory insufficiency, marked haemoconcentration and decreased blood volume, failing renal function.
9	15	Inability to swallow, painful urination, cracked skin, cessation of urine formation.
12	20	Limit of survivability?

National Competition Policy and its impact on emergency management at the local level

by John Wearne, Senior Vice President, Australian Local Government Association

Introduction

The issue of National Competition Policy (NCP) and its impact on emergency management at the local level is a vexed and complex one.

A distinction needs to be drawn between NCP and Compulsory Competitive Tendering (CCT), because there is enormous confusion between these two terms and the implications of each on council services.

One important issue is 'outsourcing' council services, and this has some potential implications for emergency services. There are also issues related to emergency management that Councils should consider in their quest for efficiency and effectiveness.

Local government's involvement in emergency management

As the level of government closest to the people, local government is inevitably in the front line of community issues. This is particularly the case in times of disasters and emergencies. More importantly, councils continue to be involved with many of these issues after the flashing lights have stopped, the emergency service personnel have returned to their homes, and the community is left to face the aftermath.

For councils the major challenges are threefold:

- to plan, anticipate and to avert emergency situations
- to be prepared to respond appropriately to these situations when and if they arise
- to plan and manage the process of rebuilding and restoring the community to a sense of normality and strength, to move forward, and build a brighter future.

From a large scale national disaster to a smaller localised emergency, all aspects of local government's corporate activity can be involved.

For instance, technical service departments can be extensively involved in front-line defence, recovery and restora-

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tion of physical infrastructure. Community service departments, often working with non-government organisations (NGOs), meet the human needs of dislocated families and individuals, addressing issues such as food and shelter, care and welfare needs.

These issues are primarily local issues. All councils throughout Australia work closely with their state emergency service agencies, and local, regional and state arrangements have been established to deal with crises and emergency situations.

To date there has been no pressure within local government to address emergency management as a national issue, although it is an issue for all councils.

Following an approach from Emergency Management Australia, the Australian Local Government Association (ALGA) has obtained funding to undertake a study to determine the scope of local government's role in emergency management. This study will greatly assist us in understanding the role of local government in emergency management, as well as looking at the inter-relationships between stakeholders. From this we hope that ALGA can determine what action may need to be taken at the national level to improve emergency management from a local government point of view.

In addition, this study will provide us with the opportunity to do some work on assessment of risk to communities in northern Australia and will explore some cost effective strategies to address these risks.

This will take some time to do as it is no trivial task, but we hope to be able to report back next year on a way forward for local government in this very important area.

NCP and emergency management

NCP is a set of policy reforms being adopted by governments with the objective of encouraging a better use of the nation's resources.

The thrust of competition policy is to promote efficiency and 'best practice' by introducing competition principles to the business activities of government, removing barriers to entry by alternative providers, and eliminating resource allocation distortions.

NCP was not developed as a policy of 'competition for its own sake'. Rather, the underlying tenet is that competition is generally desirable, unless it can be demonstrated, on a case-by-case basis, that it will not deliver socially or economically beneficial outcomes. As a result, flexibility exists in relation to how certain key aspects of the policy will be implemented. In particular, many of the reforms are to be implemented only if it can be demonstrated that the benefits outweigh the associated costs to the community as a whole.

The Competition Principles Agreement is an agreement between the Commonwealth and States that sets out how governments will apply competition policy principles to public sector organisations within their respective jurisdictions.

The agreement establishes a number of policies to help promote competition, specifically:

- prices oversight
- competitive neutrality
- structural reform of public monopolies
- legislative review
- access to services.

Local government is not a signatory to the three intergovernmental agreements that comprise the NCP. However, State governments were required to consult with local government and publish a statement specifying how competition principles would be implemented in local government. This is referred to as the 'Clause 7' statement.

Having established the desirability of competition policy reforms at a national level, from an ALGA perspective it has been disappointing that a national approach to the implementation of these policies with respect to local government could not have been achieved.

While there are commonalities of approach in the Clause 7 statements, there are also significant differences that cannot be justified solely on the grounds of any structural variations between the States. This factor alone has significantly complicated discussion and understanding of the nature of the NCP reforms for local government practitioners.

In particular, there is continuing confusion emanating from Victoria about the relationship between NCP and CCT, particularly due to the high level of compulsory competitive tendering required of Victorian councils by the Victorian Government. In fact, a number of commentators have observed that much of the CCT process to date has not been fully consistent with the principles of NCP.

It is sufficient to say that NCP *does* apply to local government. However, the implementation of NCP varies from State to State and this is spelt out in each State's Clause 7 statements. Clause 7 statements specifically include reference to competitive neutrality, legislation review, and structural reform of public monopolies.

Competitive neutrality as a key aspect of competition policy for local government

The objective of 'competitive neutrality' is to introduce measures that effectively remove any net competitive advantage arising simply as a result of government ownership of a business entity.

In short, this means that government-owned business units must compete on a 'level playing field' with private sector competitors. One of the key concepts in relation to competitive neutrality is that a public sector business unit should not hold any competitive advantage or disadvantage as a result of being in public ownership.

The Clause 7 statement lists a range of competitive advantages and disadvantages to local government, for example:

- exemption and concessions from taxes and charges
- access to concessional interest rates on government procured borrowings

- effective immunity from bankruptcy
- exemption from Corporations Law reporting requirements
- effective immunity from takeover.

On the other hand there are some examples of competitive disadvantages and these include:

- compliance with varying levels of Ministerial discretion
- compliance with employment terms and conditions (and other government policies) that may be more expensive than those that apply in the private sector
- increased reporting requirements above those applying to the private sector
- social equity considerations.

Within this approach, competitive neutrality is designed to make the true cost and level of performance of government businesses transparent in the hope to facilitate better decisions regarding their operation by both managers and government owners alike.

But, competitive neutrality and competition policy are not meant to override other public policy goals. Indeed, many of the competition principles explicitly call for reforms to be implemented where the benefits outweigh the cost. Where this occurs, government must take into account social welfare and equity, including Community Services Obligations (CSOs).

For this purpose CSOs are local government's obligations to the community that are either discretionary or mandatory, such as those required under legislation. CSOs are non-commercial activities that the government has directed the business unit to undertake. Funding of a CSO will be considered in the context of the budget process.

So I want to stress that competition policy does not require contracting out or competitive tendering. It does not preclude councils from continuing to subsidise particular business activities from general revenue, nor does it require privatisation of local government functions.

However, it does require councils to identify their significant business activities and to apply competitive disciplines to those businesses that compete with private businesses.

The process is designed to make the 'true cost and level of performance' of a council's businesses transparent, and thereby enable better decisions to be made regarding the efficiency and effectiveness of these activities.

Putting NCP and local government into context

There are approximately 740 general purpose councils in Australia. Annual expenditure of local government is in excess of \$10 billion and councils are responsible for and control a significant amount of the nation's public infrastructure.

However, local government is highly decentralised and diverse in terms of population and service delivery capacity. The scale and extent of local government services differ significantly, ranging from the multi-million dollar enterprises of Brisbane City Council to the small services provided by rural and remote councils throughout the bush.

Obviously, some of the activities of local government in Australia are clearly significant businesses. For example the public transport operation of the City of Brisbane is a major undertaking, with a current expenditure of more than \$100 million.

The threshold of a significant business is in a sense in the eye of the beholder. For the purposes of the Western Australia Clause 7 statement, significant business activities are those that attract more than \$200,000. That is, for those particular activities, councils are to undertake a cost benefit analysis to determine the appropriateness of applying competitive neutrality principles. In other states the thresholds are quite different.

What are the implications of all of this for emergency management?

It is important to recognise that not all activities of councils are required to be subjected to NCP processes, and that where they are, it should not necessarily over-ride broader social policy objectives. I hope that I have made it clear that NCP by itself does not have any direct implications for emergency management.

However, we do recognise that there may be some potential implication where a council's traditional services are outsourced (to an external contractor or successful in-house bid) whether as a result of the application of competition policy or by other reform processes.

Take the scenario where a council has outsourced its technical services or community services, under competition policy principles, CCT or any other reform process. Under these circumstances, the councils will have a fundamentally different relationship with the contractor than with their own

workforce. Indeed, the relationship is spelt out in the contract specification.

Under this scenario, it is clear that it is extremely important that emergency management issues are given due consideration. That is, they are adequately dealt with in the contract. Were this not to be so, it may result in variations to the contract at considerable cost to council and the community.

One of the major concerns for councils in Victoria, particularly in rural areas with the introduction of CCT, was the potential impact of losing their capacity to respond to local situations.

For example, concern was expressed about the potential consequences of outsourcing to contractors who were not locally based, or had other contractual commitments in another area. In this case essential plant and equipment that may have normally been located and available to the community at the time of an emergency may not be in the area when required.

This would clearly be an unintended consequence of awarding a contract to a 'low-cost' contractor without adequate

consideration of the potential need in the event of an emergency.

The message is clear. Where services are to be outsourced it is important that contractors are required to make adequate provision for the possibility of emergency situations. But, of course this is easier said than done. Indeed, idle plant and equipment on the grounds of efficiency alone is a waste of resources. What is required, is a careful consideration of the risks of emergencies and the development of appropriate cost effective strategies to address them, including CSOs.

This raises a very important question that confronts all of us who are concerned about emergency management, that of financing.

Local governments do accept that they have a responsibility to respond to community needs and have played their role in emergency management to the best of their ability within their resources for many years. The introduction of competition reforms has the potential to highlight the actual cost of this service.

The funding of CSOs from council general revenue will always be subject to council budget processes. As demand for council services increase and State and Commonwealth governments continue to devolve responsibilities to local government without additional resources, councils are increasingly faced with hard financial decisions.

Planning for and funding emergencies is an inevitable function of local government. Unlike other spheres of government who can leave the scene, local government will be there for the duration.

It is essential that all spheres of government and the community work collaboratively on emergency management, and acknowledge the important role local government plays.

It is essential that the introduction of any reform measures to increase the efficiency of government services does not diminish the capacity of councils to provide for the safety and security of their communities or shift responsibilities and costs to local government without full consultation and agreement.

Medical Displan Victoria: guidelines for prevention of heat injury (cont.)

... from page 23

10 litres per 24 hours. But, these figures do not take into account workload.

As the body heats up, heat loss is required to keep the core temperature at 37°C. Blood vessels in the skin open up (vasodilation) so that heat can be conveyed from the core to the surface to allow for heat loss primarily by evaporation of sweat. As body water is lost through this process, symptoms of heat injury can develop if cooling is inadequate and the fluid lost is not replaced. (The table on page 23 gives an indication of symptoms as they relate to fluid loss and dehydration.)

In addition to body water loss, sweating also involves salt loss, but as the body acclimatises to heat, which takes 10–14 days, this loss is reduced and sweat becomes less salty. In unacclimatised individuals in very hot conditions, up to 25 grams of salt can be lost in a 24-hour period.

This guideline has only explained the consequences of heat stress in terms of body water and salt loss coupled with the requirement to maintain a constant core body

temperature. Heat stress affects many other, more complex body systems, but by having an understanding of the basics, heat stress may be prevented.

The keys to heat injury prevention

- *Acclimatisation*—a reasonable level of physical fitness with an ongoing exercise program can best achieve this, especially when preparing for warmer months following the colder seasons.
- *Rest cycle*—there needs to be a reasonable work–rest cycle to reduce the impact of a build up of the body's metabolic heat produced by the work. A rest every half hour in hot conditions is considered prudent. In extreme conditions less time at 'work' would be advisable.
- *Adequate water replacement*—opportunity to replace lost body water during rest cycles is a must. Frequent drinking must be encouraged.
- *Adequate salt intake*—The normal diet needs a little more than usual added salt. Note: salt tablets are not easily absorbed and are of limited value. Electrolyte replacement fluids can be used, but after acclimatisation sweat is diluted, thus half strength is more appropriate.

- *Early symptoms of heat stress or dehydration need to be detected*—if these occur, move to a shaded area, remove clothing to cool the body down, fan the body, give fluids as tolerated (water or half strength electrolyte replacement fluids). Do not douse in cold water or ice as this causes constriction of the skin blood vessels (once skin temperature has dropped below 28.4°C) and actually increases heat retention in the body core, even though the skin feels cold and shivering may occur. Seek first aid or medical assistance as soon as possible.

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New Zealand's emergency management system and the role of local government

by Steve Jensen, Operations Officer, The Emergency Management Office, Wellington City Council

Wellington is a community at risk from a range of hazards. Wellington City Council has recognised this risk in the practices it has adopted. The council is committed to comprehensive emergency management, enabling people and organisations to prepare for, respond to, and recover from mass emergencies and disasters.

The Emergency Management Office has commenced on an all-hazards, all-agencies program that promotes hazard reduction, emergency readiness, response co-ordination and community recovery.

Identifying the need for change

The 1991 Law Commission *Final Report on Emergencies* and the 1992 Civil Defence Review Panel initiated a process of change within New Zealand's civil defence system that has continued to today. The need for change has, as a result, been well documented and accepted within the country. Wellington City is one of a number of local authorities that has already taken positive steps to implement this change.

From civil defence to emergency management

In July 1992 the Council approved a development plan as the basis for the city's civil defence strategy. This report focused on the adoption of the 'four phases' as the fundamental means of changing the civil defence system in place at the time into a more pro-active emergency management system. The development plan indicated that 'more attention should be paid to mitigation and recovery' while continuing to build on the existing preparedness and response planning programs.

In January 1993 the council received a report proposing specific activities necessary to the successful implementation of the adopted strategy. This report formally introduced the concepts of the all-hazards approach, comprehensive emergency management and integrated emergency management

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systems that have underlain the council's practice for the past five years.

In October 1993 the council officially changed the name of the Civil Defence Department to the Emergency Management Office in recognition of the change in strategic direction and practice. Business plans have seen these concepts translated into action.

The Emergency Services Review

A nationwide process of change is now underway as a result of the 1995 *Report of the Emergency Services Task Force*, headed by Sir Somerford Teagle, and Ian McLean's 1996 *Review of Disaster Recovery Preparedness*. These have led the Department of Internal Affairs to recommend changes to the national emergency management structure to Cabinet which, in turn, has adopted the following principles.

1. Comprehensive emergency management.
2. The all-hazards approach.
3. Integrated emergency management systems.
4. Declarations made at the most appropriate level of government by elected representatives.
5. Routine events and emergencies are best handled at the local level wherever possible.
6. Community responsibility and self-reliance.
7. Individual responsibility and self-reliance, including the owner of any property be responsible for its reconstruction.
8. Structures underpinned with appropriate technical information and expertise.
9. Recognition and involvement of volunteer organisations.

These principles are in keeping with Wellington City Council's emergency

management practice over the past five years.

Emergency management practices

Local authorities have both a legal and moral obligation to public safety. Wellington City Council has accepted and fulfilled these obligations through its emergency management activities. Emergency management is a core function of local government, a point reconfirmed in Principles 4, 5 and 6. The council needs to continue to integrate emergency management into its services and commit the resources necessary to enable it to meet these obligations in the future. Principle 8 further recognises the need for this to be properly supported.

The practice of emergency management is built on the three fundamental principles 1, 2 and 3 (comprehensive emergency management, an all-hazards approach and integrated emergency management systems).

All-hazards approach

Hazards are the result of an *interaction* between human activities and the natural and technological processes that can generate extreme events. It is important that the hazard, the community's exposure to the hazard, and the likely effects of the hazard on the community are all understood. This is accomplished through the 'all-hazards approach', practised by the Emergency Management Office and endorsed in Principle 2.

This approach ensures emergency planning is effective and efficient. There is a danger that communities will focus too much attention on any single hazard to the extent that the community becomes prepared for one type of disaster and not for others. The all-hazards approach balances this and allows planning to be more effective in all situations. The second issue is planning initially for the common effects of the various hazards and then planning for the hazard-specific issues. This is a more efficient planning process as it avoids duplication.

In Wellington, this means understanding all the natural and technological hazards the city faces and planning once for the problems in a way that can be used in all disasters. The hazards that can cause a disaster in Wellington are:

Natural — *atmospheric* (includes severe winds), *geologic* (includes earthquakes, tsunamis and landslips), *hydrologic* (includes coastal and river flooding) and *wildfire* (bushfire).

Technological — *manufacturing of hazardous substances, storage of hazardous substances, transport of hazardous substances or mass transport of people* (includes road, rail, air, sea and pipeline) and *hazardous waste and contamination*.

It is critical for the council to assess these hazards on an ongoing basis. This assessment must draw on research about both the hazards and community in order to provide credible information for the policy development process and for emergency planning. This allows reasonable mitigation and preparedness actions to be taken that are effective and efficient.

Comprehensive emergency management

This is an internationally accepted concept of how communities can deal with hazards and disasters. Local authorities can use it to ensure resources are being committed to emergency management in a balanced, effective and efficient manner.

Comprehensive emergency management is based on four phases: mitigation, preparedness, response and recovery. These phases have been referred to in public awareness materials as the 4Rs (reduction, readiness, response, and recovery) to help make the ideas easier to understand and remember.

It is important to adopt comprehensive emergency management as a whole concept, as each of the phases is dependent and linked to the others. Without an appropriate commitment to all four aspects the concept will not be able to help the community fully. Each of these phases accounts for a roughly equal part of the Emergency Management Office's work and is explained in more detail below.

Mitigation (Reduction)

Council undertakes a variety of programs that all contribute to reducing the likelihood of a disaster or lessen the negative impacts. These include aspects of effective asset management, land-use management, and other specific risk-reduction projects. It is important for

all council units to recognise how their activities contribute to hazard reduction. The Emergency Management Office has a role in offering advice on mitigation projects and helping to coordinate projects that involve external agencies.

Public awareness and preparedness (Readiness)

The second phase of comprehensive emergency management is helping individuals and the community to prepare for a disaster (as recognised by Principles 6 and 7). As with other major events in the life of a community or an individual, preparation is a key step to a successful result and preparing for a disaster is no different. By increasing the community's readiness, first at the individual and household level and then at the neighbourhood level, we improve the community's ability to cope with the problems caused by a hazard impact.

Raising the community's awareness of the hazards and their consequences is the first step to promoting a higher degree of preparedness. This awareness of the hazards is then coupled with specific actions that can be taken to prepare. It is more likely that members of the community will take appropriate steps to ready themselves if they appreciate the real implications of the hazards and understand the available preparedness options.

Awareness and preparedness naturally peaks after significant local and international disasters, but quickly wanes. By monitoring awareness and preparedness through public surveying techniques it has been possible to target promotional activities effectively. However, increasing hazard awareness and promoting preparedness is a difficult task given that many widely-held misconceptions must first be corrected and then the new information presented. This means that the promotional activities initiated during the past four years must be sustained over the long term to be successful.

Volunteers

The 1995 Emergency Services Review recognises the valuable contribution that volunteers can make and recommends that the appropriate action is taken to maximise this resource (Principle 9). It is important to maintain a realistic view of who gets the work done in a disaster. There are a range of disaster workers from professionals to trained volunteers to those who are untrained but who are available to assist in the immediate aftermath of disaster. Each is an essential

part of the system and should be used effectively. Each of these groups of volunteers must work together to form a system that is focused and equipped for the real priorities after a disaster.

In Wellington this is already being undertaken through the community emergency centres that are part of the wider community response to emergencies. The organisation and structure of the Wellington centres is geared to allocate 'on the day' volunteers to specific tasks and to provide the Emergency Management Office with relevant and timely disaster information. This role is defined in the Wellington Emergency Management Volunteer Charter that has been jointly developed over the past year by Emergency Management Office staff and volunteer coordinators.

Another aspect of the volunteer system focuses on providing basic disaster skills to the community. The Emergency Management Office has worked with the New Zealand Red Cross and the New Zealand Fire Service to develop community training in disaster first aid, light search and rescue, and fire control.

Integrated response and recovery planning

There is a hierarchy of response and recovery plans within the council that ensures that the responsibility, for both planning and responding, remains with the appropriate parties. Council's plans are part of a larger system of emergency plans within the community that all relate to one another but serve distinct purposes.

At the top of this network is the *Wellington City Civil Defence Plan* that is legally required by the Civil Defence Act (1983) to allocate specific roles and responsibilities during a declared state of emergency. This plan is strategic in scope and written from an all-hazards perspective. That is to say, it defines the way a disaster response is managed in general terms without focusing on one particular type of disaster.

The next level of planning within the council are the *Standing Operational Procedures* (SOPs). These set out more specific information relating to how and by whom different aspects of the disaster response will be carried out. They form a more detailed agreement of responsibilities, explain the relationships between agencies and may set thresholds for involvement. This level of planning is currently underway with nineteen separate SOPs being identified:

Fire	Search and Rescue
Casualty	Health
Food	Shelter
Water	Evacuation
Transport	Logistics
Reconnaissance	Building Safety
Debris	Warnings
Enquires	Lifelines
Security	Deceased
Public Information	

The Emergency Management Office develops these plans in conjunction with the appropriate council units and external agencies.

There are two other documents that are essentially SOPs. The first is the *Emergency Operations Centre Standing Operational Procedures* which detail how the Emergency Management Office building is utilised in a disaster and provides emergency task descriptions. This is prepared and maintained by the Emergency Management Office staff. The second is the *Building Emergency Plan* that covers the emergency response required within the council buildings. This was prepared by a working group and is now administered by the Building Management Unit.

The next level of planning is undertaken by those council units (usually commissioning units) and external agencies specified in the SOPs. These emergency response plans contain the fine detail of how a response is initiated and conducted. They are comprised of many elements and should include the necessary changes to normal policies and procedures, assignment of emergency roles and tasks, call-out lists, resource lists, and other critical information. In some cases these plans may assign specific tasks and responsibilities to third parties, such as service delivery providers who will need to produce similar plans of their own detailing how they will fulfil these functions.

The Emergency Management Office currently fulfils the council's obligations as a rural fire authority under the Forest and Rural Fires Act 1977. This includes implementing a strategy for the 'prevention, detection, control, restriction, suppression and extinction of fires' in areas outside the jurisdiction of the NZ Fire Service and the Department of Conservation. The Emergency Management Office works with the NZ Fire Service, the Department of Conservation and our neighbouring local authorities to ensure effective and efficient rural fire protection is provided within the broader comprehensive emergency management framework.

The Wellington Emergency Management Office also has responsibility for the development of longer terms plans for disaster recovery. These plans, outlined in the *Wellington City Disaster Recovery Planning Guide* address the immediate problems of stabilising the affected community and extend into the longer-term programs for community rehabilitation and restoration. These programs cover aspects of community recovery, such as building reconstruction, accommodation, mental health, public information and economic recovery. Implementation of these plans is undertaken in conjunction with other appropriate council units and with representatives from the public and private sectors and with community agencies.

The natural system approach recognises that ownership of the relevant response and recovery planning by council units is critical for its successful implementation.

The response and recovery planning has encouraged a 'natural systems' approach to be adopted, meaning that responsibilities and roles of organisations and individuals in a disaster closely reflect those undertaken in normal times. It prevents the development of an independent 'disaster-only' system that may be in conflict with the normal system, especially in incidents where the scale or geographic extent of the problem does not warrant a city-wide declaration of an emergency.

This natural system approach recognises that ownership of the relevant response and recovery planning by council units is critical for its successful implementation. This approach extends to the way the council interacts with external organisations. In particular it guides our relationship with service providers through the competitive tendering process as it relates to the emergency planning hierarchy.

There are also response and recovery plans at the central and regional government level that Wellington City's plans must dovetail into, and external agencies have plans that interact with all three levels of government planning. The goal is to develop and maintain this network of plans so that there are no gaps and no potential for conflict as a result of

overlaps. The Emergency Management Office is actively promoting common planning formats and emergency management systems to improve planning locally and regionally.

Incident management system

Hazards can cause a varying degree of damage in the community depending on the severity of the event. The impact of hazards on the community can range from less serious accidents, through larger emergencies, up to disasters and it is important that the council is prepared appropriately for every scale of event. The importance of local involvement in emergencies is recognised Principle 5.

It is not always possible to simple scale a response up or down to suit, because more serious events, especially disasters, often require organisations that do not normally work together to function in a highly coordinated manner or undertake tasks that they do not normally perform. Council must make sure that its response arrangements are designed to suit the full range of events, from normal, unplanned maintenance and accident response to full scale disaster response and recovery activities.

The Emergency Management Office utilises the Incident Management System for significant emergencies and disasters. This system provides a basic framework and methodology for coordinating an inter-organisational disaster response. The Incident Management System possesses certain design criteria that makes it useful for the range of applications that may be required in the management of an emergency incident, and it provides continuity to the response between organisations, as well as over time.

Conclusion

The Wellington City Council has recognised the importance of emergency management and has implemented a set of practices over the past five years that will see the city become a prepared community. However, no local authority will be able to cope with a disaster in isolation. The support of the nation will be an inevitable requirement in the wake of a disaster of the scale that Wellington can very reasonably expect to experience.

Wellington City Council can encourage better emergency management in New Zealand through its formal commitment to these concepts. This, in turn, will benefit Wellington at the time of its greatest need.

Recent developments in NSW emergency management

by Ian Walker, State Training Co-ordinator, Emergency Management, NSW State Emergency Management Committee

A number of significant national developments in emergency management have occurred over the past two years.

Inter-agency policy co-ordination at National and State levels

In Australia, emergency management policy co-ordination is achieved through a formal structure of emergency management committees at National and State levels. The National Emergency Management Committee (NEMC) is the peak consultative forum for emergency management in Australia. Chaired by the Director-General of Emergency Management Australia (EMA), it comprises the chairpersons and Executive Officers of State and Territory emergency management organisations. The committee meets annually to coordinate Commonwealth and State interests in national emergency management (EMA, 1994).

Each State and Territory has established a peak body to oversee emergency management matters. In NSW, the State Emergency Management Committee (SEMC) is the principal committee established under the State Emergency and Rescue Management Act for the purposes of emergency management throughout the State and, in particular, is responsible for emergency planning at State level.

The SEMC comprises a chairperson appointed by the Minister, the State

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Emergency Operations Controller (SEOCON), representatives of the Emergency Services Organisations, Functional Area Coordinators, and other advisors (see Figure 1).

In NSW, similar arrangements for emergency management committees exist at district and local government levels, with each level responsive to the next highest level. In this way, policy co-ordination on an all-agency basis occurs right down to the local community.

Two recent examples of national policy co-ordination, which have an impact throughout the emergency management structure, are the application of *National Emergency Management Competency Standards* and the *Risk Management* standard.

National Emergency Management Competency Standards

The first edition of the Competency Standards was published in 1995. It has subsequently been revised and rewritten as a second edition. The final draft of the second edition was referred to the State and Territory Emergency Management Committees for comment by EMA in May 1997.

The impact of developments in national emergency management policy brought about the need for massive

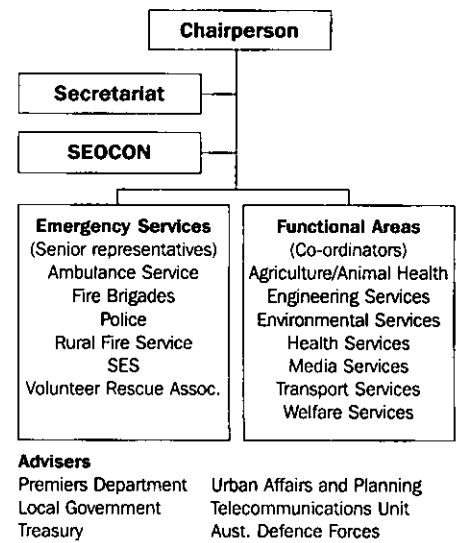


Figure 1: State Emergency Mgt Committee

revision of the first edition. One important development was the endorsement by the NEMC of Australian/New Zealand Standard 4360 — Risk Management and its agreement 'to the incorporation of a risk management approach (based on AS/NZS 4360) into emergency management documentation and the development of appropriate products that established risk management in an emergency management context' (EMA, 1997).

The subsequent incorporation of risk management into the revised Competency Standards required major changes to be made. In addition, the lack of comprehensive evidence guides in the initial edition necessitated their en-

Edition 1 (1995)

- Unit 1: Develop Emergency Management Policy
- Unit 2: Assess Vulnerability
- Unit 3: Select Emergency Management Strategies
- Unit 4: Plan Strategy Implementation
- Unit 5: Implement Plans
- Unit 6: Communicate Effectively
- Unit 7: Manage People
- Unit 8: Manage Resources
- Unit 9: Co-ordinate Resources
- Unit 10: Manage Information
- Unit 11: Process Information
- Unit 12: Manage Training and Education
- Unit 13: Design and Deliver Training and Education

Edition 2 (final draft) 1997

- Unit 1: Contribute to and Implement Emergency Management Policy
- Unit 2: Establish Emergency Risk Management Context
- Unit 3: Emergency Risk Identification, Analysis and Evaluation
- Unit 4: Select and Document Emergency Management Intervention Strategies
- Unit 5: Implement and Review Intervention Strategies
- Unit 6: Controlling Emergencies
- Unit 7: Exercise Elements of Emergency Management
- Unit 8: Communicate Effectively
- Unit 9: Lead, Manage and Develop People
- Unit 10: Co-ordinate Resources
- Unit 11: Process Information

Table 1: Comparison between 1995 and 1997 versions of the Competency Standards

hancement to meet current assessment requirements.

Extent of revision

A comparison of the *Units of Competency* in both editions shows clearly the extent of revision (see *Table 1*).

The new Units 1–5 are complete revisions, incorporating an *Emergency Risk Management* model. Units 6 and 7 are both new units. Unit 8 is a revision of the original Unit 6: *Communicate Effectively*. Unit 9 is a revision of the original Unit 7: *Manage People*, and incorporates a new element 'Facilitate Training, Education and Development Opportunities'. Unit 10 merges and revises the content of the original Unit 8: *Manage Resources* and Unit 9: *Coordinate Resources*. Unit 11 merges and revises the content of the original Unit 10: *Manage Information* and Unit 11: *Process Information*. Finally, the two original Units 12 and 13 have been deleted as they are already covered by the existing Workplace Trainer and Workplace Assessor competency standards.

The revised Competency Standards incorporate greatly improved guidelines for assessment. The original standards are deficient in that they lack clear indicators of the link between learning outcomes from training and units of competency, and methods of assessing whether full or partial competency has been achieved. In preparing submissions for the accreditation of emergency management training, based on the original standards, some rather subjective judgements have had to be made to indicate the extent to which learning outcomes meet various units of competency. The revision includes evidence guides that are greatly enhanced in comparison, and should provide a much more objective basis for such decisions.

Implications for multi-agency training

A major implication at national level is the development of a curriculum framework in emergency management by Swinburne University of Technology (Victoria), funded by the Australian National Training Authority. Based on the National Emergency Management Competency Standards, the curriculum framework is aimed at providing emergency management practitioners with articulated training for the achievement of nationally recognised qualifications. The framework provides competencies required at senior management level through an *Advanced Diploma of Emer-*

Course	Days	Remarks
Introduction to Emergency Management*	2	Prerequisite to other courses
EOC Management*	1	
Exercise Management*	1	
Emergency Response Management	4	Conducted as AEMI Extension and funded by AEMI.
Local Emergency Response Management*	2	
Senior Emergency Management	4½	Conducted by NSW Police Academy for District to State level participants. 'User pays' funding

* Conducted by districts (funding provided by SEMC).

Table 2: Suite of emergency management courses for which accreditation is sought.

gency Management, and at middle management level through a *Diploma of Emergency Management*.

The Australian Emergency Management Institute (AEMI) is currently seeking national accreditation of its residential courses.

Concurrently, the NSW State Emergency Management Committee has commenced a program to seek accreditation of a suite of multi-agency emergency management courses from the NSW Vocational Education and Training Accreditation Board (VETAB), and registration of the committee as the training provider. The courses in *Table 2*, endorsed by the State Emergency Management Committee, are included in this program.

The Introduction to Emergency Management Course has already been accredited by VETAB. Submissions are to be progressively prepared over the next six months seeking accreditation of the remaining courses.

Accreditation of these courses will provide a greater opportunity for emergency management practitioners in NSW to obtain a nationally recognised qualification that meets industry needs and demand for competency based training.

Flowing from the accreditation of courses is the requirement to conduct an objective assessment of each participant based on prescribed learning outcomes. This presents a major problem to those delivering courses where the primary method of assessment is an operations centre exercise. In the past, it has been common practice to observe the participants working as a group in a simulated operations centre and provide a global assessment of the group as a whole. This approach has some validity as, in an actual operational situation, staff members of an operations centre are required to work effectively as a team.

The group assessment approach needs to be reviewed with the requirement to conduct individual assessment. Now each participant needs to be assessed performing the role they would normally perform in the operations centre during an actual emergency operation. The main problem here, of course, is that the roles performed in an operations room are markedly different from each other — Senior Operations Officer compared with Emergency Services Liaison Officer for example. Both roles are equally important, but they are different and the assessment needs to reflect the difference.

The use of prepared check lists for each key position is a possible answer, but these will also need to record the contribution made by the participant to essential group activity, such as operational decision making and planning. By their nature, some positions in the operations centre tend to be far busier and more demanding than others. The capacity to cope with these and other constraints should also form part of assessment. The number of assessors required to observe and objectively assess perhaps twenty plus people being exercised is another constraint to be overcome.

We need to consider this aspect of assessment further and come to some agreement on the optimal way of effectively assessing numbers of participants performing different roles with differing complexities and constraints, whilst making some positive and observable contribution to overall group performance.

Applying risk management to emergency management

The application of the *Risk Management Standard* to the revised *National Emergency Management Competency Standards* is not without its problems. The final draft of the revised standards

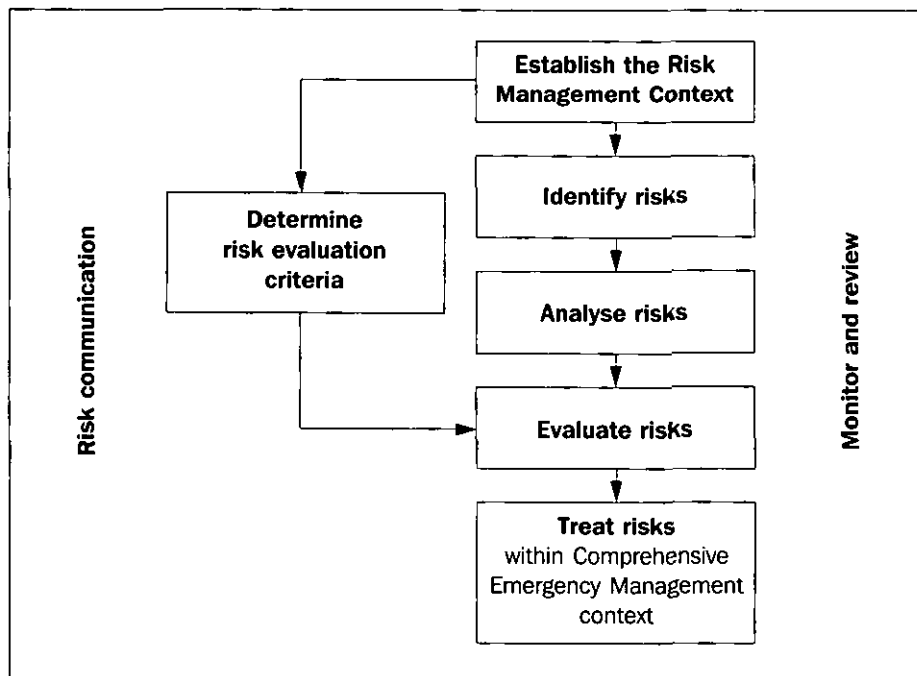


Figure 2: Model for applying Risk Management in an Emergency Management Context

shows a *Model for Applying Risk Management in an Emergency Management Context (Outline)* (EMA, 1997) that is very close to the generic risk management model. The additions are the inclusion of the words 'within Comprehensive Emergency Management context' in the 'Treat Risks' box, and a box indicating the need for Risk Communication at each stage of the process (see Figure 2).

The NSW State Emergency Management Committee, in its consideration of the revised standards, concluded that it was not satisfied that the generic Risk Management Standard had been adequately adapted to emergency management. The committee expressed the view that the standard needed to be properly contextualised before it can be integrated into either the revised emergency management competency standards or curriculum derived from those standards. The link between the Risk Management Standard and the competency standards, which is assumed to exist in the model adopted, is not naturally there, and the appropriate context must be established before the two can be effectively integrated.

Establishing the emergency management context necessitates consideration of such factors as:

- the organisational and emergency environment
- legislated roles and responsibilities;
- government policies
- emergency management arrangements
- social and environmental issues
- hazards affecting communities.

The context also needs to be expressed in terms of the nationally accepted concepts of emergency management — an all-hazard, all-agency, comprehensive approach focusing upon a prepared community.

Application to planning

The application of emergency risk management to planning changes the emphasis from the hazard, and local response and recovery arrangements applied after hazard impact, to a focus on the total vulnerability of the community and the range of prevention, mitigation, preparedness, response and recovery interventions that can be applied by all levels of government and the wider community.

In NSW, since the promulgation of the State Emergency and Rescue Management Act, a range of emergency management plans have been prepared at State, emergency management district and local government levels. Plans prepared at State level (for example) are shown in Table 3.

The basis of this planning has been the hazard and community analysis process where potential and actual hazards are identified and analysed in

State Disaster Plan (DISPLAN)	
Special Hazard Plans	Supporting Plans
Exotic Animal Disease	Agriculture and Animal Services
Aviation Emergency	Engineering Services
Hazardous Materials	Environmental Services
State Flood	Health Services
Nepean-Hawkesbury	Media Services
Flood Emergency	Transport Services
State Bushfire	Welfare Services
State Marine Oil Spill	

Table 3: NSW Emergency Management Plans

terms of their interface with the vulnerable community. An examination of this interface reveals consequences to the community that have emergency management planning implications. These implications lead to negotiated and agreed emergency management arrangements between agencies that are documented as plans.

The problem here is that the documented arrangements, as an outcome of this process, tend to focus upon response and initial recovery requirements that allow the affected community to survive the hazard impact and to rebuild and restore itself back to a normal level of functioning. The other elements of comprehensive emergency management, particularly prevention and aspects of preparedness (community education for example) tend to receive a lesser degree of attention.

Adoption of an emergency risk management model should appropriately place the planning focus on risk and community vulnerability. By lessening community vulnerability (increasing the capacity of a community to cope with an emergency) the levels of risk to the community may be reduced to acceptable levels.

It also promotes a greater degree of communication about risk between responsible agencies and the community. The process provides for a continuous exchange of information and opinion on a two-way basis. It allows the responsible agency to provide important information to the community and, at the same time, allows the public to make known its concerns about risk and request additional information so that it can make informed decisions about its own risk management options.

Application to training

In the same way, emergency management training can be designed to be more relevant to community risk and vulnerability. Members of Emergency Management Committees at all levels should be trained to apply emergency risk management principles to their role of vulnerability assessment, planning, plan maintenance, and identifying and implementing preparedness strategies.

Their training should cover a broad range of comprehensive emergency management options to address risk and vulnerability. In particular, prevention and certain preparedness issues have received disproportionately less attention in the past and greater focus needs to be placed here.

Commonwealth Counter Disaster Task Force

The Commonwealth Counter Disaster Task Force, the peak inter-departmental committee on emergency management at the Commonwealth Government level, met in December 1997.

The Task Force was briefed on the current state of play with the Natural Disaster Relief Arrangements (NDRA), Disaster Relief Payment (DRP), and the status of Commonwealth Government disaster response plans.

One of the key issues discussed at the meeting was arrangements for Commonwealth funding for support provided by states and other cost-recovery agencies when Commonwealth disaster response plans are activated. An inter-departmental committee chaired by EMA has been formed find a way ahead.

For further information contact Rod McKinnon, tel: (02) 6266 5328 or e-mail: rmckinnon@ema.gov.au

New Commonwealth Government disaster response plan

At its meeting in December 1997, the Commonwealth Counter Disaster Task Force endorsed a new Commonwealth Government Disaster Response Plan.

The plan, called COMDISPLAN, prescribes the actions to be taken by Commonwealth agencies in providing assistance to states and territories during disasters and emergencies. It replaces the Australian Disaster Plan (AUSDISPLAN) which has been in use for a number of years.

For further information contact Rod McKinnon tel: (02) 6266 5328 or e-mail: rmckinnon@ema.gov.au

Non-stop Service: Continuity Management Guidelines for Public Sector Agencies

In November 1997, a new publication, *Non-stop Service: Continuity Management Guidelines for Public Sector Agencies* was launched in Canberra.

Continuity management refers to planning and management for the continued availability of

services to governments and the community. The guidelines were developed by EMA in conjunction with a number of Commonwealth agencies and the Bankstown and Knox City Councils, both of which have faced continuity management challenges following devastating fires to their premises in recent years.

Copies of the guidelines are available from Government Info Bookshops in State and Territory capitals.

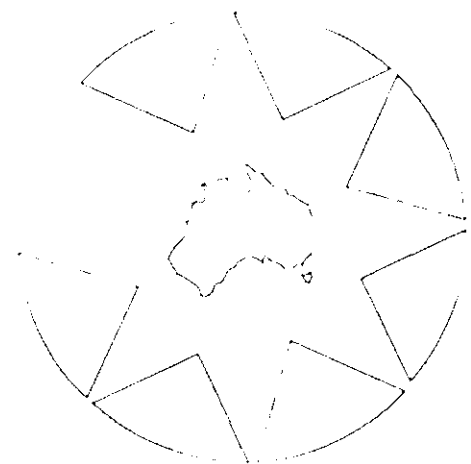
For further information contact Jonathan Abrahams, tel: (02) 6266 5219 or e-mail: jabrahams@ema.gov.au

Drought in Papua New Guinea

Since late September 1997, EMA has been committed to the drought relief effort in Papua New Guinea (PNG). EMA has contributed significantly as a member of the Australian Agency for International Development (AusAID) PNG Drought Task Force and, under Plan AUSAID, which has recently been replaced by AUSASSISTPLAN (see following article), has been facilitating Australian Defence Force and other Commonwealth agency support to the relief effort.

In addition, EMA has maintained a permanent presence in PNG since September with staff working with and conducting training for the PNG National Disasters and Emergency Service and providing direct assistance to AusAID.

For further information contact Phil Stenchion Tel: (02) 6266 5441 or e-mail: pstenchion@ema.gov.au



AUSASSISTPLAN

EMA acts as an agent of the Australian Agency for International Development (AusAID) in providing assistance to countries of the region in times of disaster. Until recently, assistance was provided under a plan called Plan AUSAID. However, since the Australian International Development Assistance Bureau (AIDAB) changed its name to AUSAID, there has been some confusion with this title.

Following a review of the plan, it has been issued as the Australian Government Overseas Disaster Assistance Plan or AUSASSISTPLAN.

Civil defence training

The annual EMA *Introduction to Civil Defence Course* was conducted at AEMI in late November 1997. The focus of course exercise activity was the town of Broome, Western Australia. A good cross-section of the Broome emergency management community attended the course and made a major contribution to its success.

The course provided all participants with an understanding of the complexities of civil defence organisation and planning and the need for close cooperation with the Australian Defence Force during armed conflict situations.

The 1998 course will be of similar format and will again be based on a potentially vulnerable northern town or population centre.

For further information contact David Morton Tel: (02) 6266 5325 or e-mail: dmorton@ema.gov.au

National database of Australian disasters and major hazard impacts

Over the past seven years, Peter May (Manager of EMA's Disaster Awareness Program) has been researching and collating Australian disaster statistics and details to form a national database.

The database includes all natural, human-caused and technological disasters and major hazard impacts using baseline criteria for deaths, injuries and damage or costs caused in each event. Excepting cases that resulted from the effects of a major hazard, records do not include lesser events such as deaths and injuries caused by misadventure (e.g. drowning, snake or spider bites, minor sporting or recreation accidents, small vehicle transportation accidents, minor structure fires etc.).

The database currently contains about 1,000 records, with fields for date, event, deaths, injuries, affected, homeless, insured loss, total estimated cost, other detailed relevant information and sources. Apart from constantly monitoring and adding new information, work is proceeding to 'fill gaps' and add more detail to data especially since 1967 when insurance loss records commenced.

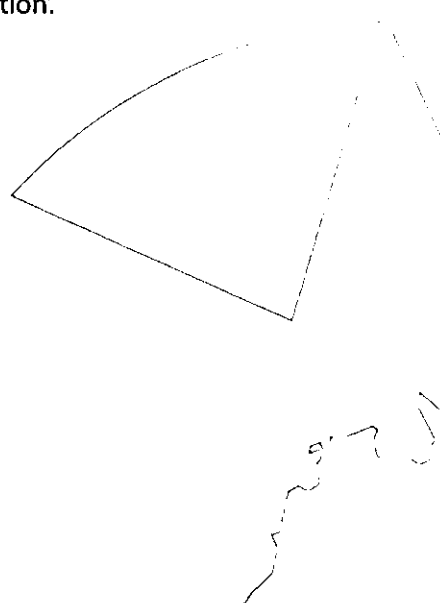
Although the project is not yet fully completed, or available electronically, excerpts from the national database have been published in *Australians and the Environment* (1st edition 1992, 2nd edition 1996) by the Australian Bureau of Statistics, *The Guinness Book of Records* (Australian Supplement 1997) and *Hazards, Disasters and Survival* (4th edition 1992, 5th edition 1997).

Contributions of information or statistics on any relevant events, particularly prior to 1967, may be sent to Peter May, tel: (02) 6266 5611, EMA, PO Box 1020, Dickson ACT 2602 or e-mail: pmay@ema.gov.au

Australia Day Medallion and Citation awarded to Annette Mifsud

On 26 January 1998 Alan Hodges, Director-General, Emergency Management Australia, presented Annette Mifsud with an Australia Day Medallion and Citation in recognition of the excellent service she has provided as Assistant Director Training at the Australian Emergency Management Institute.

The citation, in part, states that 'she has completed essential reforms of the administration of the institute programs resulting in significant financial savings and other efficiencies. Simultaneously, she has substantially facilitated the achievement of private provider status for the Institute and accreditation for its training courses from the Victorian Government Office of Training and Further Education'.



Publications news

New and revised publications now available from EMA

- **Emergency Management Australia** (new, A4 size, colour corporate brochure)
Gives a brief overview of EMA's mission, role and functions.
- **EMA Corporate Plan 1998-99**
Both publications are available from EMA Canberra and Mt Macedon.
- **Non-Stop Service: Continuity Management Guidelines for Public Sector Agencies** (new, B5 size, 80-page colour book).
This publication explains the corporate context for continuity management and applies a risk management approach as espoused by the Australia/New Zealand Risk Management Standard.
It provides advice on risk assessment, risk minimisation measures, emergency planning and resumption planning for public sector agencies, and related issues.
Copies of this book are available from Government Info Bookshops in all capital cities for \$19.95.
- **Landslide Awareness** (new, A5 size, colour pamphlet)
Community awareness and education publication covering Australian landslides (including Gracetown WA and Thredbo NSW), their nature and characteristics and information on survival and property protection, whether from a small rock fall or a major earth movement.
Jointly written and produced by EMA and the Australian Geological Survey Organisation and available locally (free) from your State/Territory Emergency Service.

- **Natural Hazard Awareness for Victorians** (colourful, B2 size, community awareness poster).
Funded by IDNDR and produced by the Disaster Awareness Program (EMA). Available free through VICSES, 151 Sturt St, South Melbourne, Vic 3006.
- **Australian Emergency Manual Series: Part IV: Skills for Emergency Services Personnel**
 - Manual 4: **Land Search Operations** (2nd edition - Amendments 1)
 - Manual 7: **Map Reading and Navigation** (Amendments 1)
 - Manual 8: **Four-Wheel-Drive Vehicle Operation** (Amendments 1)
(First amendments to loose-leaf manuals including the new cover and identification of the expanded AEM Series).

AEMs are available free to approved emergency management agencies from your State/Territory Emergency Service HQ, which maintains a distribution and amendment register. They are available to other requesters from EMA for a cost recovery and handling/shipping fee.

- **Mt Macedon Paper Number 2/1997**
Record of the Communicable Diseases Workshop.
- **Mt Macedon Paper Number 3/1997**
Record of the Disaster Victim Identification Workshop.
- **Mt Macedon Paper Number 4/1997**
Record of the Personal Support Services Workshop.

Mt Macedon papers are available from EMA Canberra or EMA Mt Macedon.

EMA addresses for publications orders:

Emergency Management Australia

PO Box 1020
Dickson ACT 2602
Australia

Australian Institute of Emergency Management

Main Rd
Mt Macedon Victoria 3441
Australia

What's happening at AEMI

Forthcoming Workshops

The Himler Report and Implications for Emergency Management Workshop

3-7 August 1998

This workshop will look at the impact of a range of issues on comprehensive emergency management capabilities. Such issues as outsourcing, compulsory competitive tendering, budget restraints and the reduction in the numbers of local governments will be considered.

Planning for Ecological Disasters Workshop

7-11 September 1998

The aim of the workshop is to review and improve capacities for planning, identifying and responding to ecological disasters. In doing this the workshop will consider approaches for dealing with inherent uncertainties including the role of risk assessment in managing ecological disasters and identify needed attributes and expertise.

Emergency Animal Disease Preparedness and the Needs of the Non-Veterinary Agencies

5-9 October 1998

This aim of this workshop is to ascertain the awareness, training and briefing needs of industry and non-veterinary agencies involved in the conduct of emergency animal disease control operations. A set of guidelines will be developed during this workshop that will form the basis for training modules.

The Australian Emergency Management Glossary

This glossary (ISBN 0 7246 4675 2) has just been published.

The aim of the glossary is to provide a list of emergency management and related terms and definitions. Terms included are technical terms likely to be encountered by emergency management workers, and include terms from a number of specialist but related fields.

The types of organisations that would find the glossary of value include local government, State and Commonwealth government departments, professional peak bodies, processing, storage and transport industries, other large private sector organisations, hospitals, educational institutions, and community organisations.

Background

Confusion in emergency management arising from a misunderstanding over words is commonplace because emergency management is at the nexus of many fields. There is also an increasing proliferation and duplication of terms and definitions, as the emergency management field itself is still evolving and adapting itself to new and changing contexts.

The glossary provides information on the range of terms and definitions to be found in emergency management, and may, in the future, lead to more of a consensus on terms and definitions. It does not present new or different definitions of terms commonly used in emergency management, but draws together definitions from many existing sources.

It also suggests a basic, unified set of terms and definitions.

For more information contact Rob Fleming, tel: (03) 5421 5100, e-mail: rfleming@ema.gov.au

Public Safety Draft Validation Workshop Kit

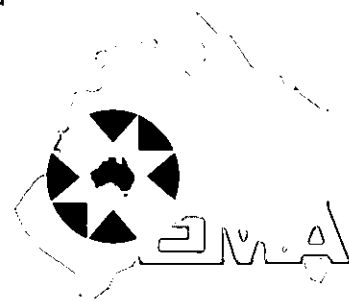
Recent changes to the national training arrangements mean that the Public Safety industry, like other industries in Australia, must take steps to ensure that its training system adheres to the national model, preferably by 1999.

The Australian National Training Authority has funded development of a training package for the industry. This training package represents those aspects of the industry that are common in more than one sector.

A necessary step in the process towards national endorsement is the validation of the draft competency standards, assessment guidelines and qualification framework.

It is important that the draft competency standards, assessment guidelines and qualification framework contained within this kit represent the needs of industry.

For more information contact John Salter, e-mail: jsalter@ema.gov.au



The NSW State Disaster Plan states as a principle that 'prevention measures remain the responsibility of authorities and agencies charged by statute with the responsibility'. However, it tasks Emergency Management Committees at all levels to identify prevention or mitigation options, to refer these options and recommendations to the appropriate responsible agency, and to monitor the outcomes. Training programs, particularly those delivered at district and local levels, need to provide learning outcomes that equip members of committees to meet this challenge.

National Emergency Management Committee endorsement

The generic *Risk Management Standard* needs to be more effectively contextualised to the emergency management system before it can be formally endorsed as the basis for the revision of the *National Emergency Management Competency Standards* and the derived public domain curriculum. An emergency risk management model that adequately provides this context must be developed for the endorsement of the NEMC before any action to submit the standards to ANTA for final approval is taken.

Emergency management lessons

The recent landslip emergency at Thredbo is an event from which we can draw important lessons to apply to our risk and emergency management efforts. Although operational debriefs and official enquires are still continuing, there are a number of general observations that can be made that may influence or reinforce future preparedness for impact events of this type.

- The event was an *emergency*, as prescribed by the State Emergency and Rescue Management Act, as it required 'a significant and coordinated response'. Even though the area directly affected by the landslip was relatively small, the range of resources required and the number of agencies from which the resources were to be accessed was 'significant' and required 'co-ordination'.
- There is no designated 'combat agency' for a landslip event. Under the NSW State Disaster Plan, the emergency management structure assumes control of an emergency for which there is no combat agency. Control and co-ordination was applied by emergency operations controllers operating from Thredbo and Jindabyne.

- The planned location of both the district and local Emergency Operations Centres was adjusted due to the localised nature of the emergency. Both EOCs moved 'forward' from their designated locations, with the Local EOC acting as Site Control at Thredbo, and the District EOC being established at the National Parks and Wildlife Service Headquarters at Jindabyne to co-ordinate the accessing of out-of-area resources, including the all-important engineering advice. The established District EOC at Queanbeyan was considered to be too remote for this operation.

'The Thredbo landslip operation provides us with a timely reminder of the importance of identifying and analysing the total implications of risk and community vulnerability, and of considering a range of comprehensive emergency management options to meet the assessed threat to the community.'

- This flexibility in the control and co-ordination structure should preferably be planned for, with the process documented in the District Disaster Plan. Problems of establishing and maintaining appropriate communications from and between the substitute EOCs need to be addressed beforehand.
- The emergency became an international media event. Management of the mass of media resources is a major and continuing problem. Emergency controllers and commanders of participating agencies must be available to provide regular up-dated briefings to media repres-

entatives. At the same time, controllers should consider the media as a valuable resource in passing important information to the general community, both inside and outside the affected area. Again, the use of the media to pass public information must be planned for.

- The State Emergency Operations Centre in Sydney was activated to co-ordinate State and National level support to Thredbo, and to disseminate information to the Government and to emergency services and supporting agencies. Although working at a minimum staffing level, its operation was necessary over the full period of the emergency.

Conclusion

The adoption of the revised National Emergency Management Competency Standards, based upon the Risk Management Standard, promises to provide major benefits to emergency management planning, training and general preparedness in NSW.

It is important, however, that the National Emergency Management Committee ensures that the Risk Management Standard is appropriately contextualised to emergency management before its final endorsement is given.

The Thredbo landslip operation provides us with a timely reminder of the importance of identifying and analysing the total implications of risk and community vulnerability, and of considering a range of comprehensive emergency management options to meet the assessed threat to the community.

References

- Emergency Management Australia 1994, *Australian Counter-Disaster Handbook, Volume 2, Australian Emergency Management Arrangements*, Fourth Edition.
- NSW State Emergency Management Committee 1997, *Emergency Management Arrangements*.
- Emergency Management Australia 1997, *Competency Standards and Curriculum Development*, paper submitted to National Emergency Management Executive Group Meeting, 23-24 July.
- Emergency Management Australia 1997, *National Emergency Management Competency Standards (Draft)*, Second Edition.
- NSW State Disaster Plan (DISPLAN) August 1994, Part 1, Paras 107 and 113f.
- State Emergency and Rescue Management Act 1989, Section 4.

Recent developments in emergency management

by Doug Angus, Director, Disaster Management Service Unit, Queensland Department of Emergency Services

Incidents and disasters, which may be generically described as emergencies, are quantitatively and qualitatively different.

At the scene of an incident, police establish control, the fire service puts out the fire and rescues the trapped, and the ambulance service treats the injured and transports them to hospital.

Most importantly, no agency *directs* another. They generally work together to well-established protocols, usually without direction from higher authority. There is generally little significant 'off-site' coordination of the response.

When a disaster occurs, however, things are very different:

- there be no 'site' — floods, cyclones and bush fires affect wide areas
- access to the impact area is often difficult for some time
- it is difficult to discover what has happened and to identify the extent of the problem
- the problems faced generally exceed response capacity with a consequent need for 'off-site' coordination involving a much wider range of organisations
- initial response will not necessarily be from police, fire and ambulance. In a disaster much of the initial rescue, first aid and casualty transportation is done by the survivors.

In short, disasters are not large scale incidents. They require a very different response that must be reflected in a comprehensive planning process and an operational management system developed to deal with large-scale events.

Inter-agency policy coordination

Queensland arrangements

The disaster management arrangements in Queensland, as contained in the SCDO act and set out in the state disaster plan, recognises that disaster management is a 'whole of government' issue involving shared responsibilities between the state and local government, and involving Commonwealth support and incentives to achieve national congruity.

Presented at the Emergency Services Forum October 7-8, 1997, Brisbane.

It is a local government responsibility to identify local hazards and to implement intervention strategies that will reduce community vulnerability to an acceptable level of risk, subject to a shared responsibility with state government for resource provision, cost sharing and technical advice.

It is a state government responsibility to provide overall policy direction to encourage effective loss prevention strategies and to provide hazard and vulnerability research and technical support. This is managed through a committee system at state, disaster district and local government levels, supported by professional disaster management officers from the Disaster Management Service of the Department of Emergency Services.

The purpose of this structure is to coordinate all resources necessary to plan for and counter the effects of disaster and to provide advice and assistance to government on all matters with respect to disaster management.

The Central Control Group (CCG) is the peak policy body in the state, chaired by the Director General of the Department of the Premier and Cabinet. It has the role of coordinating whole of state resources necessary to ensure all steps are taken to prepare for and counter the effects of disaster and to give advice to government on all disaster management issues.

Twenty three Disaster District Control Groups (DDCG) have been established, based on police districts, for the purpose of implementing comprehensive disaster management policies, coordinating operations and preparing counter disaster plans for the district.

Each Local Government Counter Disaster Committee (LGCDC) is responsible for developing comprehensive counter disaster arrangements within its area of responsibility, preparing plans, co-ordinating operations, and establishing a local emergency services.

In addition to this committee system, the CCG has assigned lead agency responsibilities for functional and threat specific arrangements based on the core business of specific departments and existing legislative responsibilities.

These functional and threat specific arrangements include:

- *community recovery* (Department of Families, Youth and Community Care)
- *transport and transport engineering* (Department of Transport)
- *medical, mental and environmental health* (Department of Health)
- *emergency supply* (Department of Public Works and Housing – Procurement)
- *communication* (Department of Public Works and Housing – QTEL)
- *building engineering services* (Department of Public Works and Housing – QBUILD)
- *coordination* (Department of Emergency Services)
- *exotic animal diseases* (Department of Primary Industries)
- *pollution of the sea by oil* (Department of Natural Resources)
- *bushfire* (Queensland Fire and Rescue Authority).

There is also a number of threat specific coordination committees for hazards not covered by specific legislation provisions, namely:

- Queensland Tropical Cyclone Coordination Committee (QTCCC)
- Queensland Flood Coordination Committee (QFCC)
- Queensland Geohazards Coordination Committee (QGCC).

Commonwealth arrangements

Australia's emergency management arrangements reflect the fact that under the constitution, State and Territory governments each have responsibility for protection and preservation of lives and property. They exercise control over most of the functions essential for effective disaster prevention, preparedness, response and recovery.

National arrangements

The basis of the national system is a partnership between Commonwealth, State and Territory and local governments, and the community. The goals are to minimise vulnerability to hazards, protect life and property and to facilitate recovery and rehabilitation.

Elements of the national system

There are five elements of the national system, namely:

Commonwealth Financial Assistance

This is managed through a Commonwealth-State agreement for financial relief to the States and Territories under the National Disaster Relief Arrangements (NDRA). Under this agreement the Commonwealth reimburses States and Territories in accordance with a formula for expenditure on agreed eligible measures;

Commonwealth Counter-Disaster Task Force

The CCDTF is a senior interdepartmental committee that is activated in the event of a disaster causing major social and economic dislocation incapable of being dealt with under normal Commonwealth-State arrangements.

National Emergency Management Committee

The NEMC is the peak consultative forum. It is chaired by the Director General of Emergency Management Australia, and comprises the chairpersons of the State and Territory emergency management organisations. This committee meets annually to coordinate Commonwealth and State interests in national emergency and disaster management

Emergency Management Australia

Federal Cabinet approved the establishment of the Natural Disaster Organisation (now EMA) within the Department of Defence in 1974. The function is to:

- enhance national emergency management capabilities
- coordinate Commonwealth physical support to the States and Territories and Australia's region of interest
- support the development of overseas emergency management capabilities.

State and Territory Emergency Management Organisations

Each State and Territory has established a peak body to consider and manage emergency management matters.

A major challenge, certainly from a Queensland perspective, in respect to

the Commonwealth-State interface arrangements, is the use of NEMC to deal with both coordinated incident management arrangements and 'whole of government' disaster management arrangements.

Queensland's representation on the NEMC is drawn from the Central Control Group, which does not have a direct responsibility for emergency management issues. These are the direct legislative responsibility of statutory response agencies.

A more effective national coordinating process to deal with issues of an incident management nature needs to be derived, either at the Commonwealth (NEMC) level or by way of 'whole of state' coordination within Queensland.

Applying risk management to disaster management

More Queenslanders are vulnerable to disasters than ever before. There have been rapid demographic and infrastructure changes on flood plains, coastal foreshores and bushfire prone areas. Many Queenslanders lack knowledge about hazards and what action they can and should take, there is community complacency about risk, and public safety and disaster risk are not prime considerations for public policy decisions.

Recent national developments

The 1994 Senate Standing Committee Report stated that disaster management arrangements in Australia were too response focused and identified the need for a change in emphasis to provide a more comprehensive and integrated approach. The report emphasised the need to focus on areas of prevention, preparedness planning, training and recovery.

The Senate Standing Committee Report coincided with the release of the *Australian/New Zealand Risk Management Standard* (4360, 1995). A risk management workshop, conducted at AEMI to consider whether this standard could enhance the formulation and delivery of emergency management services in Australia, concluded that emergency management could be promoted more effectively through such a risk management analysis and decision making process. This recommendation has been accepted by the NEMC, and as a consequence *Guidelines for Applying Risk Management in a Disaster Management Context* will be released later this year, following acceptance by Standards Australia.

NEMC endorsed the development of a *National Disaster Mitigation Strategy* in September 1996. A subsequent national workshop identified that the benefits to be derived from such a strategy included the reduction in human suffering and loss of life, as well as economic and social benefits in the short, medium and long term, which would outweigh the cost of adoption.

Natural Disaster Relief Arrangement guidelines have been redrafted by the Commonwealth Department of Finance and agreed to in principle by State and Territory governments. These draft guidelines incorporate the requirement for State and local government agencies to demonstrate acceptable disaster mitigation efforts as a condition for obtaining funding to assist with the restoration and repair of public assets.

Consequential initiatives

As a consequence of the identified need to broaden the focus of disaster management, and to incorporate the concept of disaster mitigation based on a disaster risk management methodology, there are a number of concurrent supporting initiatives being pursued:

- *Competency Standards*. Revised National Emergency Management Competency Standards, incorporating a disaster risk management methodology, are scheduled for release later this year.
- *Curriculum*. National Emergency Management Training Curriculum, as derived from the competency standards, is being developed and will be available for release shortly.
- *Publications*. A review of all EMA produced publications and training support material is being undertaken progressively with a view to incorporating concepts of mitigation and risk management. This is expected to be completed by the end of 1998.

Queensland initiatives

Queensland has embarked on a number of initiatives complementary to the overall national direction.

Queensland Disaster Coordination Group

Following CCG's endorsement of the development of a National Mitigation Strategy, the acceptance in principle of the revised NDRA arrangements, and the adoption of a Disaster Risk Management Methodology, a decision has been taken to establish a 'whole of government' Disaster Coordination Group to develop policy options for consideration

by the CCG in respect to those policy issues and others.

Local government protocols

The development of protocols between the Local Government Association of Queensland and the Department of Emergency Services are in the final stages of negotiation. The purpose of these protocols is to better define the relationship between the State government and local governments with emphasis on a shared responsibility relative to comprehensive disaster management.

Floodplain management

To date Queensland does not have a floodplain management policy. Action is now in hand however, to develop such a policy and to incorporate in it considerations of public safety and risk management on a 'whole of floodplain' basis.

Integrated Planning Bill

An Integrated Planning Bill is now before parliament. This legislation will replace the existing Local Government (Planning and Environment) Act 1990. Significant effort is being made to have issues of disaster mitigation and risk management addressed in the Bill as they relate to zoning and land use management, building codes and regulations, and compensation provisions associated with zoning changes.

Disaster risk management study

A flood risk management study has been commissioned for the Murweh Shire (Charleville) with a view to developing a comprehensive disaster plan designed to reduce community vulnerability to an acceptable level. The outcome of this study will be used as an example for other Local Governments in respect to the adoption of a holistic disaster risk management approach, and as input to the development of the State Floodplain Management Policy.

Spacial information management

Successful risk assessment is reliant on access to appropriate information. In recognition of this, action is being taken to promote the use of spacial information management techniques as applicable to a disaster management process, especially at the local government level. Efforts are also being made to link this to the concept of a *Lead Information Management Functional Agency* under the Department of Natural Resources as a component of the State Disaster Plan.

Disaster risk management training

A series of disaster risk management workshops in 1997 for key staff of the Emergency Services Division, lead functional agencies and local government officials.

Competency standards and their implications

National Competency Standards

Nationally-agreed Emergency Management Competency Standards (NEMCS) were first released in 1995. These standards are currently being reviewed in accordance with Australian National Training Authority (ANTA) requirements, and the opportunity is being taken to incorporate the previously mentioned *Guidelines for Disaster Risk Management* into these competency standards.

This will provide both full-time and part-time professional disaster managers with a planning tool and a sample methodology to facilitate logical decision-making based on an analysis of the relevant factors. There is a need for a competency-based assessment process suitable for use within the framework of the NEMCS. This is a challenge in the light of the unique profile of disaster risk management.

Disaster management practices bring into the assessment environment many agencies that do not have a regular emergency management role e.g. Commonwealth, State and local government, volunteer agencies, community groups and industry.

Consequently, the assessment process must deal with a broad cross section of attitudes, abilities, and a diverse appreciation of emergency and disaster management.

Assessment procedures therefore, must be capable of administration within a range of settings and organisations and will require the identification of a range of assessment approaches suitable to the various components of the NEMCS.

A preliminary analysis (EMA 1997) of assessment requirements in respect of the elements of the NEMCS has been conducted and has identified that:

- workplace projects and assignments will need to be considered as an assessment method in respect to these elements containing generic management expertise
- assessment by observation will be of limited use due to practical and administrative constraints
- written tests, particularly when undertaken in conjunction with a

period of training, must be regarded of limited value in assessing competency relative to workplace performance

- the development of procedures to access personal portfolios from candidates depicting prior performance should be considered as an assessment method
- a policy of combining assessment approaches will be necessary.

Clearly the combination of geographic and agency distribution will require the seeking of innovative ways to provide emergency managers with equitable access to assessment.

The resources needed to meet this challenge will be significant. Nevertheless, if properly developed, the resultant system of assessment will contribute greatly to the efficiency and ongoing development of a National Emergency Management capability.

Curriculum

A total review of emergency management education and training in Australia is being undertaken in the light of changes to NEMCS. The current curriculum is based on a prevention, preparedness, response and recovery (PPRR) model. A curriculum derived from the new NEMCS, incorporating disaster risk management methodology, is likely to overcome a significant weakness of the PPRR approach, by providing a holistic process rather than one anchored in discrete processes.

In recognition of the need for a comprehensive national training program, a project has been set up through Swinburne University with ANTA funding to develop an appropriate curriculum framework, based on NEMCS. The aim is to allow emergency managers to achieve nationally recognised qualifications, with flexible entry points incorporating credit transfer, recognition of prior learning, and flexible exit at the following levels:

- *Advanced Diploma* level, providing competence at senior management level in a multi-agency and multi-jurisdictional environment
- *Diploma* level, providing competencies to operate at middle level with responsibilities for team coordination, specialist knowledge and skill in planning for and evaluating risks.

Lessons in emergency management

The overriding factor influencing a need for change in disaster management is that, given the increasing pressure for accountability in government and to do

more with less, we can no longer continue to focus only on disaster response and recovery as an effective means of managing disaster risks.

More emphasis must be placed on promoting activities that serve to reduce community vulnerability to disasters. This can be known as hazard mitigation, which in its simplest sense is risk management. It is the key to reducing the costs of disaster, personal suffering and economic disruption. We can and should learn from lessons elsewhere.

Approaches in other countries and States of Australia

USA

In response to unacceptable loss of life and property from recent disasters, and the prospect of increasing catastrophic loss, the USA has developed a National Mitigation Strategy through the Federal Emergency Management Agency (FEMA) to try to reduce these losses.

This tries to engender a fundamental change in the public perception of hazard risk and mitigation, and to demonstrate that mitigation is often the most cost-effective and environmentally sound approach to loss reduction.

The foundation of this strategy is the strengthening of partnerships at all levels of government and the private sector, and the empowering of individuals to fulfill their responsibilities of ensuring a safer community.

The strategy has four major initiatives in the areas of hazard identification and risk assessment:

- applied research and technological transfer
- public awareness, training and education
- incentives and cost sharing
- leadership and coordination.

FEMA's vision of the future is simple. They look forward to a time when people think of mitigation in the same way as they think of seatbelt usage in cars — as a necessity. They want people to consider risk reduction needs as part of their daily lives, expect their local and state officials to take action to protect their homes, businesses and infrastructure, understand their risks and to think 'mitigation' when they build a house or purchase property, and when they vote (Krimm 1997).

Most importantly they want communities to take appropriate action to reduce the loss of life, injury, economic costs and disruption that all too often accompany floods, hurricanes, wildfires, earthquakes and other hazards.

They want those who knowingly choose to accept greater risk to accept responsibility for their choice.

New Zealand

The New Zealand Government's interest in emergency risk management dates back to 1985 with the transfer of responsibilities to local authorities. The central government put in place policies designed to encourage more effective public safety and loss prevention strategies (Helm 1996).

The idea was that the central government would accept shared responsibility for restitution of damage only if the local authority concerned had done its part to mitigate and manage risk to its assets.

By obliging local government and other asset owners to accept a share of the responsibility for restoring damaged infrastructure, the central government's intentions were to transfer some risk to limit its potential financial exposure and to shift the focus to loss prevention and better overall risk management.

Recent reviews of emergency services and disaster planning have highlighted a problem of uneven practices where some local governments are well advanced in their planning while others are much less so.

As New Zealand moves towards improving its national and local disaster management system, it is clear that risk analysis will provide powerful new instruments to deal with particular hazards in regard to allocating resources, helping set priorities, and setting standards for public sector safety issues.

Australian States and Territories

The following comments do not reflect State or Territory policy perspectives in relation to disaster mitigation and risk management. They merely reflect the expressed views of emergency management officials as to the current situation.

New South Wales

The Commonwealth's stance on NDRA and mitigation is unlikely to have a major effect on flood hazards in NSW.

They have had an extensive floodplain management strategy in place for a number of years, which has had a positive influence on flood mitigation in the form of structural works (e.g. levees, stream clearing and straightening). It has also had a marked influence in land-use zoning, cost-benefit studies and response planning.

The view is that they have always employed a risk management approach using the PPRR concept, and that the

changes inherent in the incorporation of a risk management approach into competency standards and training curriculum may unnecessarily complicate that which is considered to be an already successful approach to comprehensive disaster management.

Victoria

Victoria has produced a *Community Emergency Risk Management Model* based on the Risk Management Standard. They have undertaken several projects at local government level involving the application of the risk management process. A particular project based in Geelong is being used as a national case study.

All seventy-eight local government bodies in Victoria have embraced the concepts of risk management and the process was used as the basis for audit of local government emergency plans.

A *Community Emergency Risk Management Facilitators' Package* has been developed and staff are being trained in this. A training program has been instituted that specifically addresses the issue of risk management as it applies to the State's emergency management arrangements. There is a high level of acceptance of the risk management approach.

Victoria has not made heavy demands on NDRA funding arrangements in the past but is using the Commonwealth's stance as a means of adding further impetus to disaster mitigation and local government's adoption of risk management.

South Australia

South Australia is still considering the issues of disaster mitigation and risk management. A Mitigation Committee has only recently been formed under the *State Disaster Committee*.

Commonwealth-State NDRA arrangements have little effect in SA.

Western Australia

Commonwealth-State NDRA arrangements are of limited significance to Western Australia. The state as a whole is moving to reduce the level of reliance on Commonwealth support.

A recent review of emergency management arrangements focused on the need to adopt a more comprehensive whole of government approach based on a risk management process.

The recommendations contained in the consultant's report are yet to be endorsed in full or in part by the Government.

Tasmania

Tasmania considers the adoption of a risk management approach to be useful, although they have not yet determined how this might be applied.

NDRA arrangements are of little significance to Tasmania and the significance of a national disaster mitigation strategy to the State is not yet clear.

There is concern that some confusion has been created within existing emergency management arrangements as a result of the flood of draft guidelines in circulation. There is also a view that the current tertiary-level courses on offer could be more helpful in furthering disaster management expertise.

Summary

There is clear evidence of an increasing focus on a holistic approach to disaster management from a public administration and public safety perspective, both within Australia and overseas.

This has come about from increasing pressure for accountability in government, the need to do more with less, and a realisation of the ever-increasing exposure to disaster risk.

In Australia the impetus for this change can be traced to the 1994 Senate

Standing Committee Report that drew attention to the need for greater focus on prevention, preparedness planning, training and recovery.

The Commonwealth, through EMA and the Department of Finance, has adopted a position of leadership and coordination in the management of this change.

Development in Australian States has been variable, but generally positive in respect of broadening the approach to disaster management.

Queensland, due to its high exposure to natural disaster events in particular, is supportive of the need for change and is embracing wholeheartedly the concepts of hazard mitigation based on a risk management methodology.

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Helping communities to manage their own recovery

By Andrew Coghlan, National Training Consultant, Disaster Recovery.
Presented to the Emergency Recovery Forum, 26-27 November 1997

A recovery management forum was held at the City of Darebin Arts and Entertainment Complex in Victoria on 26 and 27 November 1997.

Mindful of the potential threat of bushfires during the 1997-98 summer, the aim of the forum was to provide participants from a range of agencies with a greater awareness of the recovery process following a disaster. In particular the importance was stressed of individuals and communities being supported in the management of their own recovery.

The forum was jointly sponsored by the Victorian Department of Human Services and Emergency Management Australia and attracted 300 participants during the two days. Participants were drawn from a wide range of agencies, including local government, various State Government agencies and representatives of the non-government sector.

The program

The forum began with an overview of emergency management arrangements within Victoria. Speakers from a number of agencies addressed key aspects, focusing on recovery and the applicability of the Principles of Recovery Management. Later in the program consideration was also given to the different management styles that may be used during the recovery process and their compatibility with these principles.

The overview of emergency management arrangements was followed by a description of the potential bushfire risk during the 1997-98 summer. Two presentations highlighted current and anticipated weather conditions throughout Victoria and strategies being used by the Country Fire Authority to address the current threat. The City of Melbourne also provided a presentation on the broader applicability of risk management in an emergency or disaster context.

The remainder of the forum featured a series of presentations from recovery managers and service delivery staff from a range of different agencies. Presentations addressed a number of broad themes, including:

- bushfire
- media role in recovery
- public health emergencies
- non-natural disasters.

Two presentations on the Dandenong Ranges bushfires of January 1997 highlighted management at the local government level and the critical role of community development officers in supporting and encouraging the recovery of individuals and communities. These presentations were particularly timely given the current threat of bushfire and the upcoming anniversary of the fires. Discussion of the proposed anniversary events, which include the

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Beyond technology: a holistic approach to reducing residential fire fatalities

By Alan Rhodes and Sam Reinholdt, CFA Risk Management Department

Most fire fatalities occur in people's homes. Between 1991 and 1996 there were 550 fatalities as a result of residential fires in Australia (Newton 1997). This figure represents deaths that occurred in residential structures, including accidental or preventable fires, those which were deliberately lit, and cases where the cause was undetermined or there was insufficient information from which to draw a conclusion.

In 1994, house fires accounted for 66 per cent (n=96) of all fire injury deaths in Australia. Between 1979 and 1994 there was a decline of around 35 per cent in the overall rate of death attributed to fire, flames and scalds in Australia (Australian Institute of Health and Welfare National Injury Surveillance Unit 1997), residential fire fatalities remain a significant preventable cause of death, particularly for some vulnerable groups in the community.

Such fatalities have hitherto not received the attention they deserve, perhaps because deaths in residential fires represent a diffuse disaster. In a large-scale disaster centred on a readily identifiable location, entire communities are alerted to the destruction and loss of life, and invariably there is a post-incident investigation which examines both the causes and responses to the disaster. In addition, such investigations generally attempt to develop strategies to prevent subsequent occurrences.

Although deaths due to fire are routinely investigated as individual incidents by fire services, the police, and coroners, fire agencies do not generally keep a detailed record of the wide-range of circumstances surrounding fire-related deaths, and published studies on fire-related fatalities are not extensive.

Nevertheless, it is generally well understood that some groups in the community are more vulnerable to the risk of fire, and that most residential fire fatalities are the result of widely recognised causes. But beyond this general

level of awareness, and although there has been a steady decline in the rates of death from fire in Australia (Australian Institute of Health and Welfare National Injury Surveillance Unit, 1997), the role of fire services and their contribution to the prevention of fire fatalities has received little analysis to date. It is unclear whether initiatives to reduce the incidence of fire-related fatalities are really effective or whether current approaches are likely to achieve further reductions in the future.

Scope of the problem

Traditionally, fire service performance measures have been based upon the ability to provide an efficient response to fires and other emergencies. As a result, the focus of the industry's activities has been on the response and suppression of incidents. 'In effect, the regular occurrence of incidents [has] provided both the need and justification for maintaining and increasing personnel and equipment to react effectively when incidents occur ... Thus, very little attention and few resources have been allocated to dealing with the 'causes' of emergency incidents or addressing community vulnerability' (Smith et al, 1996).

Recently, there has been increasing recognition world wide that incident response represents only one component of managing the risks that fires pose in our community, and there has been a shift towards a wider acceptance of the principles of risk management (Smith et al, 1996). The risk management approach involves developing a thorough and detailed understanding of the nature of risks facing the community, the development of strategies to reduce the likelihood of disasters occurring and the minimising the consequences when they do occur. It demands that organisations diversify their activities to utilise a range of community intervention, mitigation and prevention programs as a means of addressing risks.

However, to be effective, fire prevention strategies need to target those populations at highest risk, and the circumstances that are most likely to result in death (Barillo and Goode 1996a). A recent study undertaken by CFA Risk Management Department aims to provide a clearer picture of the circumstances surrounding residential fire fatalities and from this process to propose strategies for further action.

In the past, the CFA's activities have also generally been focused on protecting life and property from the effects of *wildfires* in rural environments. However, in recent decades, there have been significant changes in population distribution and settlement patterns throughout Victoria that have seen diminishing populations in rural and inner metropolitan areas and a shift to suburban fringes and regional centres (McKenzie 1994). As a result, the CFA's role in protecting communities from *urban and residential fires* is rapidly expanding. This change provides an additional impetus for the CFA to develop strategies to address the risks of death and injury due to residential fires among those most vulnerable.

Over the past decade the characteristics associated with domestic fire fatalities have been well documented, most recently by the Department of Emergency Services Queensland, which conducted a national survey of residential fire-related fatalities (Newton 1997). These studies identify the young, the elderly and those under the influence of alcohol as being particularly vulnerable. Cigarettes and radiators are found to be common causes of fatal fires in homes.

The CFA study does not replicate this work but, by using coroners' records, examines in detail the circumstances surrounding residential fire fatalities in order to understand the factors contributing to them, assess the effectiveness of various preventative measures and identify effective strategies to prevent residential fire fatalities.

It focuses on deaths that occurred as a result of residential fires within Victoria. All such fatalities that occurred between 1 January 1992 and 31 December 1995, and where the Coroner's investigations are complete, were studied, together with the types of fire events. For the purpose of the research residential fire was defined as any unintentional fire that occurred in a place of permanent residence. This included houses, units, flats, caravans, bungalows and sheds. Fires in special accommodation facilities were not examined. Sixty-six residential fire fatalities which resulted from 54 fires were examined during the course of the study.

Data on each of the fatalities was collected from the 'death cards' on each case located at the Coronial Services of Victoria. The circumstances surrounding each residential fire fatality were analysed using a conceptual framework that classifies factors identified as contributing to the event by both 'space' and time. This framework is known as Haddon's Matrix and is used amongst professionals in injury prevention fields (Berger and Mohan 1996).

For the purpose of this research, Haddon's Matrix has been used to identify the range of physical, social and environmental factors contributing to the fatality. It identifies factors related to the host, the agent, and the environment. In analysing fire related injuries and fatalities, the 'host' refers to the human factors in the incident such as the person involved in the fire, The 'agent' refers to the energy transmitting factors such as heat source and fuel. The 'environment' includes both the physical and the social environments. The phases of the event are identified as a chronological sequence of pre-event, event and post event (see Figure 1).

	Host	Agent	Environment
Pre-event			
Event			
Post-event			

Figure 1: Haddon's Matrix

Definition and classification of fire fatalities

Currently fire-related fatalities are not clearly defined, and the complexities associated with the nature of fire-related fatalities are poorly understood. Differences in the definitions, classifications, and record maintenance systems between the fire and coronial services

result in a low correspondence in the numbers of fatalities identified by different agencies. The implications of this are significant. Without a common definition and classification system for fire-related fatalities, performance measurement, monitoring and research becomes more difficult and less meaningful.

Clearly, there is an urgent need to develop a classification system which recognises the diverse range of circumstances in which fire-related fatalities occur. There is also a need to review and update existing methods of record collection and maintenance. This task is currently being addressed, in part, by Monash University, which is developing a National Coronial Information System in association with the Australian Coroners Society. Their work is complemented by that of the Australasian Fire Authorities Council (AFAC) and the Industry Commission in the development of performance monitoring measures for the fire services.

Situational factors

Fatalities in residential fires are the result of a complex chain of events and involve the interaction of multiple factors and occur in a range of situational circumstances. These include the fact that the most common time of fire ignition is between midnight and 8 a.m., that fires are most likely to start in the bedroom or kitchen, and that certain months, usually the colder months, have a higher number of fatalities. These situational factors were also identified in this study. Similarly, this study confirmed the findings of other studies which found that the most common causes of fatal residential fires were cigarettes and heaters.

Many studies have found that not everyone is equally at risk of fatal residential fires. High risk groups are the elderly and the very young (Newton 1997; Barillo and Goode 1996a; Australian Institute of Health and Welfare National Injury Surveillance Unit 1997), persons with physical or mental disabilities (Runyan et al 1992), and people under the influence of alcohol or other drugs (Barillo and Goode 1996b). Although there was a small group of cases examined during this study in which the victims could not be identified as belonging to a high risk group, the majority of victims fell into the high risk groups identified in other research.

Identification of high-risk groups, descriptors of the timing and location,

and the identification of common causes of fatal fires, such as cigarettes and heaters, focus on the situational and 'technical' factors of fuel and heat source. Such information is essential to understanding the nature of the problem but is only part of the answer; it does not provide an understanding of why people die in such fires. The purpose of this study, however, was to understand in more detail the factors that explain why people die in residential fires.

The human factor in fatal fire events

The results of the CFA's study indicate that there are several types of fire events that characterise fatal residential fires. There are also several sets of factors which, if present, will increase the risk of a fatal fire.

Research on the common causes of fatal fires, such as cigarettes, radiators and faulty appliances, is often the focus of studies of fire fatalities (see, for example, Barillo and Goode 1996a). However, such a focus over-emphasises the technical aspects of the hazard. This study attempted to investigate the interaction between the people involved, the agent, and the hazard in more detail. It identified five types of fire events which commonly result in fatalities. These fire events are generally the result of some human action, either directly or indirectly, bringing together a heat source and fuel. These fire events are:

- unsafe use or disposal of smoking materials
- inappropriate use of a heat source for heating, cooking, lighting or other purpose
- flame accessible to people unaware of the potential dangers of fire
- faulty electrical appliances or wiring
- a disabling event causing direct contact with heat source.

The role of the victim or of other people present varies from direct involvement, due to carelessness or ignorance, through to indirect contribution due, for example, to failure to use a barrier around the heat source. It is important to recognise the wide range of contributing actions such as neglect of maintenance, unsafe practices in a wide range of situations, carelessness and fireplay. The direct human contribution is significant in the majority of cases examined, while in some situations the behaviour of the victim or another person contributes less directly (as with use of faulty electrical appliances or when the victim suffers a fall and comes

into contact with an unprotected heat source).

The major causes of residential fires as a whole are not the same as the types of fires identified in this research as the ones which result in fatalities. Typically the five most common causes of house fires are cooking equipment, heating equipment, incendiary or suspicious circumstances, electrical distribution systems and electrical appliances (Newton 1997). But many fires of these types and others are not fatal. In order to understand why people die in residential fires it is necessary to consider the factors which make a fire fatal in one situation but not in another. The results of this study reveal that there are a range of factors which place the people involved at greater risk.

Factors contributing to residential fire fatalities

Analysis of the factors contributing to fatal residential fires has identified three sets of factors which greatly increase the risk of a fire being fatal. Firstly, the study identified pre-existing factors that reduce the capacity of the person to respond effectively to the fire event:

- impaired physical or psychological condition e.g. frail, intellectual disability
- reduced capacity due to temporary state of victim e.g. asleep, intoxicated
- the person lives alone or in an isolated situation.

The second set of factors relates to the increased risk of fire due to the physical environment or human behaviour. Four key factors were identified:

- habitual or incidental behaviour concerning the use of fire agents e.g. a radiator on while asleep, leaving matches within reach of person lacking fire awareness
- presence of materials conducive to fire ignition and fire spread e.g. flammable liquids not properly stored, poor maintenance of appliances, high fuel loads in dwelling
- nature of dwelling e.g. mobile home
- known fire risk behaviour or situation not addressed.

The third set of factors relates to the circumstances that contribute to the victim's response to the fire being ineffective. Six key factors were:

- person responds inappropriately, e.g. remains in dwelling or re-enters building;
- there is no appropriate escape route, e.g. windows are barred, deadlocks are locked or the key is unavailable

- lack of suitable fire protection or extinguishment equipment
- there is no effective warning system
- the victim is directly involved with, or in close proximity to the fire.

In most cases a combination of these factors was present.

Certain types of fire events are more likely to be fatal, and these generally result from the interaction between certain human actions and a range of hazard agents. It is also clear that there are factors which increase the level of risk for some people more than others.

Figure 2 shows the relationships between the factors contributing to residential fire fatalities. The model indicates that the factors identified are in fact indicators of vulnerability which define certain groups as high risk. The model also demonstrates that it is the exposure of the vulnerable person to the hazard event which defines the event as a fatal fire.

Vulnerability

The factors that increase the likelihood of a fatal fire define the vulnerability of people to the hazard event. Hence, the elderly are more vulnerable partly because they are often frail and less mobile and thereby unable to respond effectively. The intellectually disabled are at greater risk because they are often less aware of the dangers of their behaviour. Similarly, people who are heavily intoxicated are less likely to become aware of a fire and are less able to respond appropriately to fire cues. Those who live in mobile homes or homes with barred exits are less able to escape, and those who live in low socio-

economic circumstances are more likely to have faulty appliances or find it necessary to use them in unsafe ways. The study also revealed that there are usually several factors which together define the vulnerability and therefore compound the risk.

Effectiveness of current protection measures

Research on fire fatalities tends to focus on identifying the demographic and situational factors associated with fatalities. Often it is only in final paragraphs that attention is given to prevention issues.

For the purpose of this research an expert panel was used to assess the effectiveness of fire interventions. The assessments by this panel cast significant doubt on the likelihood of current forms of intervention achieving further reductions in residential fire fatalities. A range of typical fire prevention and response measures were selected for assessment, including:

- installation of smoke alarms and warning systems
- design of product or materials to reduce fire risk
- use of on site firefighting equipment
- fire service emergency response
- fire safety publicity
- interactive fire safety education.

The panel was provided with details and circumstances of a sample of the 66 residential fire fatalities and asked to assess each intervention measure as to whether it would be likely to prevent the fatality, uncertain whether the intervention would prevent the fatality, or unlikely to prevent the fatality.

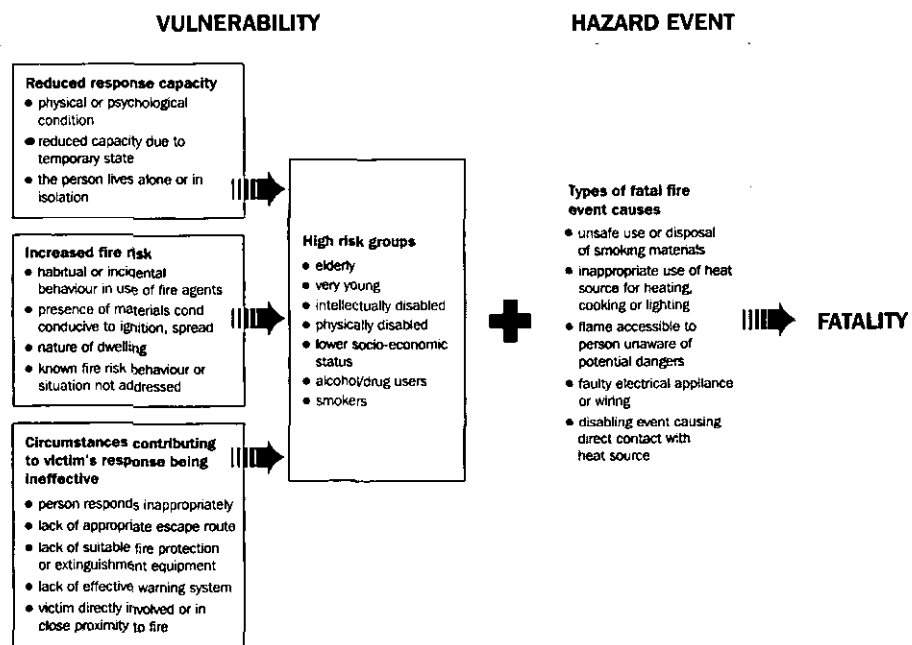


Figure 2: Residential fire fatality vulnerability model

No form of intervention, with the exception of smoke alarms, was rated as more 'likely' than 'unlikely' to be effective in the cases considered. Although there were some cases where smoke alarms were 'likely' to be effective, this assessment often assumed that the person would be alerted to the warning despite the effects of alcohol and other factors, and would be able to respond effectively. The installation of smoke alarms, particularly in residences of high-risk individuals, must continue to be a priority. However, it is unlikely that this measure alone will make a significant difference unless it is accompanied by a range of other preventative measures to reduce the risk of fire starting, and others to enhance the capacity of the occupant to respond effectively.

In a number of cases, product design or fire-resistant materials were considered likely to be effective in preventing ignition or restricting the fire spread but were generally assessed as unlikely to be used, for a variety of cost and practical reasons. In the longer term, changes of this sort may be effective and there is clearly an important advocacy role required to encourage the implementation of measures such as safer product design, use of materials in furnishing which are less toxic, use of child-proof lighters, self-extinguishing cigarettes and other such measures.

On-site firefighting was not assessed as likely to prevent the fatality because the fire was usually too advanced and the victims were often unable to use such equipment. The characteristics of the high risk groups mitigate against the effective use of fire fighting equipment, making this an unlikely intervention strategy for reducing fatalities.

The fire service response was also considered unlikely to prevent the fatalities because, as other studies (Squires and Busuttill 1996) and anecdotal evidence suggest, the fatalities are likely to occur before the fire service is able attend and effect rescue. To achieve further reductions in response time would be prohibitively expensive and even then would be unlikely to ensure the arrival of the fire services before many fatalities occur. This is not to suggest that current levels of response capability can be allowed to decline. However, further improvements in community safety are more likely to come from investment in other more preventative forms of intervention.

The dissemination of fire safety messages and information such as fire

safety publicity in the form of brochures, posters and media advertisements is unlikely to be effective in achieving a reduction in fatalities. Publicity materials may raise awareness of the fire risk but are unlikely to change behaviour or address the factors that define vulnerability. Furthermore, those who are most vulnerable are less likely to have access to, or to be interested in, the messages such material contains. Publicity material may be more useful in raising awareness in those responsible for the care of those most at risk of fire. However, it needs to be in a form which is more appropriately directed at those at highest risk and supported by a range of other more direct measures to address the factors which increase vulnerability.

Interactive fire safety education in the form of home safety audits and face to face safety education offers a greater prospect of changing behaviour and reducing vulnerability. An interactive approach increases the impact of safety messages and provides the opportunity to address specific risk factors in particular situations. However, a major drawback is the difficulty of identifying and gaining access to high risk individuals and the cost of personnel to deliver such programs.

In a number of the cases presented to the expert panel, residential sprinklers were identified as a potentially effective means of preventing fire spread and the consequent fatality. Whilst they may provide adequate protection in some circumstances, there are several limitations. Where the victim is directly involved in the fire, as in disabling events or cooking accidents, sprinklers are unlikely to be effective. Similarly, where the fire starts in the same room as the victim, the effects of the fire may be fatal before sprinklers are activated or become effective. Furthermore, the use of sprinklers to reduce the vulnerability of high risk groups requires that such individuals are identified, and are able to afford the installation of sprinklers. Sprinklers need to be considered simply as one component of a fire protection 'package'.

This study of factors contributing to residential fire fatalities and the effectiveness of fire intervention measures highlights the complex nature of residential fire fatalities and the difficulty of devising a simple strategy for reducing the number of fatalities. Countermeasures that focus on dealing only with the hazard agent provide only part of the solution.

A holistic approach

It is characteristic of the fire and emergency services and the fire protection industry that, when considering residential fires, the focus is on the hazard or cause of the fire. The dominant paradigm is to view the fatality as the result of an event in the physical environment. One of the consequences of this view is to focus on technological solutions. For fire services this has traditionally meant seeking to improve suppression and response capability through the use of better communications, equipment and distribution of resources. Similarly, fire protection focuses on the development of more effective technical systems through use of detection equipment, engineering design, suppression equipment and so on. These are essentially environmental interventions that do not require the active involvement of the user.

These external forms of intervention which make structural changes to the environment, and which require limited or no action by the individual to reduce the risk have been widely implemented in industrial and commercial environments. But whilst these measures have significantly improved fire safety in these settings over a long period of time, residential fires remain the main source of fire-related fatalities.

Widespread domestic application of these technological solutions is much more difficult to achieve because of the long time span involved in replacing buildings, and the relatively high cost, which is typically borne by individual property owners. In residential settings the reliance on technological solutions has traditionally meant there has been a public reliance on fire service response, and measures such as smoke alarms, residential sprinklers and safer product design. Despite the steady decline of fatalities in all types of situations, residential fires remain the major cause of loss of life from fire.

Reliance on technological measures is unlikely to be effective. Smoke alarms are useless if residents do not understand the need for regular maintenance, and legislation to make smoke alarms mandatory will be ineffective if householders do not know how, or are not able, to respond appropriately to warning signals. The study also suggests broad-scale media campaigns are also of limited value on their own because of the range of factors involved, the complexity of interaction, and the difficulty in achieving changes in

individual behaviours. Furthermore, such measures are not equally applicable as different groups in the community are not vulnerable in the same ways.

The results of this study suggest that a shift in focus from the hazard agents to the vulnerability factors may be more productive in addressing the problem of residential fire fatalities. The interaction between the victim (or others) and the hazard agent, and the existence of multiple factors contributing to vulnerability, also means that it is unlikely any one counter measure is likely to be totally effective.

Proposed strategies

Effective fire intervention strategies require a different approach from that currently adopted by fire services. A new paradigm for fire intervention would involve a more holistic approach which recognises the complexity of the problem and employs a range of integrated measures to address the specific needs of vulnerable groups in the community. As a result of the study, the following strategies are offered for addressing the prevention of residential fire fatalities.

Identify the needs of high risk groups in community.

This study has identified three major sets of factors which define vulnerability to residential fires. These factors are, in many respects, manifestations of a range of personal lifestyles and behaviours in particular social situations.

Generalised notions of personal and community safety will not necessarily provide insight into the needs of high risk groups. The key task is to develop an understanding of how people in these high risk groups or those responsible for their care perceive the risks in the context of their own situation. Similarly, measures to improve safety are unlikely to be accepted and implemented if the people concerned find them impractical, inappropriate, and irrelevant. If fire services are to meet the needs of the community they must first understand those needs.

Consultation and collaboration with members of high risk groups, those responsible for their care, and other stakeholders is essential, if effective strategies are to be developed.

Shift the focus from dealing with hazard agents to addressing vulnerability of high risk groups.

The traditional focus on technological solutions to deal with hazard agents underestimates the role of human

actions in contributing to fatal fire events, and diminishes the significance of the range of largely personal and social factors which define vulnerability. The research suggests that to address these human factors will require a major shift in focus. Effective fire prevention strategies must involve dealing with a range of social issues in order to address the risk factors which increase the vulnerability of particular groups. Issues such as alcohol and drug use, low socio-economic status, lack of access to resources and facilities, and social isolation are more significant in determining the likelihood of a fatality occurring. In order to deal with these issues it is necessary to address the human dimensions of the problem.

Employ a range of measures to address specific fire safety issues

The study suggests that fatalities occur amongst the 'hard to reach' in the community: those who are less likely to be exposed to traditional fire intervention and safety measures. It is therefore unlikely that any single intervention will provide a solution. An *integrated approach, using a variety of strategies targeted to address the needs of particular groups, is more likely to be effective.*

To address issues of fire safety among vulnerable groups in the community, also requires a strong advocacy role in promoting effective interventions and supporting the requirements of these groups. It could be argued that fire services have lagged behind other organisations who have taken an active role in raising issues relating to particular safety issues in the community. For example, a strong advocacy role has been undertaken within the community on the need for swimming pool fences, restrictions on gun ownership, and in raising awareness of domestic violence amongst many others.

Furthermore, because many in the high risk groups are unable to take full responsibility for their own safety, effective measures need to involve others in improving safety. Family members or members of the local community need to be supported and provided with appropriate resources to ensure the safety of those vulnerable to fire. Whether this means raising awareness of the risk, directly resourcing people to improve safety, providing training in identifying potential hazards, installing fire warning or protection systems, or some combination of these

measures, promoting and supporting greater community responsibility for dealing with the needs of high risk groups is more likely to be effective than broad-scale, generic solutions.

To actively engage people in taking responsibility for their own safety or that of others in their care requires that they:

- appreciate the danger or have an awareness of the risk
- have appropriate information so that they know what to do to address the risk
- have the resources to put effective strategies into place.

Empowering communities to take responsibility for themselves or those in their care is more likely to be effective than relying on the traditional approach which promotes dependence on the response capability of the fire service. A number of existing CFA programs such as *Community Fireguard*, *Juvenile Fire Awareness and Intervention Program* and *Residents at Risk* employ this approach. The task is to develop a range of multi-faceted programs to address the factors which make people vulnerable.

Develop an intersectoral approach to address community safety issues

Those who are vulnerable to fire are also more likely to be the victims of other forms of injury and death. In particular, the very young and the elderly are vulnerable to a range of injuries in the home and elsewhere. Furthermore, a number of the risk factors which determine vulnerability to fire are the same as those which contribute to other injuries (Harrison and Cripps 1994).

There are many sectors such as local government, health facilities, government departments, community services and welfare agencies that share responsibility for the safety and welfare of vulnerable groups. The development of an intersectoral approach to dealing with community safety issues reduces duplication and also takes advantage of the synergy resulting from the activities of various sectors reinforcing each other rather than operating in isolation or in opposition. Traditionally, fire services have been very narrow in their approach to fire safety and have encouraged the notion that it is their responsibility to deal with fire, usually, as discussed, through the application of technological approaches to improving suppression capability.

In order to address the needs of those most vulnerable to residential

fires, the fire services urgently need to form partnerships with a wide range of other organisations which deal with safety issues and work with the same groups in the community.

Both at the organisational and at the local level, fire services need to place greater emphasis on developing networks and learning to work effectively with a range of community organisations, many of which have different perspectives and ways of working from those traditionally employed by fire services. This has major implications for the recruitment and training of personnel in the fire service of the future.

Concluding comments

Reducing the rate of death from residential fires is a key challenge facing fire services around Australia. However, the results of this study suggest that the traditional focus on fire service response, suppression, and technological solutions is unlikely to contribute significantly to further reductions in fatalities.

The study has highlighted the role of social and behavioural factors in residential fire fatalities. It suggests that attention needs to shift from technological solutions to activities that address the human dimension of the problem and from dealing with hazard agents to addressing the vulnerability of high risk groups. In conclusion, the results suggest that future efforts to reduce loss of life from residential fires will only be effective if the fire and emergency services explore opportu-

nities to employ a more diverse range of strategies to address the problem.

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Responding to Thredbo

By Dr Sashi Kumar, MBBS DLO AMC FACEM, Director, Emergency Medicine, The Canberra Hospital

On the night of the 31st July of 1997 a landslide at Thredbo cost nineteen lives. This article details the site medical response to the disaster at Thredbo from the Canberra Hospital.

Notification

The Emergency Department at the Canberra Hospital was notified of the disaster at 12.30 a.m. on 31st July 1997 by the Goulburn Ambulance Control. The medical co-ordinator of the South East NSW region, Dr Trish Saccsan-Whelan, contacted the ACT Medical Commander, Dr Kumar. The initial reports indicated casualties of up to 100 in number by 2.00 a.m. The revised list of casualties was down to between 20 and 30. The medical controller of ACT was notified by the site commander of the incident.

The medical co-ordinator at Goulburn requested a site medical team, preferably including an anaesthetist and an emergency physician. Initially this team was to leave Canberra immediately. This decision was revised and it was decided to leave Canberra at 4.00 a.m. so that the team can be on standby when search and rescue commenced at day break, at approximately 6.00 a.m.

The external disaster plan of the Canberra Hospital was activated and a site medical team was assembled in the emergency department. The team included the medical commander for ACT, Dr Kumar, Dr Lawrence, VMO anaesthetist on call and four emergency-trained nurses from the emergency department who were called in. A team was assembled and ready to be depart within 30 minutes of notification.

A standard medical site team of the hospital comprises one doctor and two nurses, and on this occasion two such teams were assembled.

Transport to the scene

The ACT Ambulance Service was able to transfer the team to the site. An ambulance van with equipment and another vehicle commanded by ACT Ambulance Superintendent Jon Quiggon was able to transport the team. The team was briefed at the Ambulance bay of the Emergency Department prior

to departure by the medical commander and ambulance superintendent. This explained to the team the nature of the disaster and the number of expected casualties and the role of the team on arrival at the site.

Disaster equipment

The team stopped at the Cooma village ski shop, where they were kitted out for mountain conditions on this wintery night where the temperature dropped down to -9°C . This included waterproof pants, jackets, socks, gloves and hats. The proprietor of the ski shop was extremely courteous, generous and helpful and the team arrived at Jindabyne at daybreak, where they were met by other emergency services vehicles. It was obvious here that the team could not proceed further towards the site as it was declared unsafe and the search and rescue operation had been withheld pending a review of the site by engineers to decide on the safety issue.

Emergency Operation Centre (EOC)

The EOC had been set up soon after the incident at the Jindabyne Information centre, about a 20-minute drive from the site. The ACT Ambulance commander and medical commander met with EOC controller Chris Ingram (NSW Police) and NSW Ambulance commander, Phillip Brotherhood. Regular briefings were held at the EOC, to assess the situation and obtain regular sitreps. The ACT medical team was transported to the nearby primary school to rest and await further instructions.

Communication

Regular mobile phone communication was maintained throughout the day with the medical co-ordinator at Goulburn, the medical controller in Sydney and the ACT Medical controller. It was also possible to keep in close contact with the site medical commander.

The Canberra Hospital was on standby for Code Disaster, which was revised by 9.00 a.m. as it was clear that it was unlikely that any patients would arrive at the Canberra Hospital for treatment over the next four hours. The operation lists that were cancelled were restarted and later on during the day the

afternoon list was allowed to carry on as normal. The hospital was stood down from Code D by about 11.00 a.m.

Relief team

At 3.00 p.m. it was decided that the ACT medical team would stay in place until a relief team arrived from Sydney to replace the existing team at the site. No casualties were found at this stage.

The relief team arrived at 4.00 p.m. and at 5.00 p.m., following consultations with the site medical commander and the medical controller in Sydney, the ACT medical team left the EOC in Jindabyne.

The medical team was transported back by the ACT Ambulance, and enroute to the Canberra Hospital the news of the sighting of the first body under the rubble was conveyed to the team. There were still no signs of life.

Discussion

The communication from the site to Goulburn and to Canberra Hospital worked extremely well.

The ambulance that transported the team had a flat battery at the Canberra Hospital and had to be jump started by the NRMA. This caused a delay of about 10 minutes and this has been addressed with the ACT Ambulance service.

The equipment of the medical team, especially clothing and footwear, was totally inadequate. This has been addressed by the Emergency Planning committee since the response and a budget has been allocated to upgrade the disaster equipment at the Canberra Hospital.

It was a remarkable effort that a team could be assembled and ready to go within thirty minutes of the request at 2.00 a.m., which was very reassuring.

The hospital control centre was activated but the hospital controller could not be identified on the day. It was well in the late morning until it was clear that the Director of Nursing had assumed that role in the absence of the senior medical executive. This has been addressed with hospital management.

No casualties were seen or treated at the scene but a team was assembled dispatched and arrived on time fully geared and ready for action upon notification.

Sole survivor

The sole survivor, Stuart Diver, arrived at the Canberra Hospital by helicopter. His arrival was widely published and it was the centre of world media attention. This was handled very well by security and the media-liaison office of hospital. Although the emergency department was fairly busy with the usual weekend rush, Mr Diver was promptly attended to and admitted to the Intensive Care Unit for his injuries.

Lessons learnt

The disaster equipment of the site medical team was reviewed and upgraded and will be updated regularly thanks to a special budget for disaster preparedness and training which has since been initiated.

The issue of hospital controller has been addressed and this will be identified on a daily basis. This information will be available at the communications centre at the hospital.

Dr Sashi Kumar is Chairman of the Canberra Hospital Emergency Planning Committee and joint ACT-Southern NSW Critical Care Committee Site Medical Commander. He is also a member of the ACT Medical Board, ACT Medical Advisory Committee and the ACT Ambulance Service.

He is a member of a number of other associations that have their focus on emergency and disaster medicine, including the Australasian College for Emergency Medicine and the Australasian Society of Emergency Medicine.

Helping communities to manage their own recovery (cont.)

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development and opening of memorial pathways and release of a calendar and compact disc put together by local artists, highlighted the importance of anniversaries and other significant milestones in the recovery process.

As with all aspects of emergency management the media play a key role in publicising and scrutinising recovery activities. This was highlighted in a presentation which focused on media coverage of recent disasters. A second presentation emphasised the importance of working to develop a positive relationship with the media. In this manner the media may become a powerful information dissemination tool. This point was highlighted later in the program during presentations on the Port Arthur shootings.

Following the shootings a positive relationship was developed between recovery agencies and the media, enabling dissemination of information to a far greater audience than would otherwise have been possible.

A consideration of two public health emergencies, Salmonella contamination and Anthrax outbreak, provided an insight into the broad applicability of recovery management arrangements within Victoria. While a decade ago the definition of disaster or emergency was restricted to natural events such as fire or flood, the recovery management arrangements are now being applied to a range of events with significant community impact. Following a presentation of key aspects of Victoria's Public Health Emergency Management Plan consideration was given to the difficulty of developing and maintaining a

community development program following an event which attracted little public attention or awareness.

Presentations on two interstate events were also highlighted as part of the program — the Port Arthur shootings of April 1996 and the more recent Thredbo landslide.

The Port Arthur shootings may be considered Australia's first 'national' disaster. While the event took place on the Tasman Peninsula in Tasmania, the majority of people deceased came from mainland states, particularly Victoria. The first presentation on Port Arthur highlighted recovery activities within Tasmania, and the second looked at the support provided to Victorian individuals and families affected by the event.

The two presentations emphasised the importance of effective coordination of services and activities which may be provided by a wide range of government and non-government agencies during and after a disaster. The difference in this event was that services required coordination not only within one particular State but also between States.

A presentation on the Thredbo landslide gave participants an opportunity to consider the approach taken to recovery management in New South Wales, where the principles of recovery management have been enhanced by a 'Memorandum of Understanding', developed with key non-government agencies to formalise their involvement.

In summary, the presentations highlighted the need for planning for disaster recovery, particularly at the local level. They also reinforced the fundamental principle that while individuals and communities will need varying levels of support the most effective recovery from any disaster is that which is driven by community needs and input.

One of the main reasons for the success of the forum was the quality of each of the presentations, both in delivery and content. A selection of papers will be published in the next edition of this journal.

Expo displays

In addition to the formal presentations a number of expo stands provided the focus for much discussion and networking opportunities during breaks in the program.

Displays were provided by the City of Darebin, Red Cross, Salvation Army, VICSES, the Department of Human Services and the Australian Emergency Management Institute.

Of particular interest to many participants was the Emergency Recovery Management Information System, recently developed by the Department of Human Services. The system provides a capacity to monitor and record details of individuals affected by disasters and financial assistance and other recovery services provided to them. Use of the system at a regional level will ensure people affected by disasters are provided with the most effective range of services possible to meet their particular needs.

The future

Given the success of the Forum organisers propose that a similar activity be held on an annual basis. The 1998 event will be held in September-October, again as a lead up to Victoria's bushfire season. A shorter one-day program is likely, to enable participation by a greater number of people. Details will be advertised in this journal and distributed to a wide range of agencies later in the year.

Managing emergency call-taking in Australia

By Michael Whelan, Deputy Chief Executive Officer, Bureau of Emergency Services Telecommunications, Victoria

Developing a new framework for call taking in the deregulated telecommunications environment:

Where have we come from?

Until early 1996, Emergency Service Organisations (ESOs) had been largely content to leave the '000' emergency call handling, associated policy and direction to Telstra, who had developed the network and operator arrangements to be able to effectively place emergency calls with ESOs. Broadly ESOs were happy with the Telstra service.

At this time however, Telstra was considering its future. Legislation was emerging that would, among other things, lead to greater competition in the Australian telecommunications market.

Telstra made it clear that it was only required to provide access to the 000 service under its licence as a telecommunications carrier, and that it was actually going beyond this requirement by providing operators to answer all 000 calls, ask the caller which ESO they require and then switch the call to the requested ESO. Telstra's (and the wider industry's) preferred position was to have ESOs take on sole responsibility for this aspect of emergency call handling¹.

So there were a number of threats to ESOs emerging with the plans for the new telecommunications environment:

- the familiar relationship with Telstra could become fragmented, particularly if each carrier had to make their own 000 arrangements
- the legislation and licence requirements were not generally understood
- the telecommunications industry was taking the view that the ESOs should pick up full responsibility for the 000 service, adding substantial costs to ESO budgets.
- the Bill was being drafted in isolation from ESOs, who could have no certainty about the 000 arrangements continuing in an acceptable way or having the capacity to develop.

In March 1996 a national meeting of emergency service organisations (ESOs)

Paper presented to the 2nd Annual Emergency Services Forum, 30 September 1997, Sydney.

Disclaimer: The views expressed in this paper are those of the author only and do not represent the views of the Department of Justice, Victoria or the national Emergency Calltaking Working Group

was convened in Melbourne, at the direction of the Ministers with fire and emergency services responsibilities, to consider emergency call handling matters. Participants were briefed on the preparations of the Commonwealth Government for a new Telecommunications Bill. The briefings, from Austel and Department of Communications and the Arts representatives, led the participants from all over Australia to the view that emergency services were not ready for the impending substantial change in the telecommunications industry and its consequent impact on emergency services.

The workshop determined that an ongoing working group was required to gather information and represent ESOs in discussions on the new legislation. This was convened and has become known as the National Emergency Call Taking Working Group (NECWG). NECWG has participated in telecommunications forums to promote the emergency service perspective.

One of NECWG's first tasks was to develop a set of *Emergency Call Taking Principles*, setting out the basic requirements of the emergency services. The principles, agreed nationally, guided NECWG's negotiations on the content of the Act with various bodies.

Of particular importance in the debate, from the ESO perspective, was the funding of the 000 service. The industry argued that ESOs receive the service and therefore should pay the cost of its provision. Clearly the community, specifically the 000 caller, receive the service. The 000 service together with the call processing by the ESOs and the response to calls by the police fire and ambulance are all part of the service to the community.

Whether ESOs should pay for the 000 service became an important aspect of the debate on the Telecommunications Bill, and resulted in a Section of the Act providing that 'the objective that emergency service organisations should not be charged for services provided by a recognised person who operates an emergency call service'. While ESOs were pleased with this outcome, it has still not resolved the fundamental problem of ensuring a revenue base for the 000 service. This must be resolved and will be dealt with later in this article.

The Telecommunications Act

The new Act makes a number of provisions by way of *Objectives*, that are to be implemented through a determination made by the Australian Communications Authority (ACA). The issues addressed *inter alia* in the Act are:

- as far as practicable there should be no more than one emergency service number for use throughout Australia
- this number is set within the Numbering Plan rather than the Act
- that reasonable community expectations for the handling of calls to emergency service numbers are met
- access free of charge to an emergency call service for users of a standard telephone service
- the recognised person should receive and handle calls made by the end users, if appropriate transfer to an ESO and if appropriate give information in relation to such calls to an appropriate ESO
- ESOs should not be charged for services or carriage services provided by a recognised person
- a common system is used to transfer calls to an ESO and give information
- the requirement to transfer calls to an ESO with a minimum of delay and provide automatic information about

Notes

¹ Paper prepared by Telstra and BEST (Bureau of Emergency Services Telecommunications, Victoria).

the location and identity of the customer.

Single national emergency number

The Act requires that, as far as practicable, there should be only one emergency service number for use throughout Australia. While there are practical difficulties to be resolved with special services, there should be no reason why this cannot be achieved in the medium term. The Minister, Senator Alston, acknowledged the importance of a single national emergency number in the parliamentary debate on the Bill and undertook to have the ACA report regularly on progress toward achieving it.

At present, while 000 is well recognised in Australia as the emergency number, there are still a range of numbers in use.

- Emergency Service Access Numbers (ESANs) are still used in Victoria, South Australia and the ACT. These numbers, the 1144x range, are not listed in the Numbering Plan as emergency numbers and are paid for by ESOs. Calls to them do not receive the caller and customer information.
- There are special numbers in place for disabled callers.
- '112' was introduced with GSM digital phones. It is recognised in the Numbering Plan and is trunked into 000 centres. We are advised that the GSM protocol is a European standard and that special programming for small markets like Australia is not practical. By implication we are stuck with 112. It is of concern that this was done without consultation with the emergency services and procedures should be put in place to ensure that other emergency numbers are not inadvertently introduced into Australia with decisions to introduce another communication protocol.

Problems with 000

The intuitive solution is to stay with the 000 number and work to remove the others. But 000 does not necessarily offer the solution. There are concerns about the health of 000 as an emergency number. For example, 2,523,025 calls were made to 000 in Victoria in 1996, 25 per cent of these calls were abandoned before they could be answered by an operator, while another 41 per cent were less than 10 seconds in duration. These statistics (see *Figure 1*) suggest we have a problem with 000.

There is a view that many calls to 000 are made as a result of misdials. The

Calls presented	2,523,025
Calls answered	1,873,652
Calls abandoned	641,371
Calls of <10 seconds	1,044,808
% abandoned	25.4%
% <10 seconds duration	41.4%
Average call value	12.66 sec

Figure 1: Calls made to '000' in Victoria, 1996

position of 000 in the same number range as international numbers commencing with '00' is believed to have contributed to these unwanted calls. The usual dial-out number on PABXs is also a '0', contributing to the number of misdials. In addition faxes and inventory machines are also believed to default to a string of zeros and ring 000!

Recently the issue of calls with no voice being transferred to the Public Safety Answer Point (PSAP) has been raised. Telstra has made it clear that it is standard policy to put calls with no voice through to the police answer point. In the US the practice is to ring back callers who hang up on 911, at or before answer. There are cases documented where the ring-back has led to police patrols being sent to places where people were discovered to be subject to duress.

The practical difficulty of ringing back callers who hang up on ringing 000 are clear with the volume of unwanted calls occurring in Australia. This problem with the emergency call number limits the effectiveness of the service in Australia. We need to establish urgently whether the 000 problem can be fixed.

The ACA and Telstra have agreed to conduct a survey to assess the cause of the unwanted calls to 000. This research is intended to clarify the situation and assist to determine whether they can be eradicated to make 000 a viable emergency number. In the event that 000 can be rehabilitated, then the ACA must confront what to do with the 112 number. Ignoring it will not be an acceptable option, as it would be contrary to the objective of the Act and clearly contrary to the Minister's commitment in the Senate. In the meantime 112 provides a handy alternative option to 000 if the problems with 000 cannot be adequately addressed.

Given the experience with the 000 number, NECWG has argued for the protection of the national emergency number in the number range. 000 has suffered the proximity of a range of numbers commencing with 00. Fortun-

ately these numbers have reduced but the key ones for international dialing and fax remain. Anecdotal evidence suggest that fax machines are a significant problem.

So what of the alternative '112'? We have urged the ACA to protect this number in the Numbering Plan for the time being to preserve it as an option. Recently however, Telstra elected to use the number 1223 as the Shared Directory Assistance number, a number that is expected to receive many millions of calls annually. While one cannot be sure that there will be an impact on the emergency number, it presents an alarming similarity to 112. The remainder of the 122x range is also allocated. Any immediate impact however would be expected to be slight given that 112 is not advertised at this stage.

My concern is the loss of the opportunity to protect 112 as a viable alternative national emergency number. Remember 112 is already trunked into 000 so any overlap will impact 000 now. To his credit the Minister recently wrote to the Queensland Minister stating categorically that Telstra would not be guaranteed the use of this number. It is also intended that the research undertaken by ACA and Telstra would seek to assess the impact of 1223.

Telecommunications (emergency call service) determination

The determination was made on 26 June 1997 as an interim measure to ensure the ongoing provision of emergency call services at the previous standard or better. The background statement to the Determination indicated that it is likely that a further determination will be made reflecting new arrangements for emergency call services in Australia.

I believe that it will be necessary to address the requirements for a dynamic and effective emergency call service. The requirements must include the arrangements for the ongoing provision and funding of 000, the full specification of the service outputs, inclusion of new requirements that constitute enhancements to the service provided and accountability provisions.

The ongoing arrangements for the Emergency Call Person must be resolved for the future. Telstra have developed the role over the years and as a monopoly service provider could recover the costs of the 000 service in its normal charging regime. It is assumed they did. With competition, this ability will be impacted.

In 1996 Telstra argued that 'under an environment of full competition, it is questionable whether the carriers, or as presently is the case, one carrier Telstra, should conduct emergency services call taking, a function which is not the core business function of a telecommunications carrier' (Dougall, 1996²). It proposed the formation of a National Emergency Services Agency (NESA) that would be dedicated to the provision of Enhanced 000 through the answering of emergency calls and transferring them to the appropriate ESOs.

Sensibly, in the interim, the ACA nominated Telstra as the Emergency Call Person in the Determination. It is now incumbent on the rest of the telecommunications industry to work with Telstra and the emergency services to plan the strategy for the long-term arrangements.

Why not Telstra for the long term? While Telstra have generally done an excellent job in this area and can be expected to continue to do so for the time being, they have indicated that they plan to exit the 000 product. They have stated that it is not their core business. Therefore forcing the responsibility on to them in what will be a turbulent environment (both within the industry as post-July 1997 competition warms up and internally with the partial float) would not be the best for the emergency call arrangements.

It is in the community's interest to have stability in this service and therefore a smooth transition to a long-term service provider and a strategic approach to service enhancements is required.

To this end the NESA approach has merit. It would also provide a body with emergency call service as its core business. The opportunity to bring the management of emergency call service into the open with industry, ESO and community representation on its board is worthy of further consideration.

It is also vital to sort out secure funding arrangements to ensure an ongoing dynamic service and to allow the service to expand to take advantage of technology that emerges. The Act ensures that calls to 000 are free of charge to the caller. This provision is founded more in sentiment than practicality. NECWG argued that there should be no barrier to calls being made to 000. For example, calls must be able to be made from any phone or call box without the need for coins or cards.

Nuisance calls to 000 should attract a charge and it should be at a penalty

level. The owner of a fax machine that calls 000 many times on redial should be made aware of the impact their action is having on the emergency call service.

In the US calls are levied on individual subscribers. I believe that the 000 service should have its own publicly disclosed budget. The source of the funds should be the community that enjoys the benefit of the availability of the emergency service. The most appropriate way of collecting the funds is through the carriers and service providers who can identify it on the bill as is done with fire service funding collected through the insurance companies. It is important that the public can identify the cost of the service. With this will come greater accountability, which is to be welcomed.

000 enhancement

The emergency call service is a basic service to the community. It is a life saving service that must be as efficient and effective as possible. It will therefore need to adopt enhancements in technology as they become available.

Calls to emergency services from mobile phones are growing. Anecdotal estimates put the volume at about 15 per cent of all calls. Calls from mobiles are not handled in the same way as calls from landlines. The operator is required to ask the caller where they are ringing from and then select the appropriate PSAP manually. This is time consuming and open to greater error.

BEST³ has been notifying Telstra of misdirected calls for some months now and while the number is small (less than one per cent) some of the cases have been significant.

ESOs require location information on calls from mobile phones. This is already becoming a reality in the US where the Federal Communications Commission (FCC) recently made a ruling requiring the staged implementation of locational information with mobile calls. By October 1998 the cell location is required and by 2001 a location to 125 metres is required 67 per cent of the time. This has caused a lot of interest in the US and trials have been underway. I have received advice that the trials are very encouraging and that better performance than that required by the FCC may be achievable. We will watch with interest and if possible improve on the 2001 timeframe.

The accuracy of the database information that provides the CLI and customer information is also important.

The Determination requires carriers and carriage service providers to provide customer information within 24 hours of a new service being supplied. This is excellent, however there is a need to ensure the accuracy of the data and that common data standards are used. The States and the Commonwealth are involved in determining data standards for geographical data bases and these standards will be required in the Determination. I would like to see the carriers and carriage service providers use the same mapping and address information as is used by the ESOs.

The manner of presentation of calls and customer information is also an issue and the most effective approach will be sought. Of course there is a point at which the ESOs PSAPs technology becomes a limiting factor. There is a need to take account of the different levels of the technology adopted across the country. A lowest common denominator approach is not necessarily the best one.

In this regard the ACA's inclusion in the Determination of the provision to charge ESOs for higher levels of service is flawed. There will be technology differences from place to place depending on a range of matters, among these being population and acceptance of change. The ACA's position in the Determination may stifle innovation and development of the emergency call service. I can see many discussions on the meaning of the words 'significantly higher than the service provided to most emergency service organisations'. I suspect this approach is a consequence of not conclusively handling the issue of funding of the service in the Act and the Determination.

Measurement and accountability are also important issues to be dealt with in the Determination. Basic statistical reporting is currently required. The Determination (Section 5.4) requires the emergency call person to keep records:

- about the number of emergency calls received
- about the percentage of calls that were answered in 5 seconds or less and 10 seconds or less
- the number of emergency calls

Notes:

² Charles Dougall, December 1996, IIR Conference

³ Bureau of Emergency Services Telecommunications, part of the Victorian Department of Justice.

transferred to an ESO and the number made but not transferred to an ESO

- the number of calls abandoned in less than 5 seconds.

These are basic reports that will assist in the overview of the emergency call service. This should also include the time taken to transfer calls to ESOs. Access to detailed information about particular calls is also required to help ESOs investigate particular events. This would cover specific information on the operation of ECLIPS, abandoned call reports, overflow and call waiting reports.

Emergency response system

It is important to see the components of the emergency response system in an overall context. The BEST project in Victoria, which involves the private sector delivery of emergency call taking and dispatch of emergency vehicles, has led to an unprecedented level of scrutiny of emergency call taking, which is only a small component of the emergency response cycle. While this scrutiny will not go away, it would be more productive if it focused on the whole of the emergency response process. To this end it is likely to extend to the performance of the 000 system and the response of the ESO resources themselves.

In the context of seeking performance standards on the 000 system, as part of the Determination, industry representatives have asked why the emergency call service should be subjected to tight performance measurement, if the ESOs components of the process are not also measured and the entire process assessed. Having said this however there is a need to develop benchmarks for the individual components to be able to arrive at an overall meaningful benchmark for the cycle.

The BEST project has developed performance measurements, which have focused on call answer speed and total time to dispatch. These measures known, as the Customer Specified Service Standards (CSSS), have caused a lot of pain in getting to where we are now. It is acknowledged that there is still a long way to go.

What has been found by BEST is that police and ambulance have more exhaustive information requirements than fire and prefer to take more time to dispatch. Victoria Police have commenced a project to refine their requirements and determine performance measures that ensure they receive the optimum service

delivered to support the field and management requirements. It is expected that this will contribute significantly to the development of benchmarks for emergency call taking.

For ambulance, call answer speed and total time to dispatch continue to be the basic measures. The recent introduction to the BEST CAD of the Medical Priority Consultants call taking product *Advanced Medical Priority Dispatch System* (AMPDS), provides an internationally-recognised measure of call-taking performance. AMPDS is a strict protocol that provides a method for the assessment of compliance with the protocol. Compliance may also be a ready comparison with other ambulance communication centre's performance.

With the exception of fire, time based performance applied to call taking can be contrary to the information gathering needs of ESOs. While speed is a consideration there is a requirement to collect more extensive information and at times to stay on the line and continue to collect information or provide advice ahead of the arrival of the ESO resource. Call control, therefore, is often a more important aspect of the call taking process.

The CSSS specified in the contract with Intergraph were theoretically determined because we were unable to get benchmarking material from other places in Australia or overseas. This dearth of performance material was still the case earlier this year, although I have now become aware of work that is being done in 911 Centres in the US, which may complement our own work.

The work being undertaken by Real Decisions appears to have some promising aspects, although with a different focus to BEST's work to date. Real Decisions are taking a 'cost per unit of work approach' to arrive at an efficiency measure.

Metrics being considered include:

- total cost per citizen served
- cost allocation by agency and or city
- total time to dispatch
- training time per agent
- agent time accounting
- transaction complexity
- citizen and agency satisfaction
- cost distribution: equipment, network, personnel and facilities

BEST will consider joining or at least collaborating with the project. This would provide an international comparison for benchmark purposes.

Benchmarking is an issue for us all, if we are to deliver the best possible

service to the community and be able to prove it. There are a range of forums for sharing information on respective jurisdictions but, to compare performance, measures will have to be agreed on that are meaningful and universal. I would like to hear from interested ESO personnel who would like to participate in an exercise to identify and define appropriate measures and set up a benchmarking group.

The future

NECWG now exists and is working to define ESO requirements for the emergency call service Determination and is now being consulted by industry groups on emergency call service issues. This is a satisfactory situation but we also need to consider how to broaden the input to emergency call service matters.

I have been approached by ESO and industry personnel seeking membership of NECWG. While this is not appropriate, given NECWG's specific role in providing advice to State Governments, there is a need for a body that can bring together ESO, emergency call person and industry points of view, and use the combined expertise to develop the emergency call service in Australia.

In the US the Association of Public Safety Communication Officials (APCO) and the National Emergency Number Association (NENA) provide this focus. There is the facility of local chapters but to date this does not appear to have developed sufficiently to provide the policy and direction that is required. Something along the lines of NENA with a national focus, would be worth considering.

Until NECWG there was little attention given to emergency call service. There is a lot of work required. I recently sought information from each State on the extent of training and whether the training packages for each ESO were accredited. There was a wide range of responses but again there is a need for a standard, which might also save ESOs development dollars if a combined approach can be agreed.

I have not given any attention to call takers themselves in this paper. They are a crucial part of any call taking service. In other places call takers are celebrated for their work. Awards are given for commendable efforts by call takers and dispatchers. Call takers and dispatchers are a vital resource and more attention to their training and development and the development of their profession will bear fruit in the future.

Persuasive communication issues in disaster management

A review of the hazards mitigation and preparedness literature and a look towards the future

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Natural and man-made hazards and disasters not only lead to physical destruction of property, injuries and deaths, but also to a variety of psychological disorders (e.g. anxiety, post-traumatic stress disorder, depression, etc.). These psychological reactive impacts have been documented for a variety of hazards and disasters such as floods (e.g. Hansson, Noulles, & Bellovich, 1982a, 1982b; Phifer, Kaniasty & Norris, 1988), earthquakes and volcanoes (e.g. Aptekar, 1991; Larrain & Simpson-Housley, 1990), hurricanes (e.g. Aptekar, 1991; Saylor, Swenson, & Powell, 1992), toxic waste (e.g. Baum & Fleming, 1993; Baum, Fleming, Israel & O'Keefe, 1992), and nuclear war (e.g. Fiske, 1987).

In fact, a recent review of 52 studies of these and other hazards such as fires, explosions, nuclear accidents, tornados, blizzards, and ship wrecks, found a consistent, positive relationship between disasters and psychopathology (Rubonis & Bickman, 1991a). It seems to be the case that negative events such as hazards and disasters tend to elicit more physiological, affective, cognitive, and behavioural activity, in general, than neutral or positive events (e.g. Taylor, 1991).

In spite of all the above hazard-related effects, however, it appears that persons living in disaster-prone areas are not generally prepared for such events, although there appears to be some confusion in the literature over this issue (e.g. Bourque, Shoaf, & Russell, 1995; Duval, Mulilis & Lalwani, 1995; Mulilis & Duval, 1990a, 1990b, 1991a, 1991b, 1993; Mulilis, Duval, & Lippa, 1990; Russell, Goltz & Bourque, 1995; Turner, Nigg & Paz, 1986). It may well be that, in many cases, attempting to manage disasters via adoption of hazard or disaster mitigation and preparedness activities requires overcoming certain beliefs and attitudes about the behaviours involved in these activities

and the effectiveness of their outcomes. Thus, in such cases, the use of persuasive communication techniques may be a viable option to initiate these activities.

A review of the past

The classical approach to the topic of persuasive communications is to view it in terms of a series of inputs and outputs, where the input or independent variable is the persuasive communication, and the output or dependent variable is attitude or behaviour change (McGuire, 1969, 1985). The communication is then analyzed in terms of who says what, via what medium, to whom, and directed at what kind of behaviour (Lasswell, 1948).

Using this approach, the input communication variables can be divided into five broad classes (Lasswell, 1948; McGuire, 1969, 1985):

- *source of the communication* — credibility, trustworthiness, attractiveness, liking, similarity, power
- *message characteristics* — style, clarity, forcefulness, speed, ordering, amount of material, repetition, number of arguments, extremity of position
- *channel variables* — media type (such as television, radio, newspapers, face-to-face communication) verbal versus non-verbal communication, context of the channel
- *receiver variables* — age, intelligence, gender, self-esteem, level of active participation, incentives for participation
- *target or destination variables* — attitudes versus behaviour, decay of induced change, delayed-action effects, resistance to persuasion.

Early research in this area focused on this input-output approach, and in fact, was the basis of the classic 'Yale Model' developed by Carl Hovland and his colleagues (Hovland, 1954, 1957; Hovland, Janis & Kelley, 1953; Hovland & Rosenberg, 1960; Sherif & Hovland,

1961). While different approaches to using persuasive communication in the hazards field have been suggested (e.g. cause and effect of public response — Mileti & Sorensen, 1988; Sorensen & Mileti, 1987; and systems approaches focusing on the interaction of hazard type, situational forces, and management strategies — Lindell & Perry, 1992; belief system theory and value self-confrontation — Grube, Mayton & Ball-Rokeach, 1994), nevertheless, much of the research typically conducted in this area has been based on this 'Yale Model' (e.g. Kasperson & Stallen, 1991; Mileti, Farhar, & Fitzpatrick, 1990).

This approach has, in fact, been quite popular in directing efforts at preparation and mitigation, and includes investigations of the

- *source* (e.g. Danzig, Thayer & Glanter, 1958; Nigg, 1982; Palm, 1981; Perry & Greene, 1983; Perry & Nigg, 1985; Sorensen & Mileti, 1987)
- *message* (e.g. Bolduc, 1987; Browsers, 1980; McKay, 1984; Nigg, 1982; Perry & Mushcatel, 1984; Perry & Nigg, 1985; Regulaska, 1982; Ressler, 1979; Wilkins, 1985)
- *channel* (e.g. Carter, 1980; Dutton, Rogers & Jun, 1987; Grant, Guthrie & Ball-Rokeach, 1991; Morentz, 1980; Needham, 1986; Needham & Nelson, 1977; Perry & Nigg, 1985; Rogers, 1987, 1992; Wenger, James & Faupel, 1980; Wilkins, 1985)
- *receiver* (e.g., Cullen, 1980; Holt, 1980; Perry, Green, & Mushcatel, 1983; Nigg, 1987; Regulaska, 1982; Sorensen & Mileti, 1987; Turner, 1983)
- *target* (e.g. Covello, von Winterfeldt & Slovic, 1986; Danzig, Thayer & Glanter, 1958; Mileti & O'Brien, 1992; Nigg, 1987; Perry, Green & Mushcatel, 1983).

Despite its popularity, the 'input-output' approach to persuasive communication is not the only theoretical formulation that has been used in this

area of hazards research. Other researchers, for example, have focused on exactly how the processing of persuasive information affects attitude change.

In their elaboration likelihood model, for example, Petty and Cacioppo (1981, 1986a, 1986b) have postulated that persons subjected to persuasive messages process information, and thus change attitudes, using two routes: a *central route*, in which the person attends to, and is influenced more by, the cognitive information in the message, and a *peripheral route*, in which a person attends to, and is influenced more by, cues available in the persuasive context (e.g. attractiveness of the source). Chaiken and her colleagues (Chaiken, 1980, 1987; Chaiken, Liberman & Eagly, 1989) have used a similar approach in their heuristic-systematic model, distinguishing between systematic processing (i.e. influence due to cognitive elaboration of the persuasive augmentation) and heuristic processing (i.e. attitude change due invoking heuristics such as 'experts can be trusted').

More recently, these researchers have investigated interaction effects of information processing channels with various 'Yale model' communication variables such as need for *cognition of the receiver* (e.g. Cacioppo & Petty, 1982; Cacioppo, Petty & Kao, 1984; Cacioppo, Petty, Kao & Rodriguez, 1986; Haugtvedt & Petty, 1992), *involvement of the receiver in the message* (e.g. Johnson & Eagly, 1989, 1990; Petty & Cacioppo, 1990), *message repetition effects* (e.g. Cacioppo & Petty, 1989), *affect or mood of the receiver* (e.g. Petty, Schumann, Richman & Strathman, 1993), *source credibility, argument ambiguity of the message, and task importance of the message* (e.g. Chaiken & Maheswaran, 1994), *attitude strength and resistance of the receiver* (e.g., Pomerantz, Chaiken, & Tordesillas, 1995), *motivation and priming of the receiver* (e.g. Thompson, Roman, Moskowitz, Chaiken & Bargh, 1994), and *the effects of the values of the receiver on their beliefs, attitudes, and behaviours* (e.g. belief system theory and value self-confrontation — Ball-Rokeach & Loges, 1994; Grube, Mayton & Ball-Rokeach, 1994). This latter approach may be particularly important in view of the changing values that occur within populations and their subsequent effect on attitudes (e.g. Rokeach & Ball-Rokeach, 1989).

While this information processing approach to persuasive communications

has been used quite extensively, other researchers have focused more on the emotion or affect associated with the communication. A popular version of this type of approach is the use of *fear-arousing* or *negative threat appeals* (see McGuire, 1985, for usage of this term). Research efforts in this area originated with Janis and his colleagues (Janis & Feshbach, 1953; Janis & Terwillinger, 1962), and took an 'events' approach to attitude change in which the persuasive communication was directed at the fear associated with the event (i.e. the particular hazard or disaster).

While results of early research directed at the negative threat appeals approach indicated that increasing the level of fear could result in either increased, decreased, or no change in attitudes (e.g. Berkowitz & Cottingham, 1960; Chu, 1966; Janis & Feshbach, 1953; Janis & Terwillinger, 1962), nevertheless, this approach has continued to be used quite extensively in hazards research on preparedness and mitigation issues (e.g. Cullen, 1980; Hansson, Noulles & Bellovich, 1982b; Perry, Lindell & Greene, 1982; Sanders, 1985; Turner, 1983; Weinstein, 1989).

Perhaps due to inconsistencies in the results of earlier efforts, later research in negative threat appeals shifted focus away from the 'events' approach, and assumed that variables associated with the 'person' (e.g. information or knowledge given to or associated with the person, or attributions that the person makes) dictated attitude change (e.g. Leventhal, 1970; Leventhal, Singer & Jones, 1965). This type of an approach has also been used quite extensively in hazards research on preparedness and mitigation issues (e.g. Carter, 1980; Danzig, Thayer & Glanter, 1958; Needham & Nelson, 1977; Perry, Lindell & Greene, 1982; Regulska, 1982; Ressler, 1979; Rubonis & Bickman, 1991b; Saarinen, 1982; Saarinen & Sell, 1985; Scanlon, 1980; Vitek & Berta, 1982; Wenger, James & Faupel, 1980; Yates, 1992).

Despite this shift in focus of negative threat appeals research (i.e. from an 'events' to a 'person' approach), inconsistencies in resulting attitude change still persisted (e.g. Leventhal, 1970; Leventhal, Singer & Jones, 1965). Perhaps in an effort to clarify these inconsistencies, more recent approaches in this area have focused on the simultaneous effects of both these 'person' and 'event' variables.

This 'person-environment' interaction approach to studying social

behaviour is not a new one, and in fact, dates back to 1935 and the classic work of Kurt Lewin's field theory, or what is more currently referred to as an interactionist perspective (e.g. Blass, 1984). Somewhat similar approaches have been suggested with respect to studying hazards and disasters. For example, Quarantelli (1984) notes that it is the combined variables involved in the community context together with threat conditions in a disaster that determine certain social processes involved in evacuation behaviour. Similarly, Lehman and Taylor (1987) note that it is the combined effect of earthquake generated fear and structural integrity of one's dwelling that determine disaster-related perceptions and coping strategies, perhaps due to a 'mobilisation-minimisation' effect (Taylor, 1991). Likewise, Lopes (1992) indicates that it is the combined effect of fear from disaster damage and person resources about what to do in a disaster that determines preparedness levels.

Perhaps the first theoretical formulation of this person-event approach to persuasive communications was suggested by Rogers and his colleagues in what they called protection motivation theory (Maddux and Rogers, 1983; Maddux, Norton & Stoltenberg, 1986; Rogers, 1975, 1983; Rogers and Mewborn, 1976; Rippetoe & Rogers, 1987). Protection motivation theory proposed that variables associated with both the person (e.g. self-efficacy, outcome efficacy) and the event (e.g. probability of occurrence, severity of damage) imitated attitude change due to persuasive communications.

This approach has had some application in hazard mitigation and preparedness research both with attitudes and beliefs about nuclear war (e.g. Axelrod & Newton, 1991) and earthquake preparedness behaviour (e.g. Mulilis & Lippa, 1985, 1990). While research efforts using this approach have been somewhat successful, nevertheless, efforts to determine exactly how levels and mixes of levels of person and event variables combined in their influence on attitude change have been more problematical (e.g. Maddux & Rogers, 1983; Mulilis & Lippa, 1985, 1990).

In perhaps the most recent approach to persuasive communications, the *person-relative-to-event* (PrE) model of coping with threat (Duval & Duval, 1985; Duval & Mulilis, 1989, 1991; Mulilis, 1991; Mulilis and Duval, 1995, 1996a, 1996b) has been proposed as a

comprehensive instigating mechanism underlying attitude and behaviour change due to fear-arousing communications. This model is based in a theoretical formulation of coping developed by Lazarus and his colleagues (Lazarus, 1966; Lazarus & Folkman, 1984), in which it is proposed that, when faced with a threat, a person will engage in activities that take the form of attempts to manage the threatening situation (i.e., problem-focused coping) and efforts directed toward regulating emotional reactions to the threatening situation (i.e., emotion-focused coping).

In applying this approach to negative threat appeals, the PrE model not only incorporates both person and event variables, but also specifies a combinatorial rule with regard to how levels and mixes of levels of person and event variables combine in determining the persuasiveness of negative threat appeals. Furthermore, recent research applying this model to earthquake (Mulilis & Duval, 1995) and tornado (Mulilis & Duval, 1996a) preparedness behaviour indicated that outcome measures fit predictions generated by the model to a much greater extent when the moderating effects of felt responsibility for preparing for the threatening event were accounted for.

Inter- and intra-disciplinary issues

It is obvious from the above review that the use of persuasive communications as a technique for changing beliefs, attitudes, and behaviours has a relatively long and varied history. Furthermore, these efforts have cut across a variety of different disciplines. Thus, persuasive communications have been used extensively in the fields of psychology (see above), sociology and hazards research (see above, as well as Drabek, 1986 for an extensive review of the earlier literature), risk communication (see above, as well as Covello, von Winterfeldt & Slovic, 1986 for an extensive review of the earlier literature), health (e.g. Rogers, 1991) and mass communication media (e.g. Dutton, Rogers & Jun, 1987; Grant, Kendall & Ball-Rokeach, 1991; Rogers, 1987, 1992).

While the multi-disciplinary nature of persuasive communications has generated a wealth of information, nevertheless there are drawbacks to such interdisciplinary approaches. Reardon and Rogers (1988), for example, note that 'intellectual separation' may exist across disciplinary divisions resulting in lack of communication of research

findings across divisions. They further note that many times these separations exist because of historical convenience and university politics rather than due to real ideological differences.

Of course at other times, real distinctions do exist across disciplines. For example, while some disciplines (e.g. psychology) have demonstrated renewed interest in fear-arousing communications, other fields (e.g. communications) have questioned the adequacy of such an approach and, to some extent, have abandoned efforts in this direction.

Still other issues exist at the intra-disciplinary level. In the hazards field, for example, research efforts historically seem to have been at least partially dictated by the 'popularity' of particular disasters and hazards. Early research in this area, for example, focused almost exclusively on communication issues in the context of hurricanes and tornados (e.g. Drabek, 1986), with particular interest in how communication of warnings affected hazard preparation and evacuation behaviours. While the issue of warnings has still remained a topic of concern (e.g. Mileti & O'Brien, 1992; Mileti & Sorensen, 1987, 1988), the focus of this concern seems to have shifted to more topical issues such as earthquakes (e.g., Mileti & O'Brien, 1992; Mulilis & Duval, 1995; Mulilis & Lippa, 1990). Interestingly enough, the use of a more comprehensive theoretical approach could incorporate such issues irrespective of the popularity of focus. The PrE model (Mulilis & Duval, 1995, 1996a, 1996b), for example, could incorporate the concept of warning (either pre-event or post-event) as a threat variable regardless of the source of the threat (e.g. hurricane, tornado, earthquake, nuclear catastrophe).

Finally, it is interesting to note that many of the investigations cited herein focused on changing attitudes and beliefs about various aspects of hazards. In regard to mitigation and preparedness activities, however, it maybe that behaviour is a more important determining factor of successful protection against hazards. Furthermore, as Fishbein and Ajzen have noted (Ajzen, 1987, 1991; Ajzen & Fishbein, 1977, 1980; Ajzen & Madden, 1986; Fishbein, 1980; Fishbein & Ajzen, 1972; Fishbein & Stasson, 1990), in general, attitudes do not predict behaviours very effectively. Nevertheless, despite the fact that research in the hazards field continues to support the weak attitude-behaviour link (e.g. Gori & Hays, 1987; Nigg,

1982; Saarinen, 1982), with few exceptions (e.g. Duval, Mulilis, & Lalwani, 1995; Mulilis, 1985, 1991; Mulilis & Duval, 1995, 1996a; Mulilis & Lippa, 1985, 1990; Russell, Goltz & Bourque, 1995; Sorensen & Mileti, 1987; Turner, Nigg, & Paz, 1986), the majority of persuasive communications research on mitigation and preparedness issues continues to focus on attitudes or beliefs.

Where we stand

Due to the long, varied, and multi-disciplinary focus of persuasive communications, assessing what the literature tells us is no easy task. Nevertheless, it is clear that many variables affect the effectiveness of such communications (e.g. attributes of the source, message, channel, receiver, and target). It is also clear that the literature reveals many contradictory and incomplete findings.

Some of these 'gaps' can be explained in terms of non-comparability. For example, Mileti and O'Brien (1992) indicate that research findings on warnings issued before a disastrous event are incomparable with those issued after such an event because the perceptual processes underlying the two types of warnings are not identical.

Other contradictory findings (e.g. early research on fear-arousing appeals) however may be due to more complex issues such as inappropriate mixes of variables and levels of mixes of variables. Solutions to these issues may require a more fundamental and encompassing theoretical approach as discussed below.

Recommendations for future research

As Indicated from the above review, many aspects of persuasive communications designed to address mitigation and preparedness issues have been extensively investigated both within and outside of the realm of hazard research. Yet other issues remain in which the research in this area has not been quite so extensive, or has led to contradictory or incomplete findings. Some of these issues, discussed below, are intended as suggestions for future research.

Assessing mitigation and preparedness activities

a. Standardisation of measurement

While various tools have been proposed to assess mitigation and preparedness activities (e.g. Bourque, Shoaf & Russell, 1995; Mulilis, 1985; Mulilis, Duval & Lippa, 1990; Mulilis & Lippa, 1985, 1990; Russell, Goltz & Bourque, 1995; Schmidt & Gifford, 1989; Turner, Nigg, & Paz 1986), none of these appear to be

sufficiently complete nor comprehensive. Thus, a need exists for a standardised scale to measure mitigation and preparedness activities in order for different assessment studies to be comparable.

b. Recall bias in measurements

Attempts to recall previous information may be biased due to recall errors (e.g. Brehm & Kassin 1996). Thus, assessment of mitigation and preparedness should be limited to estimates of current levels of activities (e.g. Mulilis, 1985, 1991; Mulilis & Duval, 1990a, 1990b, 1991a, 1991b, 1993; Mulilis, Duval & Lippa, 1990; Mulilis & Lippa, 1985, 1990; Turner, Nigg & Paz 1986) as opposed to having respondents attempt to recall previous levels of activities.

Type of event

a. Risk characteristics

There is some evidence to indicate that different types of hazards contain different risk characteristics that may moderate mitigation and preparedness activities. For example, Brun (1992) noted that natural and man-made hazards contain different risk characteristics, and that perceptions of responsibility for managing these two types of hazards were different. Future research is needed to substantiate these findings.

b. Stress response

A few investigations have indicated that receiver responses to hazards are also dependent on the type of hazard involved. For example, Baum and Fleming (Baum & Fleming, 1993; Baum, Fleming, Israel & O'Keefe, 1992) have noted that stress reactions of victims of a leaking hazardous toxic waste dump were different than those of victims of floods. Similarly, Larrain and Simpson-Housley (1990) have noted differences in anxiety reactions due to volcanic eruptions versus the occurrence of earthquakes. In view of these results, it appears that additional research also needs to be conducted in this area as well.

Effect of channel or media variables

Several investigations have indicated that the type of media used in a persuasive communication may affect its effectiveness (e.g. radio – Rogers, 1992; television – Grant, Guthrie & Ball-Rokeach, 1991; networking – Rogers, 1987; computers – Dutton, Rogers & Jun, 1987). Such media may impact different receivers differentially resulting in, for example, different degrees of involvement, and consequently, different

attitudinal and behavioural effects (Aronson et al. 1990; Petty & Cacioppo, 1990). In an age of increasing internet dependency, future research on this topic seems imperative.

Receiver characteristics

a. Age

Several studies have indicated that receiver response characteristics to hazard communications may be age dependent (e.g. preschoolers play following hurricane Hugo – Saylor, Swenson & Powell, 1992; elderly reactions to floods – Kaniasty & Norris, 1993; Phifer, Kaniasty & Norris, 1988). Thus, it appears that additional research is needed to clarify these issues.

b. Gender

There is mounting, yet limited evidence to indicate that receiver response characteristics to hazard communications may also be gender dependent (e.g. Enarson & Morrow, 1996; Fordham, 1996; Morrow, 1995, 1996a, 1996b; Mulilis & Dewhirst, 1996; Mulilis, Boyde & Dewhirst, 1996; Zhang, 1994). Since research on gender aspects of hazard research tends to be somewhat limited in general, it appears that additional research is also needed to clarify these and other gender-related hazard issues.

c. Social comparison

Many times reactions to persuasive communications are determined not so much by the communication alone, but rather in relationship to how similar others react to it. This issue of social comparison behaviour has been investigated early on in the literature (Schachter, 1951, 1959, 1964; Schachter & Singer, 1962), and more recently, with respect to fear-generated communications (Hansson, Noulles & Bellovich, 1982a; Taylor, 1983; Taylor, Buunk & Aspinwall, 1990; Taylor & Lobel, 1989). Nevertheless it appears that more research needs to be conducted in this area.

Targets

a. Type of activity

Persuasion communications directed at mitigation may involve a plethora of specific activities. The question then arises as to what specifically is the object of change of the persuasion. While it seems reasonable that the desired effects involve behavioural change, nevertheless as indicated above, the majority of hazard research in this area has been directed at beliefs or attitudes about mitigation or preparedness. In light of the weak link existing between attitudes

and behaviours, it may be beneficial for future research to be more focused in its target selection. Along these lines, questions to be addressed might include:

- what specific target is the persuasive communication directed at
- how effective would a change in that target be in terms of mitigation or preparedness
- are any interaction effects involved in the target activities (e.g. it may be that an increase in structural mitigation activity may lead to a decrease in other activities such as the purchase of hazard insurance).

b. Delayed action effects

The passage of time from the inception of the persuasive communication until the initiation or completion of the target mitigation may be more critical under some situations than others, and may also be dependent on the specific mitigation activity. Little research has been conducted regarding these issues.

c. Decay of induced change

Substantial evidence exists indicating that levels of mitigation and preparedness activities tend to decay with the passage of time (e.g. Mulilis & Duval, 1990a, 1990b, 1991a, 1991b, 1993; Mulilis, Duval & Lippa, 1990). Thus, it seems reasonable that several issues regarding these effects need to be addressed, such as:

- what point in time, relative to the occurrence of a disaster should mitigation activities be measured
- assuming that mitigation and preparedness levels have been raised due to persuasive techniques, what are efficient ways of maintaining these new levels over time.

Comprehensive theoretical formulation

As indicated in the above review, several different theoretical approaches to persuasive communications have been attempted. While most of these approaches have resulted in limited success in some areas, the majority of investigations have also indicated inconsistencies in other areas. Thus, there appears to be a need for a more comprehensive theoretical formulation to be used in the area of persuasive communications in hazards research. One such candidate might be the PrE model, which could incorporate various 'Yale Model' and other previously investigated factors into general categories of 'person' and 'event' variables. Such an approach would be consistent with the

need for a more dynamic, interactive, process approach called for by Van de Ven and Rogers (1988).

Interdisciplinary approach

Irrespective of the particular research direction taken in the future, it is clear that the multi-disciplinary usage of persuasive communication techniques requires a more unified approach among different disciplines. As Reardon and Rogers (1988) indicate, the intellectual costs of such disciplinary competition are prohibitive. Furthermore, in the area of hazards and disaster research, these costs are ultimately paid for with destruction, injury, and death.

Discussion

In an attempt to explain the variation in the application of persuasive communication techniques to management of disasters via hazard mitigation and preparedness research, a comprehensive review of the literature has been presented and specific recommendations to improve the success of the use of these techniques have been suggested. In this respect, a new model of persuasive communication, the PrE model of coping with threat, has been presented and suggested as a basis for a more comprehensive theoretical framework in this area.

This model is based on an application of Lazarus' coping theory (Lazarus, 1966; Lazarus & Folkman, 1984) to negative threat appeals, and has been successfully applied to mitigation and preparedness efforts in the study of earthquakes and tornados.

Nevertheless, if the model is to be used as a basic theoretical foundation to the approach of persuasive communications in the hazards field, additional fundamental research on the model is needed into issues such as the possible moderating effects of the variables mentioned above, as well as on likely effects of more practical and applied issues, such as those discussed in this article. It is suggested that future research be conducted to pursue the feasibility of using such an approach to mitigate and prepare for the disastrous effects of natural and man-made hazards.

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Making mitigation a reality

by Richard W. Krimm, Senior Policy Advisor, Federal Emergency Management Agency

When James Lee Witt became the Director of the Federal Emergency Management Agency (FEMA) in early 1993, he was committed in his belief that the Agency had to play a greater role in reducing the impact of natural disasters on the communities, wallets, and lives of the American people. To live up to his commitment, the Director had dedicated much of his time and energy to promote activities that serve to reduce our nation's vulnerability to disasters. This activity is known as 'hazard mitigation'.

In its simplest sense, *mitigation* is risk management. It is a term that we at FEMA use to describe actions that can be taken at the individual, local, State, and Federal levels to reduce the overall risk from natural disasters. It is getting a handle on the costs of disasters in our society, including not only moneys, but also suffering and economic disruptions. In recognition of these facts, Director Witt has moved aggressively to promote mitigation so that it becomes part of the very fabric of our communities and our lives.

Mitigation is good public policy. It saves lives, saves money and protects our communities from experiencing the hardship that is all too often associated with disasters. Fortunately, over the last few years in the United States, we have witnessed a shift in thinking that is slowly taking hold in our country. As the costs of disaster have been rising from events like the Midwest Floods of 1993, the Northridge Earthquake, and the floods in North Dakota, researchers, public officials, and the general public have been paying more attention to the need to evaluate and reduce the risks faced by our communities, particularly along coastal high-hazard areas and riverine communities. Awareness is arising about the value of cost-effective mitigation activities and sound floodplain management. And the concept of mitigation is resonating in our State houses, our communities, and in the minds of our citizens.

The reason that there is so much attention given to mitigation is the fact that each year natural disasters exact a tremendous toll on the United States. In fact the price tag has become so large that many in Congress, the insurance industry, the business community, and in society at large, are now questioning whether we can truly afford to continue business as usual.

When you look at the facts, this should not be surprising. Literally billions of dollars are lost annually as a result of natural disasters, both in terms of insured and non-insured property in the United States and its territories. From FEMA alone, disasters such as the Northridge Earthquake and the California Floods of 1995 and 1997, have cost the American taxpayer upwards of \$13 billion over the last four year period. And that figure does not include assistance provided by other Federal agencies, the States, local governments, or insurance, and it does not include all the indirect costs of natural disaster events such as economic disruption and business closures, lost worker productivity, instability in insurance markets, and impacts on health care and mental health services. The list goes on and on.

But this isn't even the most tragic part of the story. The human side of disaster losses is equally as staggering. Since 1993, over 1.4 million Americans have been victimised in natural disasters declared by the President. These disaster victims have lost their homes, their personal property, their jobs, and in some cases their lives. And since the President only declares disasters when an event is beyond the combined State and local capability, this figure underestimates the number of people impacted by natural hazard events by a matter of millions.

This does not paint a very pretty picture. But the fact is that the United States experiences more natural disasters than any other country in the world. And the types of disasters we face run the gambit of floods, hurricanes, earthquakes, wildfires, tornadoes, snow

storms, drought, volcanic activity and others.

But we are taking action to alleviate the sufferings from natural disasters.

Over the last four years, the emergency management system in the United States has taken a long, hard look at itself in an effort to redefine how it does business. And the conclusion we have come to is that while we don't know how to keep disasters from happening, we do know how to reduce the impact they have on our homes and businesses. Thus by emphasising risk reduction measures, we can begin to reduce the costs of natural disasters and alter forever the face of the American emergency management system.

At FEMA, this redefinition process came about when James Lee Witt became Director of the Agency. Upon arriving in Washington, Director Witt committed his energies toward changing our nation's focus to disaster mitigation. He made mitigation the cornerstone of FEMA, and reorganised the agency to better meet our mitigation goals.

Prior to 1993, FEMA had a handful of mitigation programs that were spread haphazardly through the agency. We had a hazard mitigation grant program which provided grants to States and local governments on a fifty per cent cost-share basis after natural disasters occurred. This activity was part of our disaster relief program. We had the National Flood Insurance Program that mapped our nation's floodplains, and made flood insurance coverage available in communities in return for their adoption and enforcement of minimum floodplain management standards. This activity comprised its own organisational element within the agency. We had the National Hurricane and the National Dam Safety Programs that provided technical and limited financial assistance to Federal, State, and local governments regarding their respective hazards. And we had the National Earthquake Program, that worked within the Federal community to coordinate research and development

activities to address seismic hazards. These three programs were located in the State and Local Programs Directorate, but operated largely independent of any other program activity.

This organisational set-up meant FEMA's mitigation programs were neither coordinated nor focused toward the same goals. This hampered the agency's ability to provide leadership in the field of mitigation, and reduced the impact of our programs on the external environment. The fractured organisational structure also made it difficult for us to consider the interaction between hazards in the design and operation of our programs. For example, this organisation made it difficult to develop construction standards for properties that were at risk from both flooding and earthquakes. To correct these problems, Witt pulled all of FEMA's mitigation programs into a single organisation, known as the Mitigation Directorate. This has made it much easier for FEMA to make mitigation the cornerstone of emergency management. For the first time, we were able to begin leveraging our varied program resources to meet common mitigation objectives. We were able to add multi-hazard components to our activities, and encourage our States and local counterparts to do the same. The reorganisation also allowed us for the first time to embark on a coordinated effort to reduce the unacceptable costs that disasters have on our nation each year, rather than simply support individual projects and activities on a piecemeal basis.

The timing for these changes could not have been better. With increasing pressure in the United States to have accountability in government and to do more with fewer resources, the Congress and the American people were clamouring for FEMA to begin to take action to reduce disaster costs. It became clear that we could no longer continue as we always had. We needed to look at how we could work together to reduce our Nation's exposure to risk. Fortunately, Witt's reorganisation of our resources helped us meet this new challenge.

So in our new structure, we moved aggressively to push mitigation messages and encourage risk reduction activities. Our goal was to make a real and measurable impact on our nation's risk profile, thereby reducing human suffering and property damage, and the need for Federal, State and local response resources. While the issues are complex,

FEMA's vision of the future is simple. We are looking forward to a time when people think of mitigation the same way they think of seat belt usage in their cars — as a necessity. We want people to consider risk-reduction needs as a part of their daily lives. We want our citizens to expect their local and State officials to take action to protect their homes, businesses, and infrastructure. And we want them to understand their risks to natural hazards and think of mitigation when they build or purchase property, remodel their basements, and vote in the election booth. And most importantly, we want individuals and communities to take appropriate action to reduce the loss of life, injuries, economic costs, and disruption that all too often accompany floods, wildfires, earthquakes and other hazards.

President Clinton and Director Witt have taken dramatic action to make this vision a reality. Since they came to Washington, they have promoted mitigation as a national priority. The clearest example of the leadership they have provided can be found in the National Mitigation Strategy and the Disaster Resistant Community Concept.

The National Mitigation Strategy was developed with input from people from across the country, and at all levels of government and the private sector. It encompasses an all-hazards approach to reducing the long-term risk from disasters. The strategy outlines ways in which we as a nation can utilise and better coordinate existing Federal programs, develop new incentives, and implement cutting-edge technologies to reduce losses from hazards such as floods, earthquakes, hurricanes, and wildfires. and in doing so, the document is now providing a vision for safer communities as our nation moves into the 21st Century.

The process of developing the National Mitigation Strategy was a true example of consensus building. In order to create the strategy, FEMA conducted a series of eleven mitigation forums across the country in order to obtain input from our partners and other stakeholders in reducing disaster losses. A list of 2400 names was assembled from across the country. This list served as our invitation list.

The next step was to plan for the actual events. In determining where to hold the forums, the primary planning concern was geographic distribution. Given the size of the United States, we had to make sure that the logistics of

getting to and from the forums were not prohibitively expensive or time consuming for the attendees to participate. For that reason, we decided on holding eleven forums around the country. There was one in each FEMA region and one in Hawaii in order to include input from the Pacific Island areas. The forums occurred over a three-month period. Over 2,000 people accepted the invitation to participate in the forums, and hundreds more had to be turned away due to lack of space.

The forums themselves were extraordinary examples of consensus building. For each event, we asked the attendees to provide their recommendations to help us meet one simple goal. The goal is to reduce by one-half the nation's damage from natural disasters. We also provided the meeting attendees with some support and information in order to facilitate discussion. We opened each session with a video on the concept of mitigation, and we provided everyone with a list of what we now call the 'ten basic principles of mitigation'. These principles are as follows.

1. Risk reduction measures ensure long-term economic success for the community as a whole rather than short-term benefits for special interests.
2. Risk reduction measures for one natural hazard must be compatible with risk reduction measures for other natural hazards.
3. Risk reduction measures must be evaluated to achieve the best mix for a given location.
4. Risk reduction measures for natural hazards must be compatible with risk reduction measures for technological hazards and vice versa.
5. All mitigation is local.
6. Disaster costs and the impacts of natural hazards can be reduced by emphasising pro-active mitigation before emergency response — both pre-disaster(preventive) and post-disaster(corrective) mitigation is needed.
7. Hazard identification and risk assessment are the cornerstones of mitigation.
8. Building new Federal, State and local partnerships, and public-private partnerships, is the most effective means of implementing measures to reduce the impacts of natural hazards.
9. Those who knowingly choose to assume greater risk must accept responsibility for that choice.

10. Risk reduction measures for natural hazards must be compatible with the protection of natural and cultural resources.

The ten principles may seem basic, but in many ways they are new in the United States. They are changing the way in which our nation approaches both mitigation and the entire field of emergency management. For this reason, it is important that we defined them as the framework for all of the discussions during the mitigation meeting.

Once we reached common understanding of the guiding principles of mitigation, we moved on to a facilitated discussion involving all of the participants. In the open forum, we asked attendees to provide their thoughts in order to answer the following six questions.

1. How would you recommend we inform people about their risk and possible mitigation measures meant to reduce that risk?
2. What sort of timeline would be most appropriate for us to reach our goal of reducing natural hazard damages by one-half?
3. What mitigation measures have proven to be the most successful and effective and why?
4. What incentives can be used or created to encourage mitigation measures?
5. Can mitigation be voluntary, or must it be required? and;
6. How would you recommend mitigation measures be financed?

These questions generated about 300 pages of input between the eleven meetings. This input was then used as the basis for developing the National Mitigation Strategy. Using this raw data, staff in the Mitigation Directorate spent the next three months developing a draft strategy document, which was circulated to Federal and State agencies and key partner organisations for comment. Once all the comments were received, we revised the Strategy document to reflect the new information.

On three separate occasions, over a six-month period, we sent drafts of the Strategy out for comment. Throughout this lengthy process, efforts were made to incorporate the thoughts and ideas of all parties and seek resolution of outstanding issues through consensus, so that everyone could have their interests represented in the final product. Unfortunately, we did experience a number of delays and problems along the way that hampered our efforts. In

retrospect, the review process we established was not as coordinated as we would have liked. However, in December 1995, the first copies of the National Mitigation Strategy were distributed in time for a National Mitigation Conference. Because we spent so much time and effort to be inclusive with the strategy, we were able to prepare a vision for mitigation that transcends the Federal government. This was critical to the strategy's success, because while FEMA can provide leadership in raising the visibility and importance of mitigation, successful implementation of its principles was dependent on the actions of many others at the Federal, State, local, and private sector levels.

As a result, we had to draw everyone into the partnership. By doing so, we have developed a strategy that is not only a FEMA document outlining what government will do, but it is a national strategy designed to be implemented at all levels of government and the private sector. If we could go back and do it again, we would put together a working group to actually draft the document. That way, instead of FEMA having drafted the document in a vacuum, a sampling of all the stakeholders could have participated in putting pen to paper, further adding to the national focus of the document.

The National Mitigation Strategy is a 15-year plan, encompassing over sixty objectives designed to bring about a safer and more disaster resistant nation. The cornerstone of the strategy is the growing acceptance by all Americans of the need to take personal responsibility for making their communities safer from natural disasters. Toward this end, the ultimate goal of the Strategy has two components:

1. To substantially increase public awareness of natural hazard risk so that the public demands safer communities in which to live and work.
2. To significantly reduce the risk of loss of life, injuries, economic costs, and destruction of natural and cultural resources that result from natural hazards.

In order to achieve these goals, the Strategy is founded on the need to strengthen partnerships and create partnerships where none currently exist, in order to empower all Americans to fulfill their responsibility for building safer communities. These partnerships are needed to address the five major elements of the strategy which are as follows:

Hazard identification and risk assessment

We must conduct studies to identify hazards and assess the risks associated with those hazards for communities throughout the nation.

Applied research and technology transfer

We must encourage applied research that will develop the latest technology in response to natural hazard risks, and promote the transfer of that technology to users like State and local governments, the private sector, and individual citizens to support the National Mitigation Goal.

Public awareness, training and education

We must create a broad based public awareness and understanding of natural hazard risks that leads to public support for actions to mitigate those risks. We must also create mitigation training programs that can be used in schools and communities to support public actions.

Incentives and resources

We must provide incentives to encourage mitigation activities, and we must redirect resources from both the public and private sectors to support all elements in order to achieve the National Mitigation Goal.

Leadership and coordination

We must provide leadership in the achievement of the National Mitigation Goal, provide coordination among Federal agencies to promote hazard mitigation throughout all Federal programs and policies, and provide coordination with other levels of government and the private sector.

The strategy sets forth a series of strategic objectives by which to measure the Nation's success in achieving the National Mitigation Goal, and offers the basis for establishing priorities for use of limited resources in fulfilling its major elements. Most important in this regard is the *Mitigation Action Plan* (MAP) that highlights actions Americans and their governments must take to successfully launch the National Mitigation Strategy.

The MAP proposes a number of critical actions to make the communities in our country more disaster resistant. For example:

- Federal agencies will apply the best mitigation practices to their own facilities, complete a national natural hazards risk assessment, develop partnerships to advance research, standards development, and cost-

effective measures, provide incentives and spearhead a national public awareness campaign

- State and local governments should develop sustained administrative structures and resources for mitigation programs, adopt and enforce building codes and land use measures, and conduct ongoing public information campaigns on natural hazard awareness and mitigation
- private businesses and industries need to accept responsibility for being aware of the natural hazards that threaten their facilities and investments, reducing their risks, and taking an active role in their communities to encourage mitigation
- individual citizens should accept responsibility for becoming aware of the natural hazards that affect them and their communities, and for reducing their degree of vulnerability.

Finally, the strategy includes provisions for evaluation, not just of the achievement of strategic objectives, but of mitigation itself by providing a methodology and an implementation plan to develop a body of clear evidence that mitigation works. The strategy calls for the central collection of these evaluations and the dissemination of the results to policy makers and the public.

In many ways, the National Mitigation Strategy serves as our nation's framework for addressing its level of risk and reducing its susceptibility to natural disasters. Through its implementation, we will be able to better protect our ways of life and reduce the unacceptable cost of disasters.

That is not to say the strategy is perfect by any means. When we released the strategy at the National Mitigation Conference in 1995, we provided our country with the vision of the future. What we didn't do enough of, however, was lay the road map showing how to get there. We did lay out a Mitigation Action Plan that outlined a series of objectives with associated time lines, however, the strategy did not assign any responsibility for making it happen.

The strategy we developed did little to outline how elements of the Strategy can be pursued by Federal, State, local and private sector interests. As a consequence, we had to spend nearly a year-and-a-half after the strategy's release developing an implementation plan that provided such guidance. Secondly, if we could do it over again,

FEMA would want to include a discussion about the need for specific legislation to support national mitigation objectives. For instance, we would need to develop a linkage between State and local mitigation activity and the cost-share they receive from the Federal government for disaster relief. The strategy should also have contained specific reference to the need for an Executive Order from the President directing the entire Federal community to include mitigation in their work and planning activities. Despite these missed opportunities, I believe we have made a great deal of progress to begin meeting the objectives outlined in the Strategy.

We are using the strategy as a tool to start a new initiative known as *Disaster Resistant Communities*. The idea is to work at the community level in advance of a natural disaster to promote mitigation. The idea is to work at the community level to build community partnerships, identify hazards and community vulnerability, prioritise hazard risk reduction actions and communicate success. Through these efforts we believe the community will become less vulnerable to the hazards it faces. FEMA will provide the community with pre-disaster mitigation funding and encourage other Federal agencies to do the same. In return, we expect the community to use that funding to leverage State, local and private sector contributions to take care of mitigation needs at the local level. There are three primary elements of the Disaster Resistant Community initiative. They are *community focus, private sector involvement and use of incentives*.

The Disaster Resistant Community initiative is focused on promoting mitigation at the local level. In the United States, we can do all we want at the national level to promote mitigation, but those at the local level need to identify their local priorities and commit local resources to make it happen.

In its simplest sense, building codes, land-use decisions, and the monitoring of construction practices occur primarily at the community level. This means unless we pay attention to the community level in this equation, we will never meet our mitigation objectives. That is why in the Disaster Resistant Community initiative, we will be working with local governments to reduce their risk from natural disasters. We will meet with local officials and community leaders in their communities, provide them with technical support, encourage them to

take the lead in assembling the stakeholders and identifying mitigation priorities, and allow them to manage the actual project.

A second pivotal element of the Disaster Resistant Community initiative is the involvement of the private sector. Natural disasters cost the private sector billions of dollars annually due to damaged facilities, lost productivity, lost sales and revenue and increased absenteeism among workers. And the impact goes well beyond their physical plant. For example, when power is lost company machinery cannot operate, when an organisation's suppliers and distributors experience losses those suppliers and distributors cannot support company production or sales, and when roads and bridges wash-out or fail private sector organisations can't move their goods to market. Based on our experience, the most successful mitigation initiatives are ones in which the private sector can come to recognise the benefits they can accrue with hazard mitigation, and to help make it happen.

A critical element of the Disaster Resistant Community initiative lies in the creation of incentives to encourage mitigation. Over the past few years, we have learned that mitigation is a dollars-and-cents issue. Stories about avoided losses or the suffering felt by others does not do the job. Local citizens, the private sector and local governments need to understand what is in mitigation for them before they are willing to mitigate natural disasters. Toward this end, much of the work we are doing with our State, local and private sector partners has revolved around developing incentives such as:

- reductions in local property tax rates for structures built to certain hazard-resistant standards
- reductions in local property tax rates for structures built to certain hazard-resistant standards
- insurance rate discounts or deductible waivers in return for mitigation actions similar to what FEMA does under its National Flood Insurance Program
- developing a linkage between a community's bond rating and its investment in risk-reduction activities
- increased or decreased cost-share arrangements for States and communities depending on mitigation efforts
- low or no-interest loans to complete mitigation work

- reductions in mortgage interest rates charged to people and companies that build their facilities beyond code requirements.

At this time, we are developing these and other incentives that will encourage activities to reduce the impact of natural hazards on the lives of our citizens.

The United States is on the cusp of a much brighter and safer future through hazard mitigation initiatives. Progress in the development of all-hazard mitigation technologies and standards is finally

beginning to pay dividends. The string of large disasters over the last decade has helped raise public awareness of natural hazard risk higher than ever before.

Fiscal pressures have made the reduction in disaster losses more important than ever. And we are seeing real cost savings due to past investments in mitigation. But there are still many obstacles to overcome. We as a society need to change the way we make our decisions on land use issues, alter community building practices, and promote

land-use decisions that reduce the long-term risk to people, their property, and their communities. We have a long way to go in educating people about the risks they face, and how they can take action to counteract them. We still need to develop more compelling incentives and disincentives to encourage mitigation actions at the local level of government. We must also internalise the need for risk reduction as a cultural value, so people begin to demand safer communities in which to live and work.

Disaster events calendar

2-3 June, 9-10 June 1998

Emergencies '98

Sydney and Perth, Australia

See details on page 44.

6-8 September 1998

Risk Analysis '98

Valencia, Spain

Sponsors:

Wessex Institute of Technology, UK, Universitat Jaume Spain, Centro de Investigaciones sobre Desertificacion-CIDE, Consejo Superior de Investigaciones Cientificas, University of Valencia, Generalitat Valenciana and Universidad Internacional Menendez

Contact:

Conference Secretariat
Paula Doughty-Young
Risk Analysis '98
Wessex Institute of Technology
Ashurst Lodge
Ashurst, Southampton
SO40 7AA, UK
Tel: 44 (0) 1703 293 223
Fax: 44 (0) 1703 292 853
e-mail: paula@wessex.ac.uk
website: www.wessex.ac.uk

27-30 September 1998

Disaster Management Crisis and Opportunity

Cairns, Queensland, Australia

The focus of this conference is on the Asia-Pacific region with its diverse communities and various hazard risks. Session topics will include hazard warnings, planning, community vulnerability, hazard awareness education, monitoring and forecasting, recovery, tourist industry implications, policy and institutional constraints and economic impact and costs.

Sponsors:

The Queensland Dept. of Emergency Services; JCU Centre for Disaster

Studies; JCU Centre for Tropical Urban and Regional Planning.

Contact:

The Coordinator
James Cook University of North Queensland Centre for Disaster Studies,
PO Box 6811
Cairns, Queensland, 4870 Australia
Tel: +61 70 421 215
Fax: +61 70 421 214
e-mail: linda.berry@jcu.edu.au

2-3 October 1998

Emergency Expo '98

Werribee, Victoria, Australia

See details on page 4.

6-9 October 1998

Worldaid '98

Geneva, Switzerland

Contact:

Worldaid Press Office
Tel: +44 22 761 2642
Fax: +44 22 761 2641
e-mail: info@worldaid.org
website: www.worldaid.org

9-11 October 1998

1998 Annual Conference Australasian Fire Authorities Council

Hobart, Tasmania

Contact:

Mr Rod Cuthbert or
Mrs Margaret Kean,
Organising Committee
AFAC 1998 Conference
Tasmania Fire Service
GPO Box 1526R, Hobart, Tasmania
Tel: (03) 6230 8605
Fax: (03) 6230 8604

11-13 October 1998

Fourth International Conference on Corporate Earthquake Programs

Shizuoka City, Japan

Contact:

One Washington Square
San Jose,
CA 95192-0083
Tel: (408) 924-3858
Fax: (408) 924-4004
e-mail: vukazich@email.sjsu.edu

1 December 1998

5th Annual West Coast Disaster Response Conference (WCDRC)

Burnaby, British Columbia, Canada

Topics:

Response planning for residential neighbourhoods, schools and corporations.

Contact:

WCDRC
c/- Epicentre Inc.
Suite 1550, 200 Burrard Street,
Vancouver, BC, V6C 3L6
Tel: (604) 682 6005
Fax: (604) 682 0500

24-28 May 1998

23rd Annual Conference of the Association of State Floodplain Managers (ASFPM)

Portland, Oregon

Contact:

ASFPM
4233 West Beltline Highway
Madison, WI 53711
Tel: (608) 274-0123
Fax: (608) 274-0696
e-mail: asfpm@execpc.com

To have your event featured in this section, contact Rob Fleming with your event details on fax (03) 5421 5273 or e-mail: rfleming@ema.gov.au

Australian Disaster Research Grants

The 1998-1999 Program

The Australian Disaster Research Grants program provides limited financial support for *Australian* researchers to go to a disaster site in Australia to gather valuable data which might otherwise be lost.

It is intended that research is undertaken in the immediate post-impact period (within a few days or weeks after the event) to conduct short qualitative and quantitative field investigations of disasters.

Eligibility

The program is open to Australian academics, scholars and practitioners in any area of emergency management. The applicant will need to demonstrate an ability to undertake the type of research intended and the ability to draw conclusions for application to similar events or to other types of disasters.

Type of research

No restrictions are placed on the type of research which might be undertaken. Natural and technological disasters are included and areas of investigations can include either scientific, social or management areas.

While it is expected that physical scientists will specify the type of hazard to be investigated, social scientists might select a topic area that could be studied regardless of disaster type or location.

Funding

The annual funding for the total program is limited to \$20,000 and the maximum for a grant is \$5,000. It is expected, however, that the average individual grants will be about half that level.

Proposals

Proposals are to be limited to five pages in length and must include the following information:

- the disaster type and research problem to be studied
- the research design to be followed
- the plan to move quickly to the field and access the data needed
- the theoretical and/or applied benefits anticipated
- a tentative budget based on team size, time in the field.

Selection basis

Selection will be undertaken by EMA from the most meritorious submitted against the following criteria:

- the potential value of the research to comprehensive emergency management and to the development of Australian arrangements
- the need for a quick response research program as opposed to other conventional research programs
- the practicality of the method proposed for data collection, particularly during the on-site investigation
- the theoretical and or applied anticipated benefits
- budget outline including expect time in the field
- the demonstrated qualification of personnel involved in the project.

A curriculum vitae is to be attached to the proposal.

Additionally, the applicant will normally be expected to attach a letter of support from a departmental or agency head.

Report requirements

A brief summary report of one or two pages accompanied by a breakdown of expenses is required during the first two weeks of the research.

A final report of five pages or more is required within four months of the commencement of field work. This report is to describe the research area, methods used, conclusions and their theoretical or applied significance and, if appropriate, provide recommendations. It will also include a breakdown of expenses occurred.

The final report is required in hard copy (12 copies) and on disk (Microsoft Word or WordPerfect). On receipt of the research report, EMA will provide a copy to the affected state or territory for consideration (e.g. *sub judice* aspects). The report will subsequently be distributed by EMA to state and territory emergency management committees and will be placed on the EMA homepage on the World Wide Web.

Site access

When an event occurs, previously-accredited project proponents will be required to advise EMA:

- why the event is suitable for the research proposal which was previously submitted
- what on-site investigation is required (if different from the original proposal)

- when the on-site investigations should commence
- an estimated budget.

A condition of the program is that satisfactory arrangements are made for the research to be undertaken. These will be undertaken by EMA which will contact the relevant state or territory emergency management committee to:

- confirm the details of the proposed research and on-site investigation
- seek agreement for the conduct of the on-site investigation
- confirm operational and administrative arrangements to apply including:
 - to whom the researcher is to report and where
 - limitations to apply to movement while in the vicinity of the event
 - arrangements to seek approval to vary the agreed on-site investigation
 - limitations on the type of material which can be collected at the site (e.g. photographs).

EMA will advise the conditions to the researcher and, on receipt of written assurance that the condition will be met, will authorise funds to facilitate the on-site investigation.

Notwithstanding arrangements made, there may be operational circumstances which require that they be terminated or varied without notice.

The researcher is also to provide EMA with details of progress towards the completion of the project.

Program timings

Proposals must be submitted to the Australian Emergency Management Institute by 30 April 1998.

Those that are approved in principle will remain current for the immediately following financial year.

Submission

Proposals are to be forwarded to the

Director,
Australian Emergency Management
Institute
Mt Macedon Rd
Mt Macedon, Victoria 3441.

Queries should be directed to:

Rob Fleming
Tel (03) 54 215 100
Fax (03) 54 215 273
E-mail: rfleming@ema.gov.au

