



# The Australian Journal of **Emergency Management**













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## The Australian Journal of Emergency Management



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The aim of this publication is the exchange of information and views across the Australian emergency management community, therefore, the views expressed in this journal should not be taken to be the views of Emergency Management Australia.

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# The use of the public library for emergency management response and recovery

**W**ithin an Australian context, an analysis of the use of public libraries for disaster or emergency, preparedness, response and recovery is, to my knowledge, very minimal. It seems that the 'professional' agencies most directly involved in dealing with disaster have their own specialist channels of communications, information sources and network of agencies.

The thrust of Australian emergency management is to hand back to the community responsibility for their emergency planning, response and recovery. A good example of this is the Victorian Country Fire Authority's 'Community Fireguard' program, which empowers the community to manage its own vulnerability and planning. If the community views the public library as an important function, ought it be relevant as a partner in the community's emergency planning, response and recovery?

What would emergency planners, responders and recovery managers expect to be provided from the public library? Would it provide data on past events such as river or flood heights, details of contaminated sites, details of historical events of hazards pertinent to the district? Would its network of community resources be useful to responders and recovery managers?

Studies from the UK have shown that this source has also been an overlooked resource but in some situations the public library has significantly contributed to the enhancement of disaster response and recovery. As each disaster is different, so to were the responses provided by the public libraries in the UK. Libraries were seen as part of the community and somewhere to meet and go which is a valuable part of community bonding and reconstruction. As the case of the Lockerbie disaster demonstrated, the library was designated as the centre for the community liaison office. The community liaison team was established as the community's 'one-stop' approach to all local authority and non-emergency services. The library was also set-up as the base for the relief fund. These roles were well outside their traditional services but, to be part of a community, the library must be seen to share the experiences of that community and contribute to its new life. At Lockerbie

ongoing liaison was maintained between the library and the community support staff. This ensured that information continued to be made available to the community and that material was obtained for an archival collection. This archival process forms part of that community's memory and in some way forms part of the community's memorial function.

In the case of the Hillsborough football stadium disaster, the Hillsborough community library was used as a community 'helpline'. Volunteers and library staff answered calls concerning a range of matters, such as

- people anxious about relatives or friends
- social workers from other areas tracing survivors on behalf of families
- people who were at the match wanting to trace survivors
- injured survivors tracing those who had rescued them or people they had met in hospital etc.

The public library also played a significant role in response to the 'Towyn floods' in Clwyn, Wales. The library was set up to act as a central coordination point for the welfare services and as an advice centre for both public and professional use. It also played many other roles. Some of these and other examples revealed by Marilyn Dover in her publication *Civil Disasters: the role of public libraries following a crisis in the community* (1993), show that public libraries are and can play a vital part within the community.

Within Australia the only notable role undertaken by any public library to my knowledge is the Newcastle Regional Library, with its documentation and collection of data on the Newcastle earthquake. However, to a large degree this was a latent result of a decision of what to do with the money raised by the disaster appeal. Ken Granger (1998) challenges the Australian library community to collect information on the local experience of disaster events. He believes that these libraries are well equipped to seek, organise and maintain the eclectic range of material that is of value to a wide range disaster researchers and emergency planning in their pursuit of disaster preparedness. He also regards that the local library to be a social and cultural

focus in the community and is ideally suited to focus local studies, especially given that disasters are invariably defining monuments in a community's history.

The question that arises from this is: why are Australian public libraries not playing any role in disaster planning, response or recovery?

To answer this question I think that perhaps public librarians within Australia seldom think beyond their traditional role. To compound this situation emergency planners may also find it difficult to think beyond the traditional response agencies and the social and welfare agencies.

It is also difficult for Australian public libraries undergoing privatisation and enlarging municipal districts due to rationalisation to think beyond traditional services. This is especially difficult when finances are being reduced.

On the disaster planning and response aspect, there has not been one public librarian attend any disaster course conducted at the Australian Emergency Management Institute in the last ten years. This may be a reflection of the various nominating authority's inability to tap into the wider community. Perhaps to overcome a perception that public libraries have little or no role to do with disaster planning, response or recovery, local emergency managers could seek more active partnerships within this sector of the community. This partnership between librarians and planners would enhance community participation and commitment. Libraries and librarians can be used as a resource for planning data, a resource for community participation and even a focal point for the community's social and cultural history. I would very interested to hear if emergency planners have and do use their public library for any emergency management role.

**Rob Fleming**  
Editor

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# Administrative law and response to emergencies

**E**mergency management has given rise to gratifyingly little litigation, and when it has, the litigation has been largely confined to the areas of negligence and employment law. This experience might suggest that emergency managers can get along reasonably well without a thorough knowledge of the principles and practices of Administrative Law. Up to a point, this is probably true. But, I shall argue, Administrative Law has implications for emergency management and if it is not taken into account, managers may occasionally find themselves in considerable legal trouble.

Emergency management involves the exercise of public power, and this is normally regulated by at least two bodies of law. One of these bodies of law consists of the legislation which relates specifically to the activity in question. In the emergency area, this legislation is typically to be found in state disaster or emergency service legislation, and sometimes in legislation which regulates the structures of particular emergency services. The second involves a more general body of law which applies to administrative activities in general. This more general body of law—Administrative Law—constitutes the background against which all legislation must be read. It fills the gaps left by such legislation, and qualifies and supplements the powers and duties prescribed by the specific legislation. One branch of administrative law concerns the procedures whereby the merits of administrative decisions can be reviewed. This branch need not concern us here. Merits review plays little role in emergency decisions. The other major branch of administrative law is concerned with the legality of administrative acts, and with the consequences of administrative irregularities. This paper is concerned with the implications this latter branch of the law. In the heat of an emergency, administrative law is unlikely to be uppermost in most people's minds. However, I shall argue, administrative law is by no means irrelevant to reactions to emergencies. It bears on the institutional arrangements for emergency management. And insofar as it is not taken into account, emergency managers may find themselves in considerable legal trouble.

The core content of administrative law can be stated relatively simply. Administrative powers can be exercised only by

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those on whom they are conferred. Those on whom powers are conferred may exercise only those powers which actually have been conferred on them. Where procedures are prescribed, these procedures must be followed. Exceeding one's powers or failure to follow prescribed procedures will normally mean that one's acts lack legal authority.

Stated baldly, these propositions seem relatively obvious. What is less obvious is whether powers have been conferred in particular situations; what those powers actually are; what procedures must be followed in particular situations, and what is to happen if powers are exceeded or prescribed procedures not followed. To those of you who are familiar with emergency legislation, the answer may seem obvious enough. In most Australian jurisdictions, emergency legislation can be tracked down relatively easily. On the whole it appears to be clearly expressed, and if you have read it or if you read it, you will note that it addresses questions of who may do what, and according to what procedures. Why then, is it necessary to have some understanding of administrative law?

The answer is threefold. First, a close reading of most emergency legislation indicates that there are issues which it does not address. Second, administrative law imposes limits on administrative powers over and above those which might appear from a literal reading of the legislation. Third, while legislation tends to provide a reasonable guide to questions relating to powers and prescribed procedures, it tends not to address the question: but what happens when powers are exceeded or prescribed procedures are not followed? These omissions are not accidental. Those who draft legislation will do so knowing that these apparent gaps can be filled by the general principles of administrative law. It is therefore unnecessary to spell out these principles in particular pieces of legislation. Indeed, it might be positively undesirable. It would tend to make legislation much longer

and more complex than is currently the case. It might well create problems—as for instance, where a court had to consider whether provisions specifically incorporating some administrative law principles was to be taken as impliedly excluding the operation of others. There are also symbolic reasons. Legislation which embodied the general principles of administrative law would need to make specific provision for extremely rare contingencies: the exercise of a draconian power for personal rather than public purposes; arbitrarily exercising powers in order to assist some groups rather than others; refusals to listen to what someone had to say because one had already made up one's mind. The inclusion of such provisions might well be the occasion for resentment, being taken as implying that those at whom the legislation is directed are the kinds of people who need to be told that this is unacceptable behaviour.

Reading the legislation is therefore not enough. To understand powers, procedures and consequences of administrative irregularities, it is necessary to resort to the general principles of administrative law. I shall demonstrate this by reference to the following questions. Who has power? What are the limits to power? What procedures apply in relation to the exercise of powers? And, what happens when powers are exceeded, or procedures not complied with?

## 1. Who may exercise powers?

Emergency legislation necessarily confers important powers. These are conferred on the incumbents of specified positions and in general, the importance of the power is related to the importance of the repository of the power. An obvious problem with conferring powers on a particular person is that the person might not be in a position to exercise those powers when occasion arises. If, for example, the Minister is killed or injured as a result of a major disaster, he or she will not be in a position to exercise powers in relation to the management of the emergency. For this reason, legislation makes provision for delegation of powers. Emergency legislation includes clear provisions relating to the procedures for delegating powers. However, there are some questions which are not always addressed in emergency legislation. These include questions such as:

- What is the position in relation to a delegation of power when the person who delegated the power has left office? Do all the delegations cease to have effect?
- Can a repository of the power to delegate withdraw a delegation of power?
- Can power be delegated to the incumbent of a particular role, or only to a named person?
- Can a person to whom power is delegated in turn delegate that power to yet another person?
- If power is delegated to the incumbent of a particular office, what happens if the office is re-defined?
- If there is no express power to delegate, are there circumstances where a power to delegate might be implied?

It is tempting to suggest that there are common sense answers. It makes sense to assume that delegations, once made, continue even when the person making them ceases to hold office. The alternative would be administrative chaos. It would mean, for instance, that in the aftermath of a disaster, the Minister's delegations could cease to have effect at the very time when it was essential that there be someone in a position to exercise powers. It would also seem obvious that the power to delegate implies a power to revoke delegations. It would be convenient, especially in the context of emergency management, that delegations be to role incumbents rather than to named people. If the only specified repository of the power is someone who is likely to be far too busy to be able to exercise the power in every circumstance requiring its exercise, it makes sense to assume that there is an implied power to delegate. As we shall see, common sense is not a bad guide to administrative law. However, it should be noted that the common sense and the law do not always coincide. Historically, for instance, the death of the monarch terminated many appointments, notwithstanding that it might have made institutional sense to maintain those appointments—especially given the potential for chaos during an interregnum.

General statutes relating to the interpretation of legislation throw some light on these issues. First, in most jurisdictions, these provide that a delegation survives the departure from office of the delegator. Second, delegations can be revoked. Third, power can be delegated to the incumbent of a named office. The position where the definition of the office changes so that it no longer corresponds precisely with the office to which power was originally delegated is not clear. In several jurisdictions, there are statutory provisions to the effect that delegated powers may not be further delegated. Finally, a power to delegate may be implied

even if there is no express provision for it. First, while there is a presumption that acts are valid only if done by the statutory repository of a power, this presumption is rebuttable. If the legislation would be unworkable in the absence of delegation, a power to delegate will be implied. Second, even in the absence of a power to delegate, courts may imply a power to act through an agent. In contrast to delegates, agents act in the name of their principal rather than in their own name, but otherwise they are almost indistinguishable from delegates (and are sometimes described as such). A delegate may be found to have the power to act through agents even when there is an express statutory prohibition on sub-delegation. The power to act through agents is more likely to be inferred where the discretion to be exercised by the agent is limited, where the agent does not make important decisions, and where the agent is a person of appropriate standing.

## 2. The extent of powers

The most fundamental principle of administrative law is that people can exercise such legal powers as are conferred on them by law, and only those powers. If an administrator seeks to justify an administrative act, the administrator must be able to point to legal authority for that act. In a limited number of situations, administrators exercise common law powers. Typically, however, administrators' powers are statutory. Numerous powers are conferred by emergency legislation. These range from quasi-legislative powers such as the power to develop disaster plans to largely executive powers such as the power to enter land, take, damage or destroy land, close streets, and order people off land. What is impressive about many of these powers is that they provide authority for acts which involve considerable interference with proprietary and other interests and which, but for the empowering legislation, would be illegal. However, while legislation confers powers, it also restricts them. It defines what people may do, and in so doing it permits behaviour, but only if the behaviour falls within the permitted class of behaviours. Moreover, it may limit powers in other ways. It may set out conditions precedent to the exercise of those powers. It may state that a power is to be exercised only for a particular purpose. Emergency legislation provides numerous such examples.

The moral for those involved in emergency control is clear: they must know what the relevant legislation permits them to do, and in what circumstances, and for what purposes. This might seem to be a relatively simple exercise, involving no more than an hour or so spent poring over the legislation.

However, a literal reading of the legislation may be misleading. Legislation may be ambiguous. Moreover, even if it appears not to be, it may nonetheless need to be interpreted in the light of a number of implied limitations on the which administrative law imposes. Some of these limitations are relatively commonsense limitations. Others may be less so.

Consider, for example, the following issues.

- The existence of a power will normally be dependent on the existence of a particular set of facts. What is the position where the administrator honestly, but mistakenly believes the facts to exist?
- A police officer is considering whether to order the evacuation of a family. The family does not want to go. The officer believes that the family could well be in danger, but makes the decision to order evacuation partly because of concern that, if left behind, members of the family might engage in looting.
- An administrator is faced with an ambiguous provision in a statute, and decides to act on the basis of a plausible interpretation of the legislation. A court subsequently rules that the interpretation was incorrect.

The first point to be noted is that courts will interpret emergency legislation, taking into account two major considerations. One is that it should be interpreted in a manner consistent with its underlying rationale, namely that the emergency personnel responsible for reacting to emergencies should be able to do so effectively. This means that where ambiguities exist, the legislation should not be interpreted in a manner which would mean that those responsible for reacting to emergencies could be penalised for making mistakes which were reasonable in all the circumstances. The other is that in the event of ambiguity, draconian powers are to be given a restrictive interpretation. In an emergency context, the former consideration will generally trump the latter one. However, even in time of emergency, courts will not always allow the control of the emergency to take precedence over all other considerations. Whatever the emergency might demand, an ultimate limit is placed by the requirement that there must be some basis for the exercise of a given power. For another, even assuming ambiguous law, commonsense alone would suggest that competing interests must be balanced. Powers will be more likely to be interpreted in favour of an administrator acting in the heat of an emergency than in favour of an administrator who has plenty of time to plan a particular course of action. Powers will be

interpreted more broadly when their exercise can be seen as linked to the control of an emergency than when their link to emergency control is more tenuous. Consistent with this is the case law dealing with administrators' powers in time of war. In general, administrators enjoy considerable freedom of action. Statutes tend to be construed in favour of the state rather than the individual, even where the individual's interests are of a kind that would normally receive considerable judicial recognition. However, even in wartime, powers are not unlimited. Administrators must act within statutory limits.

Second, powers will normally be regarded as having been conferred conditionally. These conditions sometimes flow from the legislation; sometimes they are implied. While their rationale is clear, they will not always be apparent to those who simply take legislation at face value. Space does not permit a thorough analysis of these conditions. However, I shall discuss some of the more important conditions. These include the following: (1) Where a pre-requisite for action is a person's opinion, that opinion must be an opinion reasonably open to the person and based on a reasonable gathering of information or on reasonable reliance on information provided by others. (2) Where an administrator has a discretion, that discretion may be exercised only after the administrator has taken account of all legally relevant considerations; (3) powers may be used only for the purposes for which they have been conferred, and decisions may not be based on legally irrelevant considerations; (4) even where the law is ambiguous, administrators may act only on the basis of the interpretation which courts ultimately find to be the correct one; (5) administrative behaviour must not be unreasonable.

## 2.1 Opinions

Emergency legislation frequently conditions the exercise of powers on administrators' opinions. Formulae vary. Some powers are made dependent on the person being satisfied that it is necessary or convenient to take that course of action. Some are based on a person's being satisfied that there are reasonable grounds for taking action. Some powers are dependent on the person believing on reasonable grounds. In yet other situations, the exercise of a power appears to be conditioned on the actual existence of a particular set of facts. Taken literally, such provisions might suggest that some powers could be exercised on the basis of an opinion, notwithstanding that the opinion was unreasonable; some only on the basis of a reasonable opinion, and others only if the relevant facts actually existed,

regardless of their having been reasonably believed to exist. In fact courts seem to come close to implying that the precise formulation of the requirement makes little difference to the criteria for the determination of whether conditions precedent to the exercise of a power have been met.

At one extreme one finds *Liversidge v Anderson* [1942] AC 206. There the English House of Lords (by majority) held that even when a power was conditioned on the decision-maker's having a reasonable belief, it was the decision-maker's view of the reasonableness of the act that counted. This decision was much criticised, and is no longer good law. Its contemporary significance is sociological rather than legal. It demonstrates courts' tolerance for decision-makers in time of emergency.

In contrast, in *George v Rockett* (1990) 170 CLR 104, the Australian High Court has considered a power whose exercise was conditional upon it appearing to the decision-maker that there were reasonable grounds for forming a particular view. Taken literally, a requirement of this nature might suggest that all that was needed was that the decision-maker consider that there were reasonable grounds for holding a belief. However, the Court considered that this formula imported a requirement that there actually be reasonable grounds for the belief. This seems to suggest that Australian courts will require that a belief which is a condition precedent to the exercise of a power be a reasonable one, regardless of whether the legislation actually specifies this as a requirement.

Given this, it follows that where an administrator forms an honest, but unreasonable opinion, this will not be sufficient to justify action based on that opinion, even where a statute appears to permit action, once the administrator has formed the relevant opinion. In practice, however, little is likely to turn on these differences. Even if decision-makers were entitled to act on the basis of unreasonable opinions, the unreasonableness of the opinion might cast doubts on whether the decision-maker actually formed it, and on whether the decision-maker had taken appropriate matters into account in forming it. Moreover, results similar to the kind of results achieved in the two cases could normally be achieved by recognising that what is unreasonable in normal circumstances may be reasonable in time of emergency or war.

The law also deals with the question of what is to happen when the exercise of a power is apparently conditioned on actual existence of a particular state of affairs. Recognising the problems that could arise if facts apparently supporting a bona fide

exercise of power were later to turn out not to exist, courts are reluctant to assume that legislation is to be interpreted on the basis that it is actual facts rather than reasonable beliefs about facts which matter. Moreover, courts are reluctant to inquire into the substantive—as distinct from the legal—merits of administrators' decisions. Inquiring into the actual existence of factual preconditions for the exercise of a power will involve a form of factual merits review. If it is clear that this is what the legislation requires, courts will conduct such a review, but if the legislation can be interpreted so that what counts is the administrator's reasonable beliefs, courts will opt for such an interpretation. Moreover, just as courts will doubt whether an administrator really believed that a particular set of facts existed, if it would not have been reasonable for an administrator to have so found, so will they be inclined to find that facts did exist if there is also evidence consistent with the administrator's belief in their existence having been reasonable.

One thing is clear, however. Where powers are delegated, problems might potentially arise from the fact that the exercise of powers is conditioned on the opinion of the person with the power to delegate. It would obviously defeat the purposes of delegation if the delegate had to ascertain someone else's opinion before acting, and legislation in all jurisdictions makes it clear that where power is delegated and conditioned on the formation of an opinion, the relevant opinion is the opinion of the delegate.

## 2.2 Purposes

Powers are sometimes expressly conferred for specified purposes. In such cases, the power may be exercised only for those purposes and not for other purposes. Moreover, even if powers are not expressly conferred for a particular purpose, they will be construed on the basis that they may be exercised only for certain purposes. Sometimes, too, legislation makes it clear that power is not to be exercised for certain purposes. For example, in most jurisdictions, emergency legislation provides that it does not authorise measures for the ending of a strike or lock-out, or for putting down a riot. However, even in the absence of such provisions, some purposes will be treated as improper purposes. An exercise of a power for an 'improper purpose' means that the administrator has acted beyond powers.

The proper purposes requirement can be treated as one which flows from a common-sense interpretation of the statute. It is also a well established principle of administrative law. The most obvious examples of improper purposes are uses of public powers to

achieve private goals. Police officers exceed their powers if they exercise their powers to rid themselves of unpleasant neighbours or because they have been bribed to exercise them in a particular way.

Nor may public powers be used to achieve public purposes other than those for whose achievement they have been provided. Even if administrators believe that the achievement of a particular goal is in the public interest, they may use their statutory powers for the achievement of that purpose only if the power has been conferred in order to enable that purpose to be achieved.

In practice, the proper purposes requirement can be difficult to apply. While legislation sometimes makes it clear that a power is to be exercised only for a particular specified purpose, or not for some other purpose, it is often silent on this question. Proper and improper purposes must be inferred from the general nature of the legislation, and this may require delving into the case law to see how courts have handled problems arising under analogous legislation.

A successful attack on the exercise of power on the improper purposes ground requires that no attempt would have been made to exercise the power but for the improper purpose. Thus a decision intended to achieve multiple purposes—some proper, some improper—may be nonetheless be a legal one, depending on the role played by the improper purpose in the exercise of the power. In practice, too, proof of improper purpose is likely to be difficult. It is probably no accident that most reported improper purpose cases are cases where the administrator acted in good faith, and therefore saw no reason to eliminate the evidence of what was ultimately found to be an improper purpose. The answer to the hypothetical question in relation to the evacuation of the family therefore appears to be that the decision would be flawed if it would not have been made but for the officer's desire to get revenge for prior challenges to the officer's authority. (Public powers are not bestowed to enable the pursuit of private vendettas.) If, however, the decision would have been the same, quite apart from the satisfaction it gave to the officer, the exercise of the power would be valid.

### 2.3 Relevant and irrelevant considerations

Powers are often conferred on the basis that they will be exercised only after particular considerations have been taken into account. In such cases, failure to take the considerations into account means that the administrator has erred. In jurisdictions which require the declarer of a state of

emergency to be satisfied that the disaster is such that appropriate counter-disaster measures are beyond the capacity of, say, a disaster district co-ordinator, failure to consider this issue would mean that the exercise of discretion had miscarried. In some cases, however, it may be more difficult to determine whether a particular matter is a relevant consideration, in the sense that it must be taken into account. Two things are clear. One is that there are some matters which must be taken into account, notwithstanding that there is no express requirement to this effect. The other is that administrators are not required to take account of matters simply because it might appear that a wise administrator would have considered those matters. The obverse of the duty to take account of relevant considerations is the obligation not to take account of legally irrelevant considerations.

In determining whether matters are relevant or irrelevant, the courts look to the legislation. Sometimes, legislation adverts specifically to such matters. More usually, there will be grey areas, and relevant considerations must be inferred from the general scheme, subject matter and purposes of the legislation. Where legislation confers broad discretions, the considerations which the decision-maker must or must not take into account will be confined to those which can be implied from the statute. Courts may also have regard to legislation other than the legislation which specifically confers the power.

The fact that a matter must be taken into account means only that the administrator must give the matter some weight. If a court concludes that the administrator gave a matter far too little weight, it may find that the administrator erred, but the error will not be the failure to take account of the consideration. The duty to take account of a relevant consideration arises only if the administrator is at least constructively aware of the consideration. An administrator is constructively aware of a matter when the matter has been brought before the administrator's staff with a view to its being communicated to the administrator.

It is not always fatal to a decision that a relevant consideration has not been taken into account, or that an irrelevant consideration has been. 'A factor might be so insignificant that the failure to take it into account could not have materially affected the decision.' If that is so, the decision can stand.

Examples of express prohibitions on particular considerations being taken into account are rare. However, the express provisions which exist in several states in relation to strikes and riots suggest that taking into account the effect of a proposed

measure on strikes or riots would amount to taking an irrelevant consideration into account.

The 'relevant considerations' requirements overlap somewhat with the 'proper purpose' requirement. However, the fact that a purpose is a proper purpose does not mean that it must be taken into account. More surprising, perhaps, is the fact that the impropriety of a purpose may not necessarily mean taking account of the degree to which a proposed course of action will contribute to that purpose and means that the decision maker is taking account of a legally irrelevant consideration.

### 2.4 Errors of law

Where the exercise of a power involves interpreting the law, administrators have almost no freedom of manoeuvre. While judges recognise that law can be ambiguous, they also proceed on the basis that in any dispute, there is only one correct interpretation of the law—the one handed down by the final court to consider the matter. Administrators who act on the basis of what turns out to be an 'incorrect' interpretation of the law will normally be treated as having exceeded their powers even if their 'incorrect' interpretation was one that was reasonably open to them. This principle is subject to one exception: if the error is immaterial, it will not affect the validity of the administrator's behaviour. In a sense this is unfair, since it could expose the administrator to civil actions for damage arising out of the 'illegal' act. In practice, the effects of such hardship are mitigated by the willingness of governments to indemnify officials who make honest mistakes. In addition, in three jurisdictions there exist provisions which appear to protect administrators from civil suits in cases where they act in good faith and are acting 'for the purposes' of the Act.

The requirement that administrators interpret the law correctly obviously overlaps closely with the requirement that they act on the basis of relevant but not irrelevant considerations. If the law is incorrectly interpreted, it is likely that the decision-maker will either have failed to take account of all relevant considerations, or that there will have been some account taken of irrelevant considerations. However, there may be cases where account has been taken of a matter, but where the implications of the consideration have not been properly considered. If this is so, the behaviour might not fall foul of the 'considerations' requirements, but would fall foul of the 'no error of law' requirement.

### 2.5 Reasonableness

Subject to the above considerations, administrators in the emergency area enjoy very

broad discretions. The mere fact that a discretion has been exercised in a manner which does not appeal to a court does not mean that the administrator will be treated as having acted in excess of powers. The mere fact that the administrator has made findings of fact which have subsequently been shown to be wrong does not mean that the decision is 'wrong' in a legal sense. However, administrative behaviour can be attacked on the grounds that it is such that no reasonable administrator acting according to law could have acted as the administrator in question did. This criterion can be satisfied only if either of two conditions is satisfied. One is that the administrator acted unreasonably; the other is that the administrator did not in fact act according to law. Traditionally, one of the functions of the 'unreasonableness' ground was to enable attacks on suspect decisions where there was probably an error, but where there was no direct evidence of any particular kind of error. With the advent of freedom of information legislation, and statutory rights to reasons for decisions, this consideration is less important than was once the case. However, the unreasonableness ground still has a residual role to play. It covers cases where account has been taken of relevant considerations, but where an administrator has attached quite unreasonable weight to some considerations; where an administrator was not obliged to take account of a particular consideration (it not being actually known to the administrator), but where it would have been easy for the administrator to have made the inquiries in question and where it was clear that such inquiries would yield relevant information; to cases where the decision is a clearly irrational one; and to cases where, while there was some evidence to support a finding of fact, the finding was not reasonably supported by the evidence.

The 'reasonableness' requirement is not easily defined. However, one thing is clear: behaviour does not become unreasonable only because a court thinks discretion should have been exercised differently. It becomes unreasonable only if the court considers that the exercise of discretion was not reasonably open to the decision-maker. The vagueness of the reasonableness standard means that different judges are likely to apply it differently. That said, it is rare for administrative law applications to succeed solely on the unreasonableness ground.

### 3 Procedure

Emergency legislation includes a small number of procedural provisions, notably in relation to the procedures for declaring states of emergency or disaster. Some

legislation requires consultation before making certain decisions. On the whole, however, the legislation does not prescribe procedures, except—in a rather rudimentary way—in relation to the procedures to be followed by some of the committees it establishes, and—in some jurisdictions—in relation to the commandeering of, and the entry on to, property. An intelligent reader of such acts might well conclude that these exhausted the procedural obligations of those exercising powers under the legislation. The reader would be wrong, although not badly so. Running parallel to statutory rules are what were once known as the common law rules of natural justice, and what are currently known as the procedural fairness requirements. Broadly, these rules relate to the kind of consultations that must take place between a decision-maker and a person who is likely to be affected by the decision, and to the degree to which the decision-maker must be and appear to be a disinterested party.

Where an administrative decision affects a particular person's interests, and where it requires findings of fact by the decision-maker in relation to the person affected, the decision-maker must afford procedural fairness to the person affected. This involves at least two requirements. The first is that the decision-maker give the person affected a chance to make submissions in relation to the decision. The second is that the decision-maker be someone who is and appears to be disinterested. The practical implication of these requirements varies according to context, and is the subject of a vast body of case law. Underlying this case law is what appears to be a form of cost-benefit analysis, involving a weighing up of the interests of the public and the interests of the person affected, coupled with assessments of the degree to which the benefits of particular forms of consultation outweigh their costs. In weighing up competing considerations, courts attach considerable value to the interests of the individual, and to assume that both the general public and the person affected share a common interest in procedures which maximise the likelihood of informed administrative decision-making. However, private interests do not always trump public interests. The balancing exercise affects both whether a person will be found to be entitled to some form of procedural fairness, and the scope of that entitlement, should there be some entitlement.

Some decisions made under emergency legislation are not subject to the procedural fairness requirements. Decisions having general application (such as decisions about the content of a disaster plan or decisions to

close streets to traffic) are not made by reference to the particular circumstances of those who might be affected by the decision. There is therefore no common law requirement that such people be consulted. Other decisions may give rise to a right to procedural fairness. Emergency powers include powers to make decisions which affect particular people, and to interfere with important interests. These include the power to commandeer property, and to exclude and remove people from particular areas. Counting against the existence of a right to procedural fairness in relation to these decisions is the fact that these decisions are such that matters personal to, or uniquely likely to be known by, those adversely affected by the decision will rarely be of much relevance to the decision that ought to be made. However, one cannot rule out the possibility that a decision might be capable of being affected by information about matters about which an affected person would be in a particularly good position to provide relevant information. A person required to assist in tasks to save life or property may know that his own health will be imperiled if he gives such assistance. A householder may know that how floods are likely to affect her house, and this could be relevant to the question of whether she should be evacuated. However, the logic of the cost-benefit analysis is that what may be appropriate for decisions in relation to refugee applications will not be appropriate in relation to emergency decision-making where there may be little time available for administrators to consult affected parties before taking decisions which affect their interests. In a case like this, courts will recognise that it may be more important that an official spend limited time evacuating as many people as possible than that the time be used consulting people as to whether evacuation is appropriate in their case. In the hypothetical case above, the demands of procedural fairness may well be satisfied by the official's listening to her story as he starts bundling her out of the house.

### 4 The effects of failure to comply with the law

Consider the following four scenarios:

- A member of a State Emergency Service destroys a shed in the course of reacting to an emergency. An authorised member has the authority to do this. Unfortunately, the member in question was not authorised.
- The Governor in Council declares a state of emergency in relation to a disaster district. No-one has actually advised the Governor in Council that the measures necessary to deal with the disaster are



beyond the resources of the disaster district co-ordinator. A finding to this effect is a *condition precedent* to the exercise of the power in question.

- The Governor in Council is obliged to appoint a member of a central control group to be chair of the group. Members of the Executive Council are pre-occupied with a forthcoming election. No such appointment is made.

- The executive officer of the central control group tries to ensure that actions instructions pursuant to decisions of the central control group are transmitted to and carried out by bodies to whom they are directed, but is not always successful.

Regulatory legislation rarely makes much provision for what is to happen in the event of an administrator exceeding powers, failing to follow correct procedures, or failing to perform some statutory duty. In exceptional circumstances, breach of a relevant duty will render the offender liable to a criminal sanction. In some cases, irregularities can render an administrator liable to civil sanctions. However, some errors have no such implications. For instance, there may be no criminal or immediate civil liability if the responsible officer fails to prepare a disaster plan or fails to make an appointment to a committee. In these circumstances, people may need to resort to administrative law for a remedy.

The law relating to administrative law remedies can be complex. First, there are some circumstances where legislation appears to deprive people of the right to seek legal redress. Second, there are limits on who may seek redress in response to administrative irregularities. Third, the kinds of remedies available depend on the nature of the irregularity.

#### 4.1 Ouster clauses

Legislation in several jurisdictions contains provisions which, at first sight, seem to limit the right of people to seek judicial review of administrative decisions. Legislation in two jurisdictions precludes proceedings where specified officials have acted 'in the execution or intended execution of this Act or in accordance with any delegation under this Act or in compliance or intended compliance with any direction given or purported to be given under this Act in respect of anything done or omitted to be done in good faith and for the purposes of this Act.' This provision seems to envisage that there may be cases where administrators may exceed their legal powers without being legally accountable for having done so. Provisions of this nature are read narrowly. If, for example, the act was in accordance not with a delegation, but only with a

purported delegation, it would not be protected. Moreover, the act must be both in good faith and for the purposes of the legislation. Acts which are the result of an honest mistake as to the purposes of the Act are therefore not covered by the exemption. The wording of such legislation does, however, seem to envisage that there may be some cases where it is envisaged that there will be no right of legal redress, notwithstanding that officials have exceeded their powers.

An alternative formula is to make decisions final and conclusive. To a layperson, such a provision might seem to preclude judicial review of the decision in question. In fact they do no such thing. They are treated as final only in the sense that once the decision has been made—and assuming it to have been made legally—the decision-maker cannot reconsider the matter. If the decision is legally flawed, however, its legality can be reviewed by a court.

A Northern Territory provision states that: 'The exercise of a power or the performance of a function under this section by a person is conclusive evidence of his or her authority to do so, and no person shall be concerned to inquire whether the occasion requiring the person to do so had arisen or has ceased.' This provision might also appear to make review difficult. However, the requirement that the power be exercised 'under this section' means that a court can inquire into whether that condition has been satisfied, and only if the condition has been satisfied, can the 'conclusive evidence' clause come into operation.

Otherwise, emergency legislation appears to contain no provisions which could be taken as attempts to oust the jurisdiction of courts to review the legality of decisions made under the legislation. It might be possible to design such clauses. However, the hostility of courts to attempts to oust their jurisdiction is such that virtually all such attempts have been interpreted in a manner which has meant that they have failed.

#### 4.2 Standing

A more serious obstacle to a person seeking review of emergency decisions is the 'standing' requirement. The mere fact that someone wants to challenge a decision does not mean that courts will allow them to do so. Courts require that a person have a particular interest in the decision at issue. A resident of a particular area, for instance, could not challenge a decision to allocate resources in a particular way, even if the decision was legally flawed: their interest would be largely indistinguishable from the interests of everyone else in the area. A local government, on the other hand, might be able

to assert a special interest insofar as its resources could be materially affected by such a decision. The rules which determine who may sue and who may not are known as the standing rules. They are complex, and their enforcement involves a considerable element of judicial discretion. They are, arguably, administered with rather less consistency than most rules. This has implications both for administrators and citizens. Administrators should never assume that they will be able to rely on the standing rules to shield them from responsibility for illegality—even where their decisions have general rather than particular effects. Citizens should think twice before seeking to challenge decisions which have general effect. If, for instance, a citizen is upset by the content of a disaster plan, the citizen would be unwise to challenge its legality in the courts. The wise course of action would be to mobilise a body representing the collective interests of those affected—a council or an established interest group. This both makes legal—as well as economic and political sense.

#### 4.3 Remedies

In general when administrators exceed their powers, their decisions are legal nullities, and their acts enjoy none of the protection they would have enjoyed had they fallen within the administrator's powers. Insofar as they fail to follow prescribed procedures, their decisions are nullities except in relation to minor procedural breaches. However, the effect of these rules is complicated by the existence of circumstances in which courts will refuse to make orders in favour of those who are disadvantaged by administrative irregularities. Where administrators fail to comply with their legal obligations, they can be ordered to do so.

##### 4.3.1 Where the administrator has exceeded powers

If people purport to exercise powers which they do not possess, these purported exercises of power are, as far as the law is concerned, of no legal effect. The act has no legal status. If it appears to create duties, those duties are illusory. A person may disregard the duty with immunity. Conversely, if the act would render the administrator liable to legal sanctions in the absence of its having legal justification, the administrator will be liable to these sanctions. These conclusions follow inexorably from the concept of power. This proposition is subject to a gloss. Irrelevant excesses of power do not invalidate decisions. If, for example, a decision would have been the same if the administrator had not acted in excess of power, the decision will continue to be a valid one.

### 4.3.2 Failure to follow prescribed procedures

The position with respect to procedural matters is somewhat more complicated. If full compliance with procedures is a condition precedent to the validity of an administrative act, it follows that failure to comply with those conditions means that the act has no special legal status, a condition precedent to its enjoying that status not having been satisfied. The fact that the failure to comply did not affect the decision is immaterial.

However, not all procedures are such that compliance with them is a condition precedent to the validity of subsequent acts. Administrative law recognises that there are some circumstances where it is reasonable to assume that the legislature would not have intended failure to comply with a particular procedural requirement to be fatal to the validity of subsequent official action. Determining whether this is so in any given case can be difficult. While legislation sometimes makes this clear, legislation is usually silent. Moreover, while we can assume that the prescription of procedures means that the legislature intended them to be followed, it does not necessarily mean that the legislature also intended that the penalty for failure to follow them would be to strip subsequent acts of what would otherwise have been their legal status. Broadly the following considerations are relevant:

- Failure to comply with the procedural fairness requirements will normally be fatal to the validity of a subsequent decision.
- The greater the importance of the power, the greater the likelihood that compliance with the procedural requirements will be treated as a condition precedent to the validity of the decision.
- The weaker the adverse effect of a failure to fulfil a procedural requirement on the likely quality of the decision, the greater the likelihood that the failure to comply with the requirement will not be fatal to the validity of the decision.

### 4.3.3 Failure to perform duties

Most administrative law cases involve complaints that decision-makers have exceeded their powers. It is rare to find complaints that administrators have failed to exercise their powers. There is in fact nothing to stop a person making such a complaint. The application will be for an order that the administrator perform the relevant duty.

Emergency legislation abounds in requirements that particular officials do certain things. The language in which these requirements are expressed varies, sometimes involving the mandatory 'shall', sometimes imperative passives, and sometimes the word 'must'.

Where an administrator has failed to perform a duty, parties with standing can apply for an order that the administrator perform the duty in question. However, courts will not lightly make such orders. First, it is necessary to establish the existence of the duty. Second, it is necessary to establish breach of the duty. Even when an obligation has not been performed, this will not necessarily be taken as amounting to a breach. Failure to perform is to be distinguished from refusal to perform, and only if the latter is established, will courts grant an order to perform. Third, many duties are duties to exercise a discretion. If administrators are ordered to exercise a discretion, the order will amount to no more than that. Courts cannot order that discretions be exercised in particular ways (although they can of course order that they be exercised in accordance with law - or with the law as set out in a judgment).

**Most administrative law cases involve complaints that decision-makers have exceeded their powers. It is rare to find complaints that administrators have failed to exercise their powers.**

### 4.4 Discretionary remedies

The fact that a decision is a legal nullity does not mean that it will formally be recognised as such by the law. Formal recognition requires an authoritative pronouncement from a court, and there are several circumstances in which such pronouncements will not be forthcoming. First, and most obviously, there will be no pronouncement unless someone applies to a court for such a pronouncement. There will be many cases where administrative irregularities go unnoticed by the legal system. Second, there will be cases where courts will hear a case but exercise their discretion to refuse to make an authoritative order. Such exercises of discretion are rare, but they are sometimes made in cases where there has been undue delay in prosecuting the action, and where third parties would be disadvantaged if the court made an order declaring the offending decision to be void.

### 5 The practical irrelevance of administrative law

While it is important to note the ways in which administrative law can bear on the administration of emergency legislation, it

is also important to keep this in perspective. For while administrative law may be relevant, it is rarely mobilised. There are several reasons for this. The first is that there is normally little to be gained from doing so, even if there may well have been an administrative irregularity. Administrative law's response to a finding that there has been an irregularity is normally to declare the relevant decision a nullity. However, by the time the court makes this order, the decision in question will long since have ceased to operate. The flood waters will since have subsided, and the broccoli will be flourishing in the newly-laid silt. The only circumstance in which there will be anything to be gained by a successful challenge to a decision will be where its invalidity means that it ceases to be capable of acting as a defence to a civil action. However, even then, litigation may be a hazardous enterprise. The person aggrieved by the administrator's actions must be able to point to some harm suffered as a result of the administrator's unlawful action. The mere fact that the administrator has acted unlawfully does not of itself give rise to a civil cause of action. A second possibility is that administrative irregularities take place without anyone being aware of them. People may exercise powers, blissfully unaware of the fact that they have never been authorised in writing to do so. Procedural fairness may be denied by exhausted police officers ignorant of the finer points of this technical area of law. The third possible explanation is that those exercising power under emergency legislation normally comply both with the legislation and with the superadded administrative law requirements. There are two reasons why this might be so. Disaster law is an area of law where courts will be somewhat less demanding than usual. Legislation encourages allowing broad powers to administrators. The common sense assumptions and cost-benefit analyses which underlie administrative law decisions indicate that administrators need the power to act quickly. This, however, is not the only consideration. The other explanation must lie in the behaviour of those who exercise the powers. Abuses of emergency powers are evidently not common, and failure to comply with the standards of administrative law are evidently rare. While most of those who are responsible for handling emergencies are probably not administrative law experts, they probably share a sufficient commitment to values which also happen to be administrative law values to ensure that this does not matter too much.



# The Acute Stress Disorder Scale: a tool for predicting Post-traumatic Stress Disorder

A major need in the psychological management of disaster victims is to identify those people who are at risk of long-term psychiatric disorder. The major disorder that develops following a disaster is posttraumatic stress disorder (PTSD). Although most people display PTSD symptoms in the initial weeks after a trauma, more than half of these people recover without any intervention in the following three months (Blanchard, Hickling, Barton, Taylor, Loos, & Jones-Alexander, 1996; Rothbaum, Foa, Rigs, Murdock and Walsh, 1992; Riggs, Rothbaum, & Foa, 1995). Accordingly, there is a demand for measures that assist us to identify those people who will not remit but have a long-term PTSD. It is argued that by early identification of people at risk of PTSD, we can offer treatments in the acute post-disaster phase and thereby prevent PTSD.

In an attempt to identify people at risk of developing PTSD, a new diagnosis of acute stress disorder (ASD) was introduced in DSM-IV (American Psychiatric Association, 1994). To meet criteria for ASD one must experience a stressor and respond with fear or helplessness (criterion A), have at least 3 of 5 dissociative symptoms (criterion B), at least one re-experiencing symptom (criterion C), marked avoidance (criterion D), and marked arousal (criterion E) (see Bryant and Harvey, 1997). Recent prospective studies have indicated that approximately 80% of trauma survivors who initially suffer ASD will meet criteria for PTSD 6 months later (Brewin, Andrews, Rose and Kirk, 1999; Bryant and Harvey, 1998; Harvey and Bryant, 1998) and 75% 2 years post-trauma (Harvey and Bryant, in press).

The introduction of this new diagnosis has raised the need for standardised instruments to measure ASD. The only measure that has been subjected to standard psychometric study is the Acute Stress Disorder Interview (ASDI; Bryant, Harvey, Dang & Sackville, 1998). The ASDI is a structured clinical interview that contains 19 dichotomously scored items that relate to DSM-IV criteria. It possesses sound test-retest reliability over a period of 2 to 7 days ( $\alpha = 0.95$ ), has good sensitivity (91%) and specificity (93%) compared to independent clinical diagnosis, and has been shown to successfully predict subsequent PTSD. The

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only self-report measure of ASD is the Stanford Acute Stress Reaction Questionnaire (SASRQ; Cardeña, Classen and Spiegel, 1991), which has been modified to a 30-item inventory that indexes ASD symptoms (see Stam, 1996). To date, however, there is no available data supporting its utility in identifying individuals who satisfy ASD diagnosis or who subsequently satisfy PTSD criteria.

Accordingly, the aim of this project was to develop a self-report measure that would predict subsequent PTSD. There is a significant need for a validated self-report measure of ASD because structured clinical interviews are often not feasible in the aftermath of large-scale disasters. Self-report measures that permit identification of those acutely traumatised individuals who are at risk of chronic PTSD would provide opportunities for early intervention of people at risk. In developing a self-report measure of ASD, we recognise a number of difficulties. First, the diagnostic criteria of ASD have not been adequately validated (Bryant and Harvey, 1997). Most problematic for the ASD diagnosis is the finding that many acutely traumatised people who do not display dissociative symptoms subsequently develop PTSD (Harvey and Bryant, 1998). Second, the reactive and acute nature of ASD may predispose it to a fluctuating course that may impede accurate and reliable measurement. Third, the ASD criteria permit dissociative symptoms that may occur at the time of the trauma or at any time during the month after the trauma. Retrospective reporting of ASD symptoms has been demonstrated to be inaccurate (Harvey and Bryant, 1999). Considering the limitations of the ASD criteria, the development of this measure recognised the need to identify ASD caseness but also to index the acute precursors of PTSD that may go beyond the current definition of ASD. This paper presents the results of three studies that evaluated the content and concurrent validity, reliability, and predictive ability of the Acute Stress Disorder Scale (ASDS).

## Method

### Participants

Eighty-two (32 male, 50 female) adults of mean age 39.91 years ( $SD = 15.93$ ) participated in this study. These participants represented 77% of the 107 participants who initially completed the ASDS in Study 2. Participants did not differ from non-participants in terms of age, initial trauma-assessment interval, ASD diagnostic status, or ASDS total score. Six (7%) participants had received formal counselling as a result of the fires.

### Procedure

Participants were contacted between six and seven months after the bushfires ( $M = 6.32$ ,  $SD = .31$ ). Each participant was informed that a follow-up assessment was being conducted to evaluate longer-term adjustment to the fires. All assessments were conducted by one of 4 clinical psychologists who were unaware of participants' scores on the ASDS. PTSD was assessed with the Clinician Administered PTSD Scale, Form 2 (CAPS-2; Blake, Weathers, Nagy, Kaloupek, Gusman, Charney and Keane, 1995). The CAPS-2 assesses frequency and severity of each PTSD symptom in the context of the last week, and possesses sound test-retest reliability and strong convergent validity with standard measures of PTSD. Participants were also asked about any therapeutic assistance they had received following the fires.

### Results

Eleven (13%) of the sample met criteria for PTSD at 6-months post-trauma. Table 2 presents the correlation coefficients between the ASDS and CAPS-2 scale scores. The correlation between ASDS scores and PTSD cluster scores was significantly positive for all ASDS cluster scales. The main aim of this study was to determine the extent to which ASDS scores could predict subsequent PTSD. We initially determined predictive ability of an initial ASD diagnosis, based on the ASDS cut-off formula described in Study 1. On the basis of this calculation, 90% of those who developed PTSD were initially diagnosed with ASD, and 80% of those who did not develop PTSD did not present with ASD. Less impressively, false positive diagnoses (individuals who

were diagnosed with ASD but did not develop PTSD) occurred in 58% of cases. False negative diagnoses (individuals who were not diagnosed with ASD who did develop PTSD) was only 2%.

We attempted to increase the effectiveness of the predictive ability of the ASDS by reducing the rate of false positive diagnoses. On the basis of previous findings that acute stress severity can be a more accurate predictor of PTSD than the requirement of acute dissociation (Brewin *et al*, in press; Harvey and Bryant, in press), we investigated the sensitivity and specificity of ASDS total scores in predicting PTSD. Table 2 presents the sensitivity, specificity, predictive values, and effectiveness of the ASDS for five alternative cut-off scores. The optimal cut-off score was 56, which identified 91% of those who developed PTSD and 93% of those who did not. The main flaw with this cut-off was that it falsely identified 33% of people who did not develop PTSD.

### Discussion

The ASDS was developed to provide a self-report measure of acute stress reactions that are precursors of PTSD. There was limited success in predicting PTSD. Although the ASDS cut-off of 56 correctly identified 91% of people who developed PTSD and 93% of those who did not develop PTSD, one-third of participants who scored over the cut-off did not develop PTSD. That is, whereas the ASDS was able to identify virtually all trauma survivors who subsequently developed PTSD, it did not filter these individuals out from a significant proportion who did not develop PTSD. Prospective studies indicate that more than half of people who initially display PTSD symptoms after a trauma recover without any formal intervention (Blanchard *et al*, 1996; Rothbaum *et al*, 1992; Riggs *et al*, 1995). In the light of these findings, the ASDS performed comparatively well because only one-third of people who scored above the cut-off did not meet criteria for PTSD 6 months later. It appears that the ASDS may serve a useful purpose as a self-report instrument to identify those people who are at risk of developing PTSD. The results of the ASDS should be supplemented, however, by clinician assessments to more accurately identify acutely traumatised individuals who are at risk of developing PTSD.

It is interesting to compare the ability of the ASDI and ASDS to predict PTSD 6-months post-trauma. The reported sensitivity and specificity of the ASDI is over 90% (Bryant and Harvey, 1998; Harvey and Bryant, 1998), which is comparable to the current findings with the ASDS. The rate of false positive identifications of the ASDI has

Acute Stress Disorder Scale					
	Total	Dissociation	Re-experiencing	Avoidance	Arousal
CAPS-2					
Total					
Frequency	.65	.37	.71	.96	.67
Intensity	.66	.42	.72	.44	.66
Re-experiencing					
Frequency	.63	.36	.72	.40	.64
Intensity	.68	.44	.75	.47	.66
Avoidance					
Frequency	.62	.39	.65	.45	.62
Intensity	.65	.42	.68	.45	.64
Arousal					
Frequency	.62	.33	.68	.41	.66
Intensity	.61	.37	.67	.38	.62

Note: All correlation coefficients  $p < .001$ . CAPS-2 = Clinician Administered PTSD Scale, Form 2.

Table 1: Correlation coefficients of Acute Stress Disorder Scale scores and CAPS-2 scores

ASDS Score	Sensitivity	Specificity	PPP	NPP	Efficiency
50	.83	.86	.50	.97	.85
52	.91	.86	.50	.98	.86
54	.91	.89	.56	.98	.89
56	.91	.93	.67	.98	.93
58	.55	.93	.55	.93	.89

Note: PPP = positive predictive power, NPP = negative predictive power.

Table 2: Predictive values of ASDS scores for identifying subsequent PTSD

been between 18% and 22%, compared to the current rate of 56% when the ASD diagnostic cut-off is adopted, and 33% when the ASDS total score cut-off is adopted. That is, the structured interview was more effective than the ASDS in filtering out those acutely distressed individuals who did not subsequently suffer persistent PTSD. This pattern is consistent with proposals that structured interviews are more effective tools than self-report measures, and suggests that self-report measures of acute stress reactions should be interpreted cautiously.

Future research with the ASDS should index its ability to predict PTSD across a range of trauma populations. It is possible that developing a self-report measure that identifies acutely traumatised people whose symptoms will not remit will remain a difficult task because of the tendency for most people to recover in the months after a trauma. Early treatment of trauma survivors with ASD can effectively prevent PTSD in many cases (Bryant, Harvey, Sackville, Dang and Basten, 1998). Accordingly, development of screening instruments that facilitate identification of people who will develop PTSD can have significant implications for managing traumatised populations.

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# Register Now for the Australian Disaster Conference 1999

**R**egistrations for the *Australian Disaster Conference 1999*, to be held at the National Convention Centre in Canberra from 1-3 November, are **now** open.

The conference, with the theme of *Disaster Prevention for the 21<sup>st</sup> Century*, is being hosted by the Australian Coordination Committee for the International Decade for Natural Disaster Reduction (IDNDR).

The Chair of the Committee and Director General of Emergency Management Australia, Mr Alan Hodges, said this landmark 3-day conference would act as a catalyst for establishing a program for disaster prevention for the 21<sup>st</sup> Century.

The conference, with sponsors the Australian Geological Survey Organisation, the Bureau of Meteorology, EMA, AUSLIG, and AON Re Australia and partners the Institution of Engineers and AURISA offers:

- keynote and shorter presentations on a wide range of hazards by emergency management practitioners, policy-makers and researchers

- open forums
- interactive discussions
- poster sessions.

Mr Hodges said all sessions would emphasise the importance of disaster mitigation, community participation, duty of care obligations, and the roles of government, non-government and private organisations, and the general community.

'The conference provides an unique opportunity for a wide cross-section of the emergency management community to present their ideas and to influence the course of emergency management in Australia in the next millennium', Mr Hodges said.

## Registration fees

All bookings for the conference should be made by 1 October 1999.

Registration is \$495. Special rates may be offered to full-time students.

To receive your *Australian Disaster Conference 1999* registration brochure, which includes the registration form, contact:

Conference Logistics  
PO Box 505  
Curtin ACT 2605, Australia  
Phone: +61 (0)2 6281 6624  
Fax: +61 (0)2 6285 1336  
Email: [conference@conlog.com.au](mailto:conference@conlog.com.au)  
or visit the conference web site:  
[www.ema.gov.au/conference.htm](http://www.ema.gov.au/conference.htm)

## Conference aims

- To provide a forum for all those dealing with disasters to review the current position of disaster management
- To establish where emergency management should be in the 21st century in terms of disaster prevention
- To identify significant gaps in knowledge and required actions and strategies to reach that position.

**Mon 1 Nov 1999**

### 0900-0910 Welcome address

Mr Alan Hodges, Director-General, EMA and Chair, Australian IDNDR Coordination Committee

### 0910-0930 Official opening

### 0930-1030 Keynote speaker

Mr Philippe Boullé, Director, United Nations IDNDR Secretariat

### 1100-1230 Managing risk at Local Government level

**The application of the Australian Emergency Risk Management Standard applied to bush fire management in NSW - a case study** Debbie Pinfold, NSW Rural Fire Service, Stuart Midgley, NSW Rural Fire Service Association, Paul Demar, State Forests of NSW

**How far do bushfires penetrate urban areas?** Andrew Ahern, Aon Re Worldwide, Mark Chladil, Tasmania Fire Service

**Recognition and responsible development of unstable land** Ingles, O.G., Pedersen, A.M., Owen Ingles Pty Ltd

**Flash flood warning services - what the Bureau can do for you** Hugh Bruist, Bureau of Meteorology

**Reducing tropical cyclone impacts: The Tropical Cyclone Coastal Impacts Program (TCCIP)** Rex Falls, Bureau of Meteorology, Ann Henderson-Sellers, Australian Nuclear Science & Technology Organisation, Greg Holland, Bureau of Meteorology Research Centre, Rod McKinnon, Emergency Management Australia, Lesley Galloway, Queensland

Department of Emergency Services, Kendal McGuffie, University of Technology, Sydney

### Cyclone risk assessment of houses in North Queensland

David Henderson, Greg Reardon, Cyclone Structural Testing Station

**Tropical cyclone awareness and preparedness in Northern Australia's tourist industry** Linda Berry, James Cook University of North Queensland

### Assessing Geohazards Risk

**Models for seismic hazard assessment in Australia** Kevin McCue, C Sinadinovski, M Somerville, AGSO Seismological Centre

**Monitoring of geological hazards in New Zealand** Robin Falconer, Institute of Geological and Nuclear Sciences Ltd

**Applications of the uniform-hazard site-specific acceleration response spectrum in Pacific cities** M Regnier, IRD Noumea, G Shorten, SOPAC Suva, A Shapira, Geophysical Institute of Israel

**Earthquake mitigation strategies in Australia and IDNDR RADIUS** Jack Rynn, Centre for Earthquake Research in Australia, Brisbane, Kenji Okazaki, United Nations IDNDR Secretariat, Geneva

### 1400-1445 Keynote Speaker

Bruce Esplin, Victorian Department of Justice

1450-1530 Insuring for Risk

Risk assessment from a global viewpoint Sven Ehrlicher, Munich Reinsurance Company

Flooding risk assessment and application in underwriting Hao-Ming Zhou, ERC Asia Pacific Pty Ltd, Singapore

Involving the community in Disaster Reduction

Involving citizens in hazard mitigation planning: Making the right choices Raymond Burby, University of New Orleans

Community participation in disaster management N A Karanci, B Aksit, Middle East Technical University, Turkey

Assessing Geohazards Risk (continued)

Mitigation Measures for Tsunami in Australia and its Island Territories Jim Davidson, Bureau of Meteorology, Jack Rynn, Centre for Earthquake Research in Australia

Tsunami disaster at Sissano, Papua New Guinea: In search of the cause and assessing the risk by multibeam sonar and remotely operated vehicle Peter Hill, Kevin McCue, Australian Geological Survey Organisation, Wilfred Lus, Research School of Earth Sciences, ANU

1600-1700 Developing hazard vulnerability indices

A new damage intensity scale: Australian experience Russell Blong, Natural Hazards Research Centre, Macquarie University

0900-0945

Keynote speaker

Ken Granger, Director, Cities Project, Australian Geological Survey Organisation

0950-1030 Applying technology to risk assessment

Floodplain inundation risk model Laraine Hunter, Russell Blong, Natural Hazards Research Centre, Macquarie University

Risk-GIS: Assessing the risk with visualisation Greg Scott, Ken Granger, Trevor Jones, Marion Leiba, Australian Geological Survey Organisation

Reducing disasters through the school curriculum

Making a deep impact - awareness in schools Susan Rogers, Nelson-Tasman Emergency Management Office, New Zealand

Disaster prevention - education is the key Gary Lewis, Australian Geological Survey Organisation

Reducing and responding to disasters in the Sth Pacific Incorporation of mitigation strategies into Pacific national government and non-government systems

Atu Kaloumaira, Disaster Management Programme, UNDP/SOPAC, Fiji

Water - Too Little, Too Much; Fiji's recent experiences of drought and flood A Tuifagalele, National Disaster Management Office, Fiji

1100-1230 Applying technology to risk assessment (cont.)

What is the earthquake risk in Australian cities?

Trevor Jones, Ken Granger, Greg Scott, Australian Geological Survey Organisation

New approaches to assessing community vulnerability and resilience

Philip Buckle, State Emergency Recovery Unit  
Composite Vulnerability Indicator (CVINDICATOR): a dynamic tool for urban planning through Multi Hazard Vulnerability Analysis Approach

Ruffina S Thilakaratne, Faculty of Architecture, University of Hong Kong

Involving the community in disaster reduction - Bushfire

Understanding community responses to the threat of disaster Samantha Reinholdt, Alan Rhodes, CFA

Community preparedness for the threat of disaster Samantha Reinholdt, Alan Rhodes, CFA

Community response to a bushfire threat Patricia Brennan, CESARE, Victoria University of Technology

Responding to disasters - the Human Point of View

Fire? What about my patient? Melissa Neary, Redcliffe Hospital

Registration and inquiry - where to from here? Roberta Liddell, Australian Red Cross

Katherine 1998: Appeals and self-sufficiency - lessons for the future Bill Wilson, Australian Red Cross

Spatial data issues Rick McRae, ACT Emergency Services Bureau

Satellite remote sensing for flood mapping Adrya Kovarch, David Moore, Geo Mapping Technologies Pty Ltd

Postmortem: lessons learnt from a hazardous GIS research project Andre Zerger, University of Melbourne

Reducing disasters through community awareness and education

The future of education and training in Emergency Management Dudley McArde, Emergency Management Australia

Collaborative research on public education needs produce initial results Barry Wallace, Manukau City Council, David Allen, Auckland City Council, Ian Wood, Auckland Regional Council, Curt Christiansen, Kowhai Communications, New Zealand

The appraisal of information material on disaster preparedness Bernd Rohrmann, University of Melbourne

A social marketing framework for the development of effective public awareness programs Joan Young, Colmar Brunton Social Research

Reducing landslide and hail risk

Quantitative landslide risk assessment of Cairns, Australia Marion Michael-Leiba, Greg Scott, Australian Geological Survey Organisation, Fred Baynes, Consulting Engineering Geologist

Geotechnical management of 148 landslides triggered by a major storm event in Wollongong P Flentje, R Chowdjury, University of Wollongong

Hailstorm risk assessment in NSW R Leigh, I Kuhnel, Natural Hazards Research Centre, Macquarie University

**Tues 2 Nov 1999**

**Hailstorm risk assessment in rural NSW** Heather McMaster, Natural Hazards Research Centre, Macquarie University

**1400-1500 Plenary session**  
**National mitigation strategies**

**1540-1700 Applying technology to risk assessment (cont.)**

**Improving the accessibility of emergency management information** Jonathon Root, Greg Scott, Australian Geological Survey Organisation

**Uses and limitations of socio-economic indicators in measuring vulnerability to natural hazards** David King, James Cook University, Townsville and Cairns

**The use of remote sensing and GIS technology by NSW Agriculture for emergency management** P Worsley, J Bowler, D Freckelton, I McGowen, U Pradhan, R Roger, M Worsley, NSW Agriculture

**The development of dynamic and integrated expert system to help communities to cope with disaster** J Cross, A Green, V Z Lu, University of NSW

**Wed 3 Nov 1999**

**0900-0945 Keynote Speaker**

John Zillman, Director, Australian Bureau of Meteorology and President, World Meteorological Organisation

**0950-1030 Applying technology to community disaster awareness**

**Disaster information on the Web: providing an efficient index to current and reliable information** E B Joyce, VIEPS, University of Melbourne

**Learning from the Newcastle experience – Information resources for earthquake awareness** Ajita Lewis, Newcastle Region Library

**Outsourcing, corporatisation, privatisation and risk**

**Privatising warning and response services** John Handmer, Middlesex University

**Reducing volcano risk – the New Zealand Experience**

**Recovering from disaster: pre-event policy considerations** Steven Jensen, Wellington Emergency Management Office, New Zealand

**Community vulnerability to volcanic hazard consequences** Marian Millar, Douglas Paton, Massey University, David Johnston, Institute of Geological and Nuclear Sciences, New Zealand

**1100-1230 Community disaster awareness – international case studies**

**Community-based earthquake hazard mitigation: some Middle Eastern perspectives** Martin Degg, University College Chester, UK

**Raising awareness of natural disaster in Third World communities: a case study from Egypt** Jacqueline Homan, University of Birmingham, UK

**Bhopal gas tragedy: could it have happened in a developed country?** J Gupta, Indian Institute of Technology, India

**Reducing flood risk**

**A review of Australian flood disaster in 1998** Stephen Yeo, Natural Hazards Research Centre

**Floodplain management reform in Victoria and the development of the State Flood Strategy** Ian Gauntlett, Department of Natural Resources & Environment, Victoria

**How to capture the benefits of a flood warning?** C Wright, Bureau of Meteorology, Adelaide, D Smith, CRES, Australian National University

**Analysis of insurability for flood** George Walker, Aon Re Australia

**Preparing for Response – the Emergency Management View**

**Managing the paradox of disasters** Christophe Roux-Dufort, EDHEC Graduate School of Management, France

**Post Disaster Assessment – A key element in disaster response** Joe Barr, Pacific Emergency Management Associates Pty Ltd

**Linking the three 'R's of Risk, Resources and Response** Stuart Ellis AM, South Australian Country Fire Service

**An information-based model for emergency management** Savyesh Gupta, NSW Fire Brigades

**Education and training for disaster prevention and impact reduction in India** D P Singh, PSS Central Institute of Vocational Education, India

**Responsibilities for continuity planning for businesses and service providers**

**Assessment of geohazards and associated risks for contingency planning** P Itiogen, Papua New Guinea University of Technology

**Results of the Macquarie 1999 Survey of Business & Computer Contingency Planning in Australia** David Musson, Ernest Jordan, Graduate School of Management, Macquarie University

**The buck stops here: a plan for recovery** Heather Mansell, State Library of New South Wales

**Preventing disaster by building a risk-prevention ethic into corporate governance** Rick Sarre, University of South Australia, Meredith Doig, RMIT

**Reducing risk – other hazards**

**Reducing the impact of major droughts in the Indonesian-Australian Region through the monitoring of atmospheric pressure anomalies in the preceding year** David Stephens, Agriculture Western Australia, Mal Lamond, Weather Services

**The aliens are here** Richard Sharp, Environment Australia

**Advances in fire design of public buildings in Australia** Philip Sanders, Steel Reinforcement Institute of Australia

**Civil protection against incident involving weapons of mass destruction** John Houpt, Joint Applications Development Enterprises International, USA

**1400-1545 Forum on the future – directions and research priorities for disaster prevention in the 21<sup>st</sup> Century**



# Redundancy as requirement: lessons from the 1997–98 Peruvian El Niño disasters

A nation's preventative measures and ability to respond are always tested when calamity strikes. The resiliency of mitigative works and quality of relief operations undoubtedly determine the effectiveness of disaster preparedness and efficiency of emergency management. What is sometimes neglected is the importance of having multiple means available to more adequately confront, absorb and react to the problem. Calvin Streeter addresses this important issue in his 1991 article. He discusses the concept and theory of 'redundancy', and also highlights the implications that an 'excess capacity' may have on warning and evacuation planning. In spite of his significant contribution to the literature, the field has not, to my knowledge, followed up with empirical investigations on this subject.

The following situation report is written with the intent of partially filling this gap in the discipline by utilising the Peruvian El Niño flooding and mud slides as a case study. This recent event in South America will be drawn upon to reiterate—in a heuristic manner—that redundancy is necessary for nations to successfully reduce calamitous events and their adverse consequences. Information was obtained when the author visited Peru in February 1998. Relevant findings were gathered from personal interviews, phone conversations and personal correspondence with scientists, program managers and others within the disaster prevention and relief community. Newspaper articles and electronic documents were also utilised in this investigation.

In attempting to make my argument, I will provide background information about the El Niño disasters in Peru; discuss why redundancy is critical in works of prevention, systems and forms of transportation, institutional and actor response, and emergency communications; and highlight the implications of this study for disaster management at the domestic level and for those actors involved in disaster prevention and relief around the world.

## Background to the Peruvian El Niño Disasters

Commonly referred to as El Niño ('the Child' in Spanish) due to its typical appearance when the birth of Christ is observed, the Pacific Oscillation Phenomenon is an oceanic and atmospheric disturbance that results in the alternating appearance of warm and

by David A. McEntire,  
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Public Administration, Emergency  
Administration and Planning

then cooler sea surface temperatures off the Western shores of Latin America. While the exact causes of this recurring climatic fluctuation remain to be deciphered, scientists have determined that El Niño's ocean currents and accompanying wind are affecting weather patterns around the world. This was especially true in 1997–98, as the ocean temperatures off the coast of Peru were higher than what has previously been recorded. In fact, the recent El Niño has been regarded as being very severe, a Mega Niño, or even the climatic event of the century.

Although the impact of the Pacific Oscillation Phenomenon is global, Peru is generally numbered among those countries which are most severely affected. Several types of disasters agents are common in this developing nation during stronger El Niño episodes. These include flooding and mud slides due to an excessive amount of rainfall, sea surges emanating from strong ocean currents and wind, and drought owing to the lack of precipitation. The first two of these agents were mainly prevalent in the North, the second along the coast, and the third exclusive to the South. While the effects of the sea surges and the consequences of drought have been minimal, the flooding and mud slides certainly left behind an incredible amount of devastation. Besides the fact that physical damages are in the millions of dollars and that Peru's goals for economic development are now suddenly set back, it has been estimated by a local research institution that 374 people have lost their lives, another 412 have been injured, and close to 600,000 have been affected in one way or another by the disasters.

While the Fujimori government and other actors from the international humanitarian community worked diligently to prepare for and respond to El Niño, weaknesses associated with prevention projects and challenges in relief operations became apparent. Many of the obstacles had to do with the lack of redundancy.

## Redundancy in prevention

The 1997–98 Pacific Oscillation Phenomenon demonstrates the importance of an excess of preventative and mitigative works in Peru. This can be seen in those areas where

such measures were undertaken as well as in those where they were not. On the positive side, the Fujimori administration undertook a massive preparation campaign in Northern Peru after the IDNDR Consultive Council confirmed in the Summer of 1997 that El Niño would affect the country six months later. Some of the numerous projects of prevention included dredging canals, cleaning and expanding drainage systems, building retention walls, reinforcing bridges and constructing dikes. This focus on prevention lies in stark contrast to the deficiency thereof in 1982–83. Consequently, the Fujimori administration was credited for being the first government in Peru to take hazards seriously and for mitigating a series of disasters that would have otherwise been even more destructive.

Nonetheless, the modest success in the North was somewhat diluted by the apparent failure to prepare in the South. Basing its preventative policies on its experience with the 1982–83 El Niño, the government did not expect flooding to be a problem outside of the Northern departments. However, several cities in Southern Peru were also adversely affected by the considerable amount of precipitation. For example, the city of Ica was inundated in the final days of January 1998. At least 15,000 houses (many of them constructed of adobe) were destroyed or partially damaged, and close to 120,000 people were victimised by a local river that overran its banks. What made the disaster particularly tragic is that it could have been averted or at least minimised. Several scientists in Peru have acknowledged that each El Niño is different, and that Southern portions of the country have received abnormal amounts of rainfall in previous episodes. Local political leaders also notified the central government of the impending threat. Unfortunately, this knowledge was either insufficiently disseminated or ignored, and recommended works of prevention were not undertaken. Thus, the disasters in Peru indicate that redundancy in prevention is important for two reasons. Large quantities of mitigative works help to minimise the destructive consequences of nature and may also reduce the effects of human miscalculation or error.

## Redundancy in transportation

The disasters in Peru likewise reveal why redundancy in transportation is critical to

reduce the effects of disaster and ensure an effective response. One of the most visible evidences of El Niño's destructive power was in the area of the infrastructure. Flooding and mud slides washed away hundreds of miles of road and scores of bridges, especially in Northern Peru. The interruption of these vital lifelines of society left many cities isolated which had numerous adverse consequences. The first and most obvious effect was a disruption of economic activity. Tourism, mining, commerce and other industries which rely on transportation suffered heavy losses due to El Niño's devastation. The agricultural sector was particularly hard hit as produce frequently rotted on trucks as drivers waited for roads to be repaired. Thus, food which was not originally destroyed by the flooding or drought could not be distributed, thereby contributing further to the overall scarcity and subsequent higher prices. Second, and also because power and phone lines were down, communication was reduced, if not completely eliminated, among neighboring communities. A few newspapers even ran stories about political leaders in smaller pueblos that had no choice but to travail mountain passes and cross swollen rivers if they were to relay disaster needs to neighbouring municipals. The inaccessibility of diverse locations was certainly to blame for the slow response by the central government. Third, and most importantly, the damage sustained by the infrastructure meant that relief could not always be transported by ground to those areas which required it. Luckily, other means were used to send aid to the victims of El Niño. For example, the Navy delivered relief supplies to cities on the coast. In addition, planes and helicopters were utilised by the air force and civil defense to distribute necessary supplies to other hard-to-reach areas. It is evident, therefore, that an increase in the numbers of routes to and from cities is advisable, and that various forms of transportation are necessary if a society is to function normally and deliver aid after disaster.

### **Redundancy in institutional and actor response**

The disasters in Peru indicate furthermore why differing levels of government and a plethora of humanitarian actors must be able to respond to disaster. Like many administrations in developing nations, the Fujimori government is very centralised. When flooding and mud slides began in December of 1997, the Presidential Ministry had little difficulty in overseeing the relief and reconstruction operations. As the El Niño phenomenon proceeded, calamities began to increase in number and soon

appeared in diverse locations throughout the country. In spite of this onslaught, Fujimori refused to delegate disaster assistance to regional and local levels, and continued handing out aid in a very politicised fashion (for which he was harshly criticised). With time, however, the number of hazardous events overwhelmed the national government and Fujimori recognised his command and control system was in trouble. But, at this juncture, local politicians and bureaucrats were in no position to take over the post-disaster responsibilities. As was mentioned previously, department and municipal leaders were geographically isolated which hindered the delivery and sharing of emergency resources. Moreover, these officials were politically weakened and lacked resources anyway as Fujimori had previously consolidated power in order to more successfully wage Peru's war against terrorism. Therefore, when the national government finally recognised it would have to decentralise due to the disasters, it was too late. Regional and municipal institutions were either not in place or weakened at local levels. Governmental activities in the areas of relief and reconstruction were consequently regarded as being insufficient in several departments.

To make matters worse, civil society was not completely capable of taking up the slack made evident by the government. According to one respondent, the social fabric in Peru is very weak and the inability of the private sector to respond to disaster is a direct result of the government's fear that any type of association involves terrorist activity. While this observation invites further investigation, there is little doubt that the poverty, illiteracy and fatalistic culture in this developing country discourage private disaster prevention and relief activities. Fortunately external aid for relief and reconstruction was contributed from both governmental and non-governmental sources which made up for internal shortages. Thus, the lesson to be gleaned from this section, is that all levels of government, and both internal and external actors must be able to respond to calamity in developing nations. This is especially the case when disasters are large, numerous or geographically dispersed.

### **Redundancy in communication**

A final lesson from the catastrophes in Peru concerns the importance of possessing alternative means of relaying information in emergency situations. Without a doubt, modern technology is used extensively to communicate when disaster strikes, and the Peruvian El Niño was no exception. All of the emergency managers and NGO relief coordinators that were interviewed stated

that two-way radios, cell phones, pagers, computer e-mail, and fax machines were crucial to their disaster response operations. The strengths of these types of equipment include ease of use, speed of transmission and portability. But there are some drawbacks to these types of equipment that must be recognised. For instance, my field research indicates that two-way radios may be limited due to range of reception and time of operation, cell phones and pagers are inoperable at times due to location, and computers and fax machines become useless when power and phone lines are down. It appears, therefore, that the weakness of one form of communication can only be overcome by acquiring other instruments to convey information. Consequently, redundancy in communication is also important when disaster strikes.

### **Implications of this study**

The central lesson to be drawn from this investigation of the recent Peruvian El Niño is that quantity counts. Creating an 'excess capacity' undoubtedly increases the probability of successful prevention strategies while also facilitating the effectiveness of humanitarian operations. Numerous works of prevention mitigate the destructive power of nature and minimise the consequences of human error. Alternative routes and forms of transportation reduce the effects of catastrophes and ensure emergency access to victims in remote disaster sites. Enabling each level of government to respond to hazards, and having other domestic and international actors as partners facilitates timely and adequate relief operations. Finally, increasing the means of communication guarantees the continuous transmittal of crucial information about a disaster situation.

Do these conclusions imply that redundancy in disaster prevention and response is without drawbacks? Certainly not. Streeter points out that practitioners must come to understand how much is too much, or at what point the costs of redundancy overrun its benefits. Nonetheless, if the findings of this paper are accurate, then the importance of providing emergency managers with increased resources cannot be overstated. Monies, materials, and energies devoted to the disaster-reduction cause are investments well spent. Furthermore, this research provides additional reasons why industrialised countries and NGOs at the international level should maintain or increase the amount of development and disaster assistance they provide to nations of the Third World. Most of the poorer nations are not, as of yet, in a position to go it alone in their attempt to combat disaster.

In conclusion, we live, as Streeter notes, in a world of surprises and uncertainty. Works of prevention sometimes fail, disaster sites are not always be accessible, a single entity is never capable of responding alone, and communication systems are not consistently foolproof. If disasters are to be minimised therefore, redundancy, in its many forms, will be required.

David A. McEntire is a PhD candidate at the Graduate School of International Studies, University of Denver. A student of International Relations, Comparative Politics and Policy Analysis, his academic focus is in the area of disaster relief and mitigation in developing nations. David is currently working on his dissertation, which critiques the concept of sustainable development and suggests the

need for a more comprehensive disaster reduction policy and paradigm that specifically addresses the vulnerabilities created by numerous physical, social, political, cultural, economic, technological and developmental variables.



## Disaster Events Calendar

**15-17 October 1999**

**Melbourne, Victoria, Australia**

**1999 AFAC Annual Conference**

Contact:

AFAC 1999 Melbourne Conference

Co-Ordinator

Roz Long

CFA, PO Box 701, Mt Waverley, Vic, 3149

Tel: (61 3) 9262 8334; Fax: (61 3) 9264 6200

E-mail: r.long@cfa.vic.gov.au

WWW: <http://www.ausfire.com>

**27-29 October 1999**

**London**

**Dealing With Natural Disasters :  
Achievements and New Challenges in  
Science, Technology and Engineering**

It is timely to review the significant progress that has been made in the STE aspects of disaster reduction, to point the way forward to new development and to set out the new challenges for practitioners in this field. Subjects that will be discussed at the meeting include drought, flood, seismic and volcanic disaster mitigation.

Contact:

Mrs Tina Brown, The Royal Society,

6 Carlton House Tce, London SW1Y 5AG

Tel: +44 (0) 171 451 2591/2585

Fax: +44 (0) 171 451 2692

WWW: [www.royalsoc.ac.uk](http://www.royalsoc.ac.uk)

**30-31 October 1999**

**Cairo, Egypt**

**Fourth Annual Conference on Crises and  
Disasters Management**

Sponsor: Crisis Research Unit, Ain Shams  
University.

Contact:

Prof. Mohammed Rashad El-hamalawy,

Crisis Research Unit, Ain Shams University,

Abbasia, Cairo, Egypt

Tel: (02) 2619509 Fax: (02) 4025905/2609167

**1-3 November 1999**

**Canberra, Australia**

**Australian Disaster Conference 1999:  
'Disaster Prevention for the 21<sup>st</sup> Century'**

Planning is currently underway for this conference, which will serve as one of the final summary conferences of the International Decade for Natural Disaster Reduction.

Contact:

Conference Logistics

PO Box 505, Curtin, ACT 2605

Tel: 02 6281 6624 Fax: 02 6285 1336

E-mail: [conference@conlog.com.au](mailto:conference@conlog.com.au)

**1-4 November 1999**

**Sydney, Australia**

**Third Canada/Australia/US Fire Safety  
Summit**

Contact:

Maria Greenlee

International Association of Wildland Fire,  
East 8109 Bratt Road, Fairfield, Washington  
99012; (509) 523-4003 Fax: (509) 523-5001

E-mail: [greenlee@cet.com](mailto:greenlee@cet.com)

**2-5 November 1999**

**Sydney, New South Wales, Australia**

**International Association of Wildland  
Fire (IAWF) 1999 Wildland Fire Safety  
Summit: 'What Have We Learnt From  
Major Wildfire Disasters?'**

Contact:

IAWF

East 8109 Bratt Road, Fairfield, WA 99012

Tel (509) 523-4003 Fax: (509) 523-5001

E-mail: [greenlee@cet.com](mailto:greenlee@cet.com)

WWW: [http://www.wildfiremagazine/  
safetysummit.shtml](http://www.wildfiremagazine/safetysummit.shtml)

**10-12 November 1999**

**Hobart, Tasmania**

**Fire Australia 1999, incorporating the  
Seventh Asia-Pacific fire trade fair.  
Buildings, boats and bushfires**

Contact:

Amy Maney, Conference Secretariat

Fire Protection Association Australia

PO Box 1049, Box Hill, Victoria, 3128

Tel: +61 3 9890 1544; Fax: +61 3 9890 1577

E-mail: [amyh@fpaa.com.au](mailto:amyh@fpaa.com.au)

**13-19 November 1999**

**Jindabyne, New South Wales, Australia**

**ANCOLD Conference on Dams: 'Dams:  
Environmental, Community and  
Business Challenges'**

Contact:

Jack Grimstad, The Convener ANCOLD 99,

SMHEA, PO Box 332, Cooma, NSW 2630

E-mail: [jgrimstad@snowyhydro.com.au](mailto:jgrimstad@snowyhydro.com.au)

**30 January-4 February, 2000**

**Twelfth World Conference on Earthquake  
Engineering**

Sponsor:

New Zealand Earthquake Commission and  
others, Auckland, New Zealand 2000.

Contact:

12WCEE Organizing Committee

Michael Brice

Administrative Secretary

New Zealand National Society for

Earthquake Engineering

P.O. Box 312, Waikanae, New Zealand

Tel/Fax: 64-4-293-3059;

E-mail: [12wcee@cmsl.co.nz](mailto:12wcee@cmsl.co.nz)

WWW: <http://www.cmsl.co.nz/12wcee>

Also see: [http://www.eeri.org/Meetings/  
12WCEE.html](http://www.eeri.org/Meetings/12WCEE.html)

**25 February-2 March 2000**

**Arlington, Virginia**

**National Emergency Management Assoc-  
iation (NEMA) Mid-Year Conference**

Contact:

National Emergency Management Assoc.

P.O. Box 11910, Lexington, KY 40578-1910

Fax: (606) 244-8239

E-mail: [themebree@csg.com](mailto:themebree@csg.com)

WWW: <http://www.nemaweb.org>

**21-25 May 2000**

**Tokushima, Japan**

**Eighth International Conference of the  
Natural Hazards Society**

Contact:

Natural Hazards Society

PO Box 49511, 80 Glen Shields Avenue

Concord, Ontario, Canada L4K 4P6

WWW: <http://www.es.mq.edu.au/NHRC/NHS>

**28-31 August 2000**

**Reykjavik, Iceland**

**4th International Conference of Local  
Authorities Confronting Disasters and  
Emergencies**

Contact:

The Union of Local Authorities in Israel,  
3 Heftman Street

PO Box 20040, Tel Aviv 61200, Israel

Tel: +972-3-695-5024 Fax: +972-3-691-6821

E-mail: [ulais@netvision.net.il](mailto:ulais@netvision.net.il)

WWW: <http://www.ladpc.gov.il>

# Improving the management of emergencies: enhancing the ICS

by Julian Yates

**R**are indeed is the emergency that a single emergency service can manage totally independently without some form of cooperation or assistance from other emergency services or supporting agencies. At many incident scenes, two, three or more agencies must work together cooperatively to provide the emergency response.

Achieving the necessary level of cooperation between agencies can be problematic: each will have developed its own unique operating procedures, protocols and methods for managing their response to emergencies. The result can be unnecessary confusion, doubt, duplication and missed opportunities.

As an attempt to overcome these problems, in the late 1980's, the then Australian Association of Rural Fire Authorities (AARFA, 1989) introduced the Australian Inter-service Incident Management System (AIIMS). The core of the AIIMS is the Incident Control System (ICS) that aims to provide an integrated structure to manage the response to any emergency incident that can be used by any organisation involved in the response. The AARFA (1989, p. 6) promoted the AIIMS as enabling 'managers to more effectively utilise the combined resources of co-operating fire and emergency services'.

In the decade since introduction of the AIIMS, its acceptance and use has not been without controversy and debate. The author clearly remembers a heated debate at the Australian Institute of Emergency Management between two senior officers on the merits or otherwise of the ICS. One was a senior police officer and the other a senior fire officer, both from the same state. The fire officer argued passionately on the merits of the AIIMS ICS, while the police officer was equally adamant in his statements on its faults. The debate continued off and on for several days without resolution.

The purpose of this article is to present a case for introducing an enhanced model of the ICS component of the AIIMS that has the potential to overcome some of the concerns held by emergency managers on the functionality of the ICS, both here in Australia but also internationally.

To achieve this, the first step will be to examine the origins of the ICS and its adoption in Australia, discuss its key features

and identify some key issues that it does not, in its present form, adequately cater for and then present an enhanced model for consideration. The enhanced model, it will be argued, offers considerably improved functionality without losing any of the key features of the ICS and does not require significant change to existing ICS training, nomenclature or procedures. Because the model is based on an enhancement implemented in California, it will also be argued that it has been proven through overseas experience.

## Origins of the ICS

Problems with the absence of integrated management systems for emergencies and disasters were highlighted by series of wildfires in California in the late 1960s where deficiencies in management systems for multi-agency responses were identified (Coile, 1996). As a result, a system for managing the response to emergencies when multiple agencies were involved was developed. This system was known as the Incident Command System or ICS. The ICS envisaged a single Incident Commander supported by four functional sections: operations, planning, logistics and finance.

The importance of developing the ICS to the United States can be found in its system of providing emergency services. Unlike Australia, in the US many emergency service agencies are provided by municipal councils as well as by the state and federal governments. The US Department of Justice (1998) estimates that there are over 18,700 state and local law enforcement agencies, while the United State Fire Administration (1999) reports over 30,000 fire departments nationwide. The result of this is that multi-agency responses to emergencies are very frequent. It is not uncommon to have several separate police forces, fire services and ambulance agencies all responding. Without a common incident management system, the potential for chaos was high.

By 1980, the Californian ICS had been widely adopted by fire departments and had become part of a national initiative called the National Interagency Integrated Incident Management System or NIIMS (National Response Corporation, undated). The use of the ICS received statutory backing

when US Federal Law required its use for the response to hazardous materials emergencies (Federal Emergency Management Agency, 1998). States such as California (Coile, 1996) and Alaska (Federal Emergency Management Agency, 1997) made its use mandatory by state agencies and local governments wishing to receive state assistance during emergencies and disasters. The use of the ICS also spread internationally with British Columbia in Canada, for example, introducing a variant of the ICS for use by all provincial agencies (Government of British Columbia, 1997).

## Adoption in Australia

The Australian Inter-service Incident Management System (AIIMS) was developed by a committee under the auspices of the then Australian Association of Rural Fire Authorities (1989), since amalgamated into the Australasian Fire Authorities Council (AFAC), in the late 1980s. The system developed by the AARFA was based on the NIIMS with modifications to suit the Australian environment. One of the most significant of these was to call the core operational component of the AIIMS the Incident Control System, in contrast to the North American Incident Command System<sup>1</sup>. This change was to make the terminology used in the AIIMS compliant with existing Australian definitions of command and control. Since command was defined as functioning vertically within organisations and control as functioning horizontally across organisations, the use of control was more appropriate in the Australian context.

To support implementation of the AIIMS, the AARFA developed a comprehensive series of training manuals and videos together with operational guides and materials for use in the field at incident sites. When AFAC came into being, it took over the production and distribution of AIIMS materials.

The AIIMS has been widely adopted by most Australian fire services. Its use outside the fire services is difficult to determine precisely on the information available, although it appears from anecdotal evidence that only a few non-fire services have

1. In this article, the abbreviation ICS will be used for both the *Incident Control System* (Australian) and the *Incident Command System* (USA). The context of the usage will indicate which is being referred to.

adopted it. Non-fire organisations that have included Sydney Water and Taronga Zoo and several other NSW based agencies are evaluating it (Parsons, personal communication, 3 May 1999). As noted above, heated arguments over the merits or otherwise of the AIIMS and its ICS operational element have been observed between members of services that do and do not use it.

### The AIIMS/ICS in Australia

It is appropriate at this point to provide a brief discussion of AIIMS and the ICS as adopted in Australia. The discussion is based on the description of the AIIMS and the ICS provided by the AARFA/AFAC in its publication *The Australian Inter-service Incident Management System: Teamwork in Emergency Management*, initially published in 1989, but now in its 3<sup>rd</sup> edition (AFAC, 1994a), and the AFAC AIIMS Operating System Manual (AFAC, 1994b). ICS training materials produced by the Fire Services Division of the Fire & Emergency Services Authority of Western Australia and the US Federal Emergency Management Agency (1998) are also drawn on to provide additional information where needed.

The AIIMS is a set of five sub-systems: the ICS itself, a Training system, a Qualifications & Accreditation system, a Publications Management system and a Supporting Technology system. It is only intended to discuss the ICS element in this paper. This is because the other four sub-systems are supportive to and dependent on the ICS and are not directly relevant to a discussion of enhancing the operational capability of the ICS.

The ICS is the operational heart of the AIIMS. It is intended to provide a common management structure and vocabulary that can be applied to any form of emergency and can be used by any agency. The AARFS stated that the AIIMS 'can be used to respond to public emergencies . . . such as floods, cyclones, earthquakes . . . storms, major aircraft accidents and hazardous materials spills.' (AARFA, 1989, p 6).

Two important concepts are embodied in the ICS. The first is Unity of Command—this concept specifies that a person can only report to one supervisor and that supervisor in the ICS structure need not be from the subordinate's parent organisation. Closely associated with this is the span of control that a supervisor should have—the ratio of one to five is considered optimal and one to seven is the maximum allowable. The second important concept is that of Unified Command—this is where there is an identified and agreed strategy or set of strategies being used by all participants to combat the emergency. In other words, everyone will be

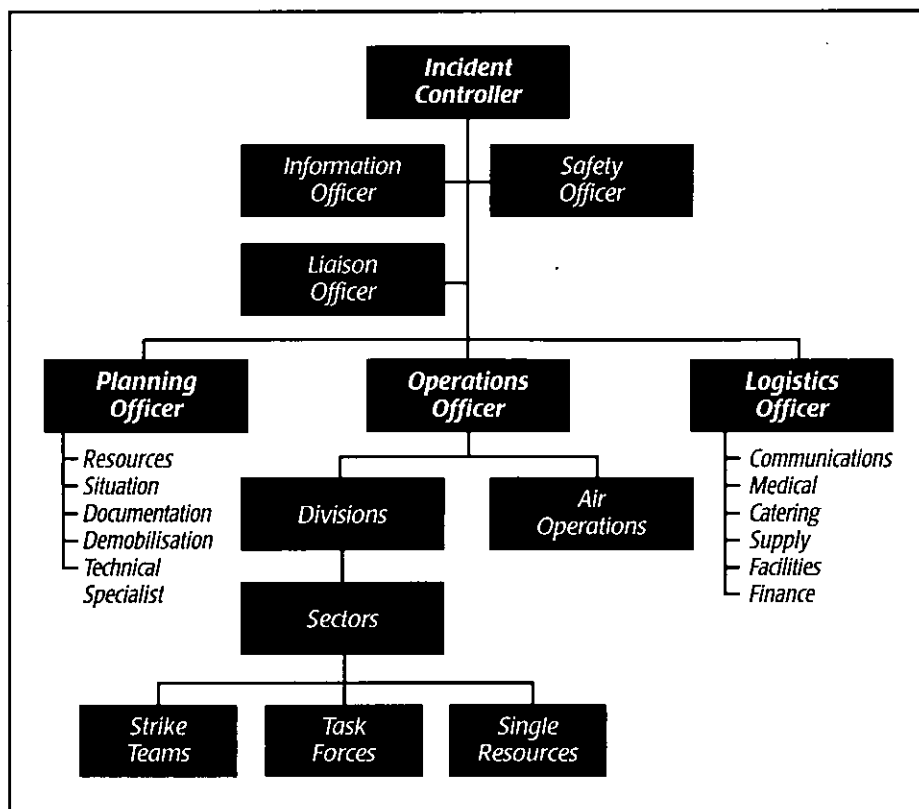


Figure 1: Basic ICS structure (Source: AFAC, 1994b)

working to the same game plan, promulgated through a single supra-organisational management structure. Figure 1 shows the key structure of the ICS.

As much or as little of the ICS structure is activated as needed to respond to the emergency. The Incident Controller is responsible for the overall management of the operation and is normally appointed by the agency with primary responsibility for managing the emergency. For many smaller incidents the Incident Controller will not need to establish any subordinate positions, being able to undertake all of the duties personally. As the complexity and size of the emergency increases, the Incident Controller establishes subordinate positions as required to meet the needs of the situation. Exceeding the span of control criteria of one to five often forces the establishment of a new subordinate position to bring the span of control back into line. For example, the Incident Controller may decide to personally provide the Logistics and Planning functions, whilst appointing an Operations Officer to manage the operations of several strike teams and task forces.

Similarly, as the span of control, complexity, distance, etc, requires, the head of a function, such as the Operations Officer, may need to establish subordinate positions. In Figure 1, the Operations Officer has Division Commanders managing Sector Commanders who in turn manage strike teams, task forces and single resources<sup>2</sup>. Conversely, as an operation winds down, subordinate positions may be progressively amalgamated

with their peers or superiors as operational complexity or size reduces.

The Incident Controller plus the heads of each of the three functional areas (Planning, Operations and Logistics) form the Incident Management Team (IMT). The role of the IMT is to formulate, under the direction of the Incident Controller, the plan for the management of the emergency, including the development of strategies, goals and objectives to be achieved. For larger incidents the plan should be written and formally disseminated so that all participants, particularly those in management positions, know what their role is and the expectations being placed on them are. For smaller incidents, a verbal plan may be all that is required. For those incidents where the Incident Controller provides all of the management structure personally, then the plan may be a mental concept only.

Personnel for each position should be appropriately trained for the position, both in terms of understanding the ICS and in terms of the specific skills needed for the position. In theory, it does not matter which organisation a person comes from—provided they have the requisite skills they can fill any position. In practice, however, the agency with primary responsibility is likely

2. A *Strike Team* is a set of resources of the same type e.g. a set of fire vehicles and a leader. A *Task Force* is a set of differing resources brought together to undertake a task e.g. two fire vehicles, a bulldozer and a water tanker, plus a leader. A *Single Resource* is an individual unit, including personnel and a leader, undertaking a task e.g. a police vehicle closing a road.

to provide the majority of the personnel for positions in the Operations hierarchy if only because it is their personnel who are likely to have the necessary operational skills.

### National developments

In 1998, following a consultative development process with the States and Territories, Emergency Management Australia (EMA) released its *Guide to Multi-Agency Incident Management* (EMA, 1998). The guide's aim is 'to provide . . . the emergency services involved in multi-agency response with guidance on incident management that is compatible with State emergency management plans and arrangements and which facilitates national inter-operability.' (EMA, 1998, p 1).

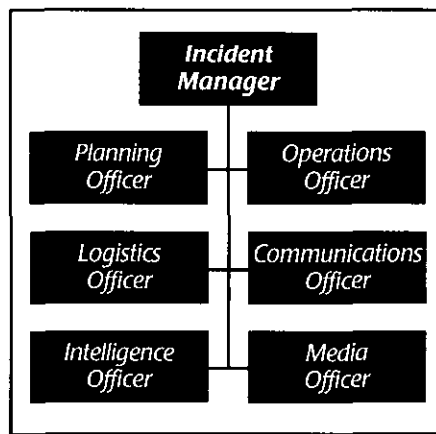
The guide also notes 'some of the material within the guide may appear similar to elements of the AIIMS. However, the material contained in this document is drawn from a number of sources and no preference is inferred.' (EMA, 1998, p. ix). This guide is not obligatory on any Australian emergency service.

The systems in the Multi-Agency Incident Management Guide are very similar to the AIIMS, although the Incident Controller becomes an Incident Manager and there are six functional sections not four (Planning, Intelligence, Operations, Logistics, Communications and Media; Finance is excluded as a functional section). The manual also briefly covers issues such as establishing field headquarters and operational decision-making. *Figure 2* shows the management structure proposed in the guide.

The structure proposed in the *Multi-Agency Incident Management Guide* does not consider the arrangements needed for subordinate levels below the functional level, leaving that to be determined by the States and the needs of the operation.

### International developments

Based on experience in recent major flood response operations in North America, there has been discussion on altering the structure of the North American version of the ICS to add a new 'Information' function to the existing four functional sections: operations, planning, logistics and finance (Parsons, personal communication, 3 May 1999). It is argued that the demands for public information in large-scale emergencies are becoming so demanding that Information should be a discrete function in its own right. It remains to be seen if this debate will result in change to the ICS used in North America. It is pertinent to note that the Australian Multi-Agency Incident Management Guide already accepts this need by recommending the establishment of a discrete Media function.



*Figure 2: Australian Multi-Agency Management Structure (Source: Multi-Agency Incident Management Guide, EMA 1998)*

### ICS critique

As has been mentioned previously, the ICS has its proponents who argue vehemently that it can be used in any circumstance or any operation. Indeed, the AARFS has stated that it can be applied to manage virtually any hazard, be it a tropical cyclone or a vehicle accident. There is a countering view, however, that argues that the ICS is a bureaucratic imposition designed to impose a rigid, quasi-military command and control structure ill-suited to managing the complex interactions required in community response to disaster. No less an authority than E. L. Quarantelli (1997, p 48) has stated:

'The spread of the Incident Command System (ICS) as a model for managing disasters is a contemporary manifestation of the thinking that such occasions must be 'controlled'. Yet research shows that the ICS is not a good way to manage the situation, despite its recent faddish adoption among some American emergency organisations.'

Like most things, the truth probably lies somewhere in between the extreme positions. The ICS, in its American variant, is widely used by a large and diverse range of agencies, albeit that many are fire services, to manage the response to emergency incidents of all types. It is endorsed as the national management system by the US Federal Emergency Management Agency (FEMA) who offer a range of ICS training courses, some accessible over the Internet. It is unlikely that a system that had any fundamental flaws would have received such wide acceptance or so high a level of endorsement.

This is not to say that the ICS cannot be constructively criticised. Coile (1996) has noted that in the United States, the ICS has been perceived as primarily a fire service system and as result is not used by all agencies, particularly the police. It also had limitations in that it was designed to cope with incidents—its primary focus was on providing a management structure at the

incident. It did not articulate into higher level structures, if any; nor did it cater for multiple incident events. It is pertinent to point out that the British Columbian ICS system expressly states that it is intended for use in the field at the site of the emergency (Government of British Columbia, 1997).

These issues were addressed in California in the early 1990s. The California State Legislature passed an ordinance requiring the use of a revised version of the ICS for all multi-agency emergencies. It was compulsory for all state agencies and local governments were also required to use it if they wished to access state financial assistance post-disaster. The new system was called the 'Standardised Emergency Management System' or SEMS.

SEMS builds on the ICS, retaining its incident level structure, with the addition of four successively higher levels of response that provide an organised structure as needed to manage multi-incident events. The levels are: Field (the original ICS level), Local Government, Operational Area, Regions and State.

The basic ICS structure of an Incident Commander and the four functional sections is retained at each level with the exception that the Incident Commander becomes the Incident Manager in each of the four levels above Field. This was because the term 'Manager' better described the functions of the position. Each Incident Manager can have one or more Incident Managers or Commanders from a lower level reporting to them. *Figure 3* shows the outline SEMS structure as used in California.

At each level in the SEMS structure, common subordinate structures, terminology and procedures are used. As far as practical, the commonality extends across levels, thus allowing common training and the ability for to work at any level with minimal additional training. Levels can be activated as required depending on the needs of the situation. It is quite practical to activate the higher levels without necessarily activating subordinate levels. For example, strike teams can be directed by the Local Government level without necessarily establishing the Field level. Once again, span of control, complexity and size determine when a higher or lower level is established.

The requirement to use the SEMS is established in law and is obligatory on all Californian state agencies and is required to be used by local governments if they wish to access state assistance.

The Californian SEMS addresses many of the issues considered problematic with the original ICS. Firstly, it recognises the importance of using a management focus as

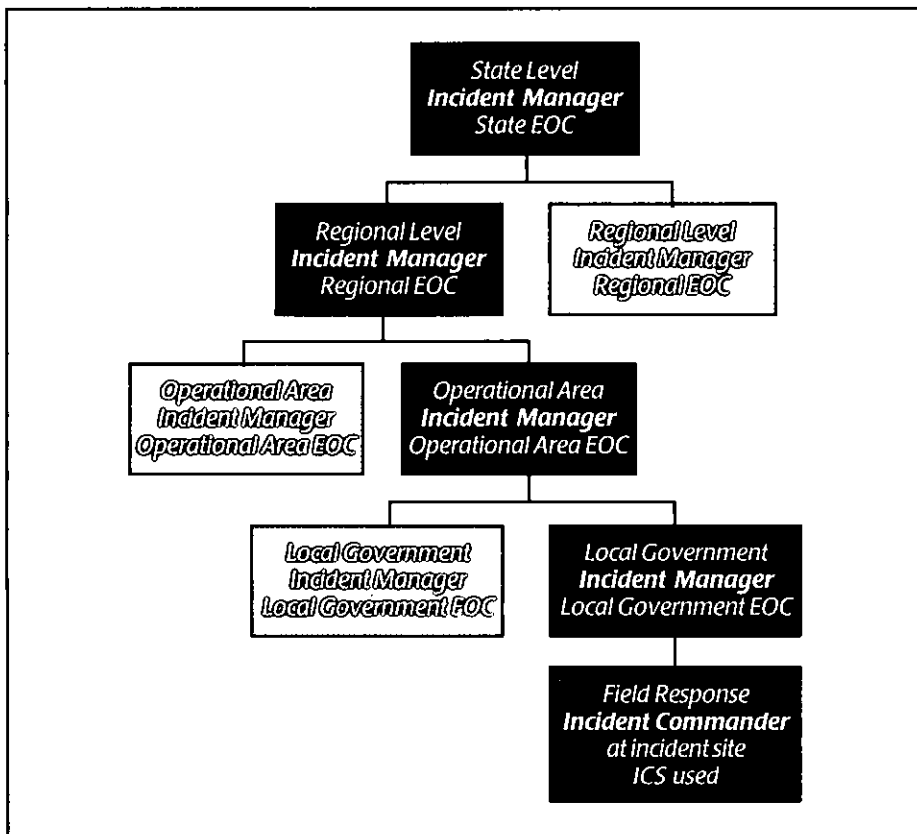


Figure 3: Californian Standardised Emergency Management System (Source: adapted from Coile, 1996)

opposed to a control focus when managing a disaster or emergency at the community level or higher. The management focus at the higher levels is appropriate because those levels should be taking a more strategic view rather than the tactical or control focus used in the field. This also goes some way towards addressing Quarantelli's (1997) concerns over the imposition of a command and control culture to manage disasters, although he may still take issue with the SEMS concept of one person at each level being responsible as either the Incident Commander or Controller, or the Incident Manager.

Secondly, the SEMS establishes a management structure that builds on top of the ICS. This is important because the ICS by itself does not provide clear and unambiguous links into higher level structures. The ICS training manual issued by FEMA (1998, p 1-14), for example, notes the need for the ICS to work with Emergency Operations Centres (EOC), but the following extracts from the manual leave doubt about how this is to happen:

Most jurisdictions maintain an EOC as part of their community's emergency preparedness program. The proper interface between the EOC and the on-scene management should be worked out in advance, if possible. The ICS structure and the EOC function together with the same goals, but function at different levels of responsibility. The ICS operation is responsible for on-scene response activities, and the EOC is res-

ponsible for the entire community-wide response to the event.'

California's SEMS provides a comprehensive hierarchical system that builds on the ICS, using its principles and establishing the systems for interaction between the field or scene oriented ICS and the community and management focus of the higher levels. This overcomes the uncertainty evident in the FEMA ICS manual referred to above by establishing and defining the links between the levels before the disaster strikes.

Thirdly, the SEMS is compulsory for use by all state agencies and is effectively so for local government, thus overcoming the problem of the system not being universally adopted. The SEMS is also supported by a comprehensive set of training materials to enable personnel to become proficient in its use.

Finally, the SEMS correctly locates the ICS component at the field or incident scene level. This addresses one of the key problems associated with adopting the ICS and attempting to use it to cope with all forms of natural and man-made<sup>3</sup> emergencies. Although it is claimed that the ICS can be used for all emergencies (see for example the discussion of the AIMS above), these claims have always been contentious. The effective management of a widespread flood emergency, for example, may require the following.

- High-level regional management that considers the entire floodplain with numerous communities, coordinating

warnings, levee maintenance, evacuation planning and the like. This level will often be activated well in advance of any direct flood impact given adequate warning.

- municipal or community level management focussing on the needs of a specific community or associated group of communities. This level may also commence functioning prior to the on-set of the actual emergency provided sufficient warning is available.
- emergency incident management at the site of rescues, levee failures, food and fodder resupply and the numerous other events that require urgent attention during the flood. These incidents will tend to move with the flood as it progresses down the river system. The magnitude of the flood event and the effectiveness of pre-impact prevention and preparedness activities will influence the number and scale of the incidents.

To apply the standard ICS to the management of the above event is difficult. It is not practical to have a single Incident Controller attempting direct operations at all levels, neither would it be good practice to have a series of independent Incident Controllers working at each level and incident site. The SEMS, however, provides for a system of hierarchical Incident Managers managing activities at their level, coordinating and cooperating sideways, upwards and downwards together with Incident Controllers attending to specific incidents and reporting to a higher level Incident Manager. Because the nomenclature, procedures and skills are common across the levels, appropriately trained staff from any agency can work in SEMS operations centres or ICS command posts at any level.

### An Enhanced Australian Incident Management System

The ICS critique above indicates that there is room to enhance the ICS as it currently stands to provide a truly integrated system for managing emergency incidents. The need to provide a system that caters for multi-incident operations and that integrates into a hierarchical structure was demonstrated through the example of the Californian SEMS.

The possibility of implementing integrated systems to manage emergencies and disasters is one that should be seized in Australia. The days of parochialism being an acceptable practice are past. The ability of

3. In the absence of any generally accepted gender-neutral term that describes hazards that result from the direct actions of humans. Alternatives such as technological hazards or socially-induced hazards do not adequately cover the full range of events caused by human activity that can result in emergencies or disasters.

all agencies involved in emergency response to work together in an integrated management structure offers many benefits: improved coordination, greater productivity, best-person for the job, better training, common language and procedures. These are all possible if a common system is introduced.

Direct adoption of the Californian SEMS without modification is not likely to provide a completely satisfactory result. The SEMS, while it addresses the problems with the ICS, is based on a different political system and could not be directly implemented without modification to fit into the Australian environment.

### The vision

An integrated system for the management of all multi-agency emergencies used by all response agencies in Australia, providing a common management structure, systems and training for use by all. The system would be compatible with and articulate into the relevant national training competencies. The system would retain the ICS as the field or incident site management system, but would integrate it with a compatible higher level structure to cater with larger, multi-agency multi-incident emergencies. For the purposes of this discussion, the system is called the Enhanced Australian Incident Management System (EAIMS).

### The Integrated System

The AIIMS ICS would remain the basis of the EAIMS, as it is an effective system for use at the field operational level, retaining most of the existing terminology, systems and procedures. The functional sections of the ICS have been adjusted to comply with the new Australian Multi-Agency Incident Management Guide, but this is not critical. This is because the EAIMS can work with either the existing ICS set of functional sections or the sections proposed in the *Australian Multi-Agency Incident Management Guide*. For those emergencies and disasters that require management at levels above the field operational level, successively higher Incident Management levels would be activated. The basic terminology, systems and procedures used at these higher levels would be the same as for the ICS with the substitution of the term 'manage' in place of 'control' e.g. there is an 'Incident Manager' for each level above the field operational level. The agency with primary responsibility for managing the response would appoint the Incident Controller and Managers. Staff for the functional sections at each level would come from any organisation so long as they are trained for the function. Figure 4 shows the structure and levels proposed for the AIEMS.

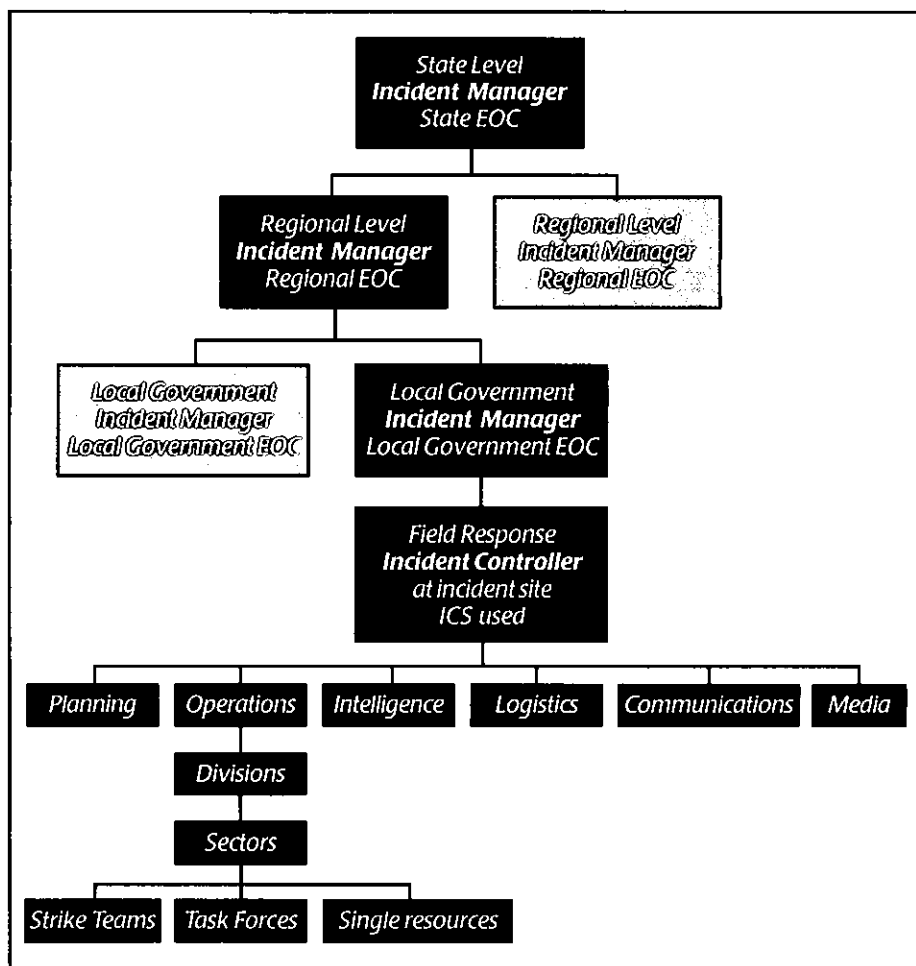


Figure 4: Enhanced Australian Emergency Management System

Figure 4 only shows the expanded structure for the field level. Each higher level in the system can also activate the functional areas needed to manage the response operation at that level. As many or as few of the functional areas can be activated at the discretion of the Incident Manager at that level. Responsibility for ensuring the function is discharged lies with the Incident Manager who is also responsible for ensuring that appropriate liaison between the functional areas takes place. It should be noted that it is important for the smooth and efficient functioning of the system that liaison between functions across levels takes place to avoid overloading the Incident Controllers. This liaison does not, however replace or supplant the responsibility for decision-making and strategy setting that lies with the Incident Controllers.

In addition to the ability of higher level Incident Managers to activate functional sections at their level, they can also deploy and control strike teams, task forces or single resources so long as span of control is not exceeded and there is no interference with a subordinate level's operations. It would, for example, be appropriate during a flood operation for a local level Incident Manager to dispatch a strike team to conduct a specific task without necessarily activating the field level. It would not be appropriate,

however, for a regional incident manager to deploy a task force under direct command to the scene of an incident where there is an established Incident Controller. In this case, the higher level should allocate the task force to the Incident Controller.

Figure 5 shows a notional structure for an emergency that requires activation of two of the higher levels plus two separate Incident Controllers (and associated response elements) managing separate incidents within the same larger emergency or disaster.

The AIEMS retains the term Incident Controller for the field level. Consideration was given to replacing it with Incident Manager as used in the *Guide to Multi-Agency Incident Management*. The change was not made for several reasons. Firstly, it would require considerable re-education of the many personnel already familiar with the ICS. Secondly, it provides a clear delineation between the field ICS level and the higher management levels. Thirdly it reduces the possibility of confusion over which Incident Manager is being referred to. As the regional and state levels will be comparatively infrequently activated when compared to the field and local levels, for the majority of emergencies there will be an Incident Controller at the scene and an Incident Manager at the local level. Finally, the California SEMS



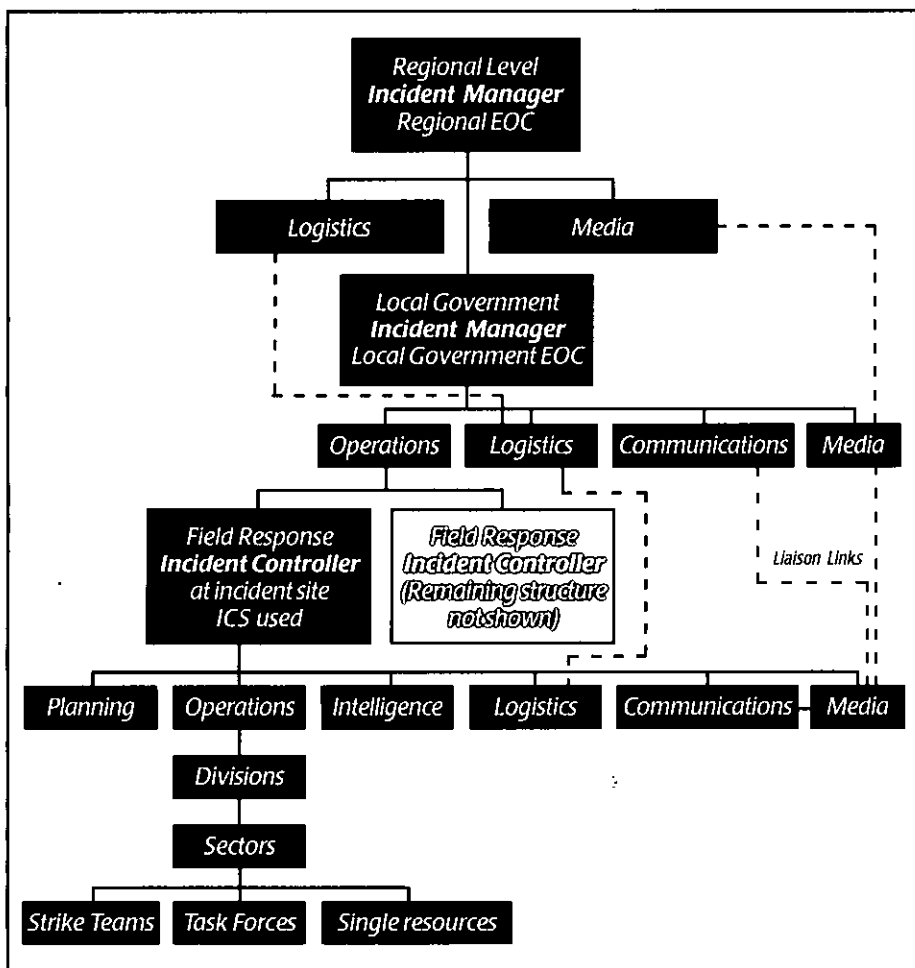


Figure 4: Enhanced structure for national emergency

retained the Incident Controller or Incident Manager dichotomy for similar reasons.

The AEIMS should retain the Incident Management Team (IMT) concept used in the ICS, applying it to each level. Whenever a level is activated, the relevant Incident Manager or Incident Controller should form an IMT composed of the Manager or Controller and the heads of any other functional areas established at that level. The role of the IMT is to develop the strategy and plan for that level to combat the emergency. Subordinate AEIMS levels would need to be responsive to strategies and plans developed by the higher level. Equally, the superior AEIMS levels need to be responsive to the requirements of the subordinate levels and must avoid attempting to supplant the role of subordinate levels. Flexibility and adaptability will be required particularly in the early stages of an operation as it is highly likely in many circumstances that a lower level will be established prior to the higher level. In this situation, it is imperative that the higher level takes account of strategies and plans implemented by subordinate levels.

The benefits of implementing the AEIMS are:

- retaining the existing ICS systems and procedures, thus retaining the existing considerable wealth of experience and

investment in training. If the modifications to the functions proposed in the *Guide to Multi-Agency Incident Management* are accepted, some modification is needed to the ICS. The concept of the AEIMS can be implemented irrespective of this, however.

- Implementing common terminology, procedures and training for use at all levels for all types of emergencies.
- Implementing an integrated management system that can be scaled up and down to meet the needs of the situation and that is compatible with the hierarchical structure used in all Australian states to manage the response to emergencies.
- More effective use can be made of the personnel available to fill positions in the management structure. Provided they have completed the relevant training, a person from any agency can fill any position other than the Incident Manager/Controller's. This is because the agency responsible for managing the response to the hazard must retain the right to place one of its officers in these positions. Some other positions, particularly those in the operational chain are also likely to require specialist skills that will be limited to the responsible agency, thus limiting the field of people who can fill these positions. Many generic positions however, such as

in the Logistics, Communications, Media, Intelligence and Planning functions could come from any agency.

- Implementation of a common national training regime linked to national competencies. This would provide immediate economies of scale as most material and courses would be common to all states. It would also enhance the ability of skills to be transferable from one state to another.
- The AEIMS, being based on proven systems (the ICS and the SEMS) should have a high probability of success if developed consultatively and effectively implemented (e.g. adequately resourced).

Implementing the AEIMS should be undertaken at a national level. While it would be possible to develop it in a single state, many of the benefits will only be fully realised if the project is undertaken as a national initiative. National initiatives of this sort should be managed by Emergency Management Australia using a consultative process to engage all stakeholders and obtain commitment to the system. This must include commitment of funding to enable development and implementation of the system in each state.

## Conclusion

The need for an integrated management system to improve the ability of emergency services to work cooperatively was identified in the United States in the 1960s. This resulted in the development of the ICS that was adopted by many fire services and other agencies in the US. In Australia, the ICS has been widely adopted by the fire services, with some modification, but its acceptance beyond these services has been more limited.

Deficiencies in the ICS, related to limitations when multi-agency multi-level emergencies were encountered together with the limited acceptance outside the fire services, were addressed in California through introduction of the SEMS. The SEMS retained the ICS and used its principles in a framework that provides a hierarchical structure that caters for multi-agency multi-level emergencies. The SEMS was introduced through a statutory process that effectively mandated its use by state and local authorities.

Australia faces many of the same problems that the US does in terms of managing multi-agency multi-level emergencies. At present, no generally accepted management system exists, despite the use of the ICS by many fire services. Because the Australian ICS is very similar to the US version, it has the same deficiencies in terms of the lack of a suitable higher level structure.

This article proposes a solution to this problem. Using the SEMS as the basis, the

article has described a hierarchical management system that builds on the ICS and uses its principles to provide for cooperative and multi-level management of emergencies. The system, tentatively titled the AIEMS, if properly developed and implemented offers a low-risk means of instituting a truly common, multi-agency multi-level management system that will cope with all forms of emergencies.

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## Book Review by Ralph Salisbury

**Management of Animal Health Emergencies**, World Organisation for Animal Health, Volume 18, No. 1, April 1999

The Paris-based World Organisation for Animal Health, usually known to veterinarians and others as OIE (Office International des Epizooties) publishes three volumes of its *Scientific and Technical Review* each year. Usually, these consist of valuable updates on occurrences and new knowledge concerning major animal diseases.

In Volume 18, No.1 of April 1999, the Organisation has departed from this format to produce a world review of the Management of Animal Health Emergencies. This single volume will be a useful reference for many years and it will be of interest to readers well beyond official veterinary organisations. Many of the authors are Chief Veterinary Officers with the responsibility for animal health emergency preparedness in their own countries.

In the Section 'Generic Principles' there are three articles. The first 'Model Framework and Principles of Emergency Management' is from Australia and uses the Australian Veterinary Emergency Plan (AUSVETPLAN) as an example of comprehensive planning. It is worth noting that the original concept for AUSVETPLAN was suggested by Roger Jones at the Australian Counter-Disaster College in 1980. It grew to become Australia's national plan and this article proposes it as a universal model. The article describes the

elements that must be included in comprehensive planning. The core principles listed include organisational, command, control, coordination, information management, timely activation and the need for the plan itself to be routinely reviewed. It then lists the key issues, which are more specific to animal health plans (nature of diseases, perceived risk of introduction, legal and jurisdictional responsibilities, agreement on definitions, stakeholder involvement, resourcing, communication channels and regional and marketing implications). The article then describes how these arrangements are activated in phases from the initial suspicion of an emergency to stand-down. The other articles under 'Generic Principles' are from Europe and cover legal and international obligations, government-industry interactions and funding arrangements for major animal health emergencies.

The next section, 'Prevention and Preparedness', contains seven articles summarising the animal health emergency preparedness situations in all of the world's major geographical regions and one article describing the role of the UN Food and Agriculture Organisation's (FAO) Emergency Prevention System. A further Section 'Learning from Others' contains five case histories of outbreaks ranging from bovine spongiform encephalopathy (mad cow disease) in Switzerland to foot and mouth disease in Taipei. These articles are of general interest because they cover socio-economic aspects of the outbreaks and the problems and opportunities presented in providing accurate public information. This theme is

further developed in another Australian article on dealing with unexpected or unknown emergencies. It contains cases that will be familiar to all Australians, including the equine morbillivirus (Hendra virus) outbreak, which killed both people and horses. Such cases represent the ultimate challenge in preparedness because, before the cause is known, the likely course of the outbreak cannot be predicted. The value of all of these case histories is that they were written when the control campaigns were complete or at least well established and the lessons learned had been considered in detail.

There are two articles dealing with aquatic animal health emergencies, one on the role of veterinarians in natural disasters and one on the emergency management of disasters involving livestock in developing countries. The Conclusion is written by the Australian Chief Veterinary Officer Dr Gardner Murray whose organisation played a large part in the development and completion of this publication. All but two of the articles are in English and the exceptions have English summaries.

Copies are available at approximately AUD \$70 plus postage from Hunter Publications, PO Box 404 Abbotsford Vic 3067, phone 03 9417 5361, fax 03 9419 7154 or email [jpdavies@ozemail.com.au](mailto:jpdavies@ozemail.com.au).

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# Community risk in Cairns: a multi-hazard risk assessment

**C**ommunity Risk in Cairns is the first of a series of multi-hazard case studies by the AGSO Cities Project. It considers earthquake, landslide, flood and cyclone. A report detailing the hazard history of Cairns, the risk assessment methodology and results was released on CD-ROM with a hard copy overview in April 1999.

The AGSO Cities Project undertakes research towards the mitigation of the risks posed by a range of geohazards to Australian urban communities. The ultimate objective is to improve the safety of communities, and consequently make them more sustainable and prosperous.

Risk is the outcome of the interaction between a hazard phenomenon and the vulnerable elements at risk (the people, buildings and infrastructure) within the community. We have made extensive use of geographic information system (GIS) to drive our analysis and assessment. *Risk-GIS*, as it has been christened in the Cities Project, is a fusion of the decision support capabilities of GIS and the philosophy of risk management.

## Community vulnerability

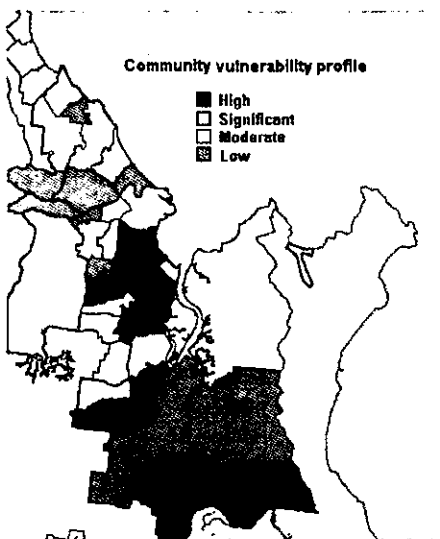


Figure 1: Community vulnerability profile

We have adopted a systematic approach to the description of the elements at risk in the community and their vulnerability, grouping the various elements into the five themes of setting, shelter, sustenance, security and society. We have developed an overall vulnerability profile of Cairns by which to identify those suburbs that provide a disproportionate contribution to community

by Ken Granger, Trevor Jones, Marion Leiba and Greg Scott, Cities Project, Australian Geological Survey Organisation

risk because of the number and nature of the elements at risk they contain. This is shown in Figure 1.

## Earthquake risk

Over the past 100 years there have been at least 11 significant earthquakes within 200 km of Cairns. We have constructed earthquake urban hazard zonation maps and, from the building database, produced an inventory of buildings, by construction type and usage, in the zones in these maps.

Whilst all suburbs have some degree of exposure, Risk-GIS analysis of the earthquake hazard reveals that some 86% of Cairns buildings stand on 'soft' sediments of the coastal plains and riverine deltas, or the sands, silts and clays of the lower footslopes. These sediments amplify earthquake shaking. The extensive 'soft' sediments beneath the coastal suburbs, in particular, would aggravate the impact of any significant earthquake. These are also the suburbs that contain many of the critical facilities and have significant concentrations of people, buildings and infrastructure.

In order to produce a suburb-by-suburb ranking of Cairns for earthquake risk from direct damage to buildings, we have introduced a vulnerability ranking of building construction types. The profile of risk exposure by suburb to earthquake is shown in Figure 2.

## Landslide risk

For Cairns, landslide has been, and remains, a significant risk, as evidenced by events such as the massive debris flows that buried 10 km of the Captain Cook Highway to the north of the city in 1951, and the frequent impact on road and rail links in the district.

As development extends increasingly onto the hill slopes, the risk of landslide impact will increase unless appropriate mitigation strategies are adhered to. Flash flooding in Freshwater Creek, or debris flows, have the potential to disrupt the Cairns water supply by blocking the intake or destroying sections of the pipeline.

The landslide study undertaken here is the first to follow an internationally recognised quantitative landslide risk assessment

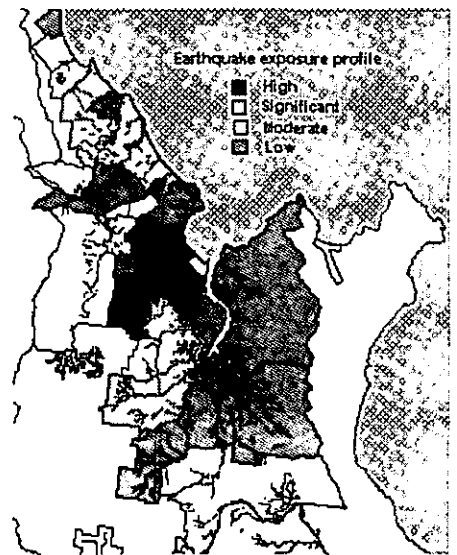


Figure 2: Earthquake exposure profile

methodology at a regional level in Australia, and various maps of specific and total risk of destruction have been produced.

## Flood risk

Whilst flooding causes inconvenience and some dislocation in Cairns on average about once every 12 years, it poses a relatively limited threat to people and buildings. This is because urban development has largely been excluded from the most flood-prone areas of the Barron River delta, and the flood warning system for the Barron River operated by the Bureau of Meteorology is very effective.

The most significant inconvenience caused by moderate to major flooding in the Barron River system is the isolation of the northern beachside suburbs from downtown Cairns, with its critical facilities such as hospitals and airport. Cairns can also be isolated by the blocking of road and rail access from the south by flooding in other catchments such as the Mulgrave and Russell Rivers.

Using *Risk-GIS*, we have assessed the number of buildings, length of roads and area of cane land in each of the Barron River delta suburbs that would be affected by Barron River flood scenarios of various annual exceedence probabilities (average recurrence intervals). The impact on these communities, emergency management issues, and key facilities affected have been discussed.

## Cyclone risk

Tropical cyclones pose a considerable threat to Cairns. In the 113 years since the settle-

ment was established there have been 53 cyclones that have had some effect on the town—that is, an average of a cyclone every two years. They bring with them the multiple threats of destructive winds, heavy rain and storm tide inundation.

Using *Risk-GIS*, we have assessed the suburbs in terms of wind risk exposure. We have also modelled various annual exceedence probability storm tide scenarios to quantitatively assess their impact on the elements at risk in the Cairns community.

Many people living in areas subject to storm tide inundation would be exposed to a significant risk of drowning, especially if the level of inundation exceeds 1 metre over floor level. For storm tide events with annual exceedence probabilities of 1% or greater (an average recurrence interval of at most 100 years) the numbers of people involved are relatively small and could be easily managed with appropriate warning, planning and community awareness. Beyond that level, however, a considerable effort would be required to undertake and manage the numbers of evacuees involved unless the vast majority were prepared to manage and undertake their own evacuations beginning at least 24 hours before the forecast cyclone impact time.

Whilst a severe cyclone on Cairns will have a major immediate impact with potentially

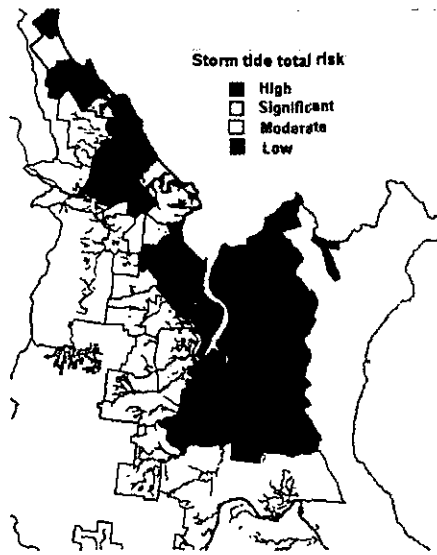


Figure 3: Storm tide total risk, taking community vulnerability into account

significant loss of life and massive damage, the long term effect will also be catastrophic. In an extreme event, most survivors would need to be evacuated to centres as far away as Brisbane and Sydney. The loss of facilities on which the community relies would be such that the city would be virtually uninhabitable for an extended period.

#### Total risk assessments

For each of the hazards, earthquake, landslide, flood, destructive cyclonic wind, and storm tide, we have constructed total risk

profiles for Cairns, taking into account the vulnerability of the whole community as well as the suburb-by-suburb risk for that hazard. Figure 3 shows the total risk for storm tide.

#### Is Cairns a risky place?

For an isolated community of more than 120,000 people located in the wet tropics, Cairns has a relatively low level of risk exposure to most hazards within the 1% annual exceedence probability range (i.e. an average recurrence interval of 100 years or less). Whilst events within this range will cause some loss and put lives at risk, the warning systems and other mitigation strategies already in place should keep loss of life to virtually zero and economic loss to the community as a whole to nuisance, or at least tolerable, levels so long as the population is aware and prepared.

The Cairns community does, none the less, have a very high level of residual risk exposure to the less frequent and more severe events, especially strong earthquakes, severe cyclones and major debris flows.

For more information, contact Ken Granger on (07) 3239 8671, e-mail: kgranger.agso@bom.gov.au. The CD may be purchased from the AGSO Sales Centre, GPO Box 378, Canberra ACT 2601.

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# The effects of tropical cyclone Vance on Exmouth

## Introduction

Cyclone Vance hit Exmouth on the morning of Monday 22nd March, 1999. Exmouth is a small coastal township some 1250 km north of Perth, and almost at the tip of Northwest Cape in Western Australia. It is located on the west side of the Exmouth Gulf and has a population of just under 3000. It was established in the early 1960s as the service centre for the Australian-United States Communication Station. Now its main industry is tourism.

The township extends over an area of about 4 km long by 2 km wide, and is about 1 km inland from the gulf waters. The overall housing stock is unusual inasmuch as it mainly consists of six readily identifiable types. There are block houses built for the US services personnel, houses built by the (then) Western Australian Housing Commission, imported US kit houses, houses built for Defence Housing Authority, transportable houses and a group of newer houses built in the last ten years. The different types of housing are generally scattered throughout the township, but with newer development concentrated to the north.

The Australian Standard wind loading code (Standards Australia 1989) defines the 50 km wide coastal strip between latitudes 20°S and 25°S in Western Australia as Region D, the most severe region for tropical cyclones. For engineering design the code assigns Region D a basic ultimate limit state gust wind speed of 85 m/s (306 km/h). Exmouth is in the middle of this region.

The Bureau of Meteorology has developed a five point system for defining the severity of tropical cyclones. All cyclone warnings issued by the Bureau include a severity classification. A description of the classifications is included in the front section of all telephone books in cyclone regions, so that communities are familiar with the rating. Table 1 shows the system, with the

by Greg Reardon (Cyclone Testing Station, James Cook University, Townsville), Geoff Boughton (Curtin University of Technology, Perth), David Henderson and John Ginger (Cyclone Testing Station, JCU)

maximum gust speed expressed in both kilometres per hour (km/h) and metres per second (m/s).

The damage potential listed in Table 1 for each category of cyclone has been based on likely performance of buildings in cyclone Region C, as defined in the wind loading code. It assumes a full cross section of new

for a category 5 cyclone in Region D is 'Significant roof and structural damage. Dangerous airborne debris', that is, the tabulated description for a category 4 event in Region C.

## Cyclone Vance

Vance formed in the Timor Sea and was declared a Category 1 cyclone by the Bureau of Meteorology on 18 March. It headed west then southwest as it intensified rapidly to become a Category 5 by 21 March. The following day it was travelling almost due south as it entered Exmouth Gulf. The Bureau's report states that the eye of the cyclone

Time 22/3/99	Mean wind speed		Gust wind speed		Mean wind direction from N degrees
	km/h	m/s	km/h	m/s	
0600	65	18	102	28	150
0900	102	28	157	44	155
1000	120	33	176	49	160
1100	157	44	222	62	170
1130	176	49	250	69	205
1145	191	53	267	74	215
1200	157	44	204	57	225
1230	111	31	167	46	255
1300	74	21	130	36	280

Table 2: Wind speed and direction at Learmonth

and old houses, including older ones in various states of neglect or disrepair. Because it was established in the mid 1960s, Exmouth does not have many of these older houses.

The design gust wind speed for Region C is 70 m/s, that is, about the middle of the range for category 4 cyclones. As already stated, Exmouth is located in Region D which has a design gust wind speed well above the minimum for category 5 cyclones. The effect of this is to move the damage potential listed in Table 1 up one category relative to wind speed. Therefore a more accurate estimate of the damage potential

passed approximately 25 km to the east of Exmouth. They estimated the cyclone's eye to be about 20 km diameter, and its forward speed in the gulf to be 25-30 km/h.

Exmouth is serviced by the airport at Learmonth, some 35 km to the south. The Bureau has a Dines anemometer at the airport. The cyclone's eye wall was estimated to be about 20 km east of Learmonth at 11.45 am when the anemometer recorded the peak gust of 267 km/h. The Bureau has made copies of the anemograph readily available, and annotated it with the following statement: 'Peak wind: 103 knots (190 km/h) gusting to 144 knots (267 km/h) from SW at 11.45 am on Monday March 22, 1999, setting a new record for the highest surface wind speed ever recorded on mainland Australia'. Table 2 lists wind speed and direction data for Learmonth taken from the anemograph. It can be seen that the wind came from about the south east and as the cyclone went past swung around to about west south west. The wind direction change was about 130°. Wind directions at Exmouth would have been similar to those at Learmonth.

Category	Maximum Gust (km/h)	Gust (m/s)	Damage potential for towns in Region C
1	<125	(<35)	Negligible house damage. Damage to crops and foliage.
2	125-170	(35-47)	Minor house damage. Significant damage to crops, signs and caravans.
3	170-225	(47-63)	Some roof and structural damage. Power failures likely.
4	225-280	(63-78)	Significant roof and structural damage. Dangerous airborne debris.
5	>280	(>78)	Extremely dangerous with widespread destruction.

Table 1: Tropical cyclone categories

A nearby barometer recorded the minimum pressure as 938 hPa.

Although the 267 km/h gust wind speed is the highest recorded on mainland Australia, it would not have been the highest gust in Vance. Also, it is just below the threshold for Category 5 cyclones. There are two reasons why this recorded gust would not be the peak within the cyclone. Firstly, the eye passed about 20 km away from Learmonth, so there would be a reduction in wind speed because of that distance. Secondly, because Vance passed to the east of the Learmonth and Exmouth while heading in a southerly direction, its forward speed of 25–30 km/h would reduce the effect of the clockwise rotational wind speed at those locations. Wind gusts to the north, south and especially to the east of the eye would be significantly higher, well into the Category 5 classification.

As Vance's track was slightly closer to Learmonth than to Exmouth, the peak gust winds at Exmouth have been estimated as 250 km/h. Analysis of damaged structures indicate that the maximum winds would have been in the range 220–250 km/h (61–69 m/s) in the southern and exposed parts of town, and 200–230 km/h (55–64 m/s) in the northern and sheltered parts.

### Performance of buildings

Most buildings in Exmouth were houses or industrial buildings, with a few offices and shops in the town centre. The industrial area was at the southern end of town, where the wind speed was greater.

In order to obtain a clear overview of the extent of the damage to housing, the authors undertook an extensive survey of the type of housing and the amount of damage to each house. The survey covered the entire town with the exception of the industrial section. The survey data was collected either by a person walking, or from a slow moving car. Therefore it is based on external features visible from the street. Special care was taken to prevent unintentional bias in collecting the data. Information was collected on 460 houses, which would represent about half of the total number in the town.

The damage classification system was based on one developed by Leicester and Reardon (1976) for Darwin after cyclone Tracy. It ranks the amount of visible structural damage to the house. The categories range from negligible or non-structural damage such as broken soffits or loss of flashing to loss of all walls, where the house was considered to be beyond repair. For Exmouth they were categorised and defined as follows:

#### 1. Negligible/Non-structural

Includes no damage, or small amounts such as the loss of a small section of wall cladding



Photo 1: The majority of newer houses successfully resisted the wind forces.

material. It also includes damage to elements which are not part of the main structural framework, such as guttering, soffit lining, fascias, garage doors and the like.

#### 2. Impact

Where a house has obviously been impacted by flying debris, but which has not led to consequential damage. Examples would be a bent debris screen or indentations in external cladding.

#### 3. Roofing

Loss of a significant amount of roofing only, but where battens and roof structure are left substantially intact. Roofing that had peeled back to the overbatten, but not beyond, was included in this category. This was so even if the edge batten was still attached to the roofing that had peeled back.

#### 4. Roof battens

Failure caused by inadequate fixing of roof battens to rafters, so roofing and battens were blown off. The rest of the roof structure is in place.

#### 5. Half roof

A significant portion of the roof structure has been blown away.

#### 6. All roof

All of the roof structure would need to be replaced.

#### 7. Half walls

Loss of most of the roof structure and loss of some walls.

#### 8. All walls

Loss of most walls.

The damage categorisation system relates only to structural damage to housing visible from outside, and was usually restricted to the front and sides. It is likely that some lower level damage such as debris impact or even damaged roofing would have been missed. Therefore the survey results should be taken as being indicative of the damage.

Figure 1 shows a graph of the distribution of damage for all houses surveyed.

Figure 1 shows that about 70% of housing had only minor damage and a further 15% was damaged by debris. Thus only about 15% of houses had structural damage, including loss of roofing. These statistics were unexpected for a town that had been hit by winds of up to 250 km/h. After cyclone Tracy, a category 4 event, Darwin had much higher percentages of serious damage (Lester and Reardon, 1976). Even the damage potential listed in Table 1 for category 4 wind speeds predicts greater damage than shown in Figure 1.

One of the reasons for the lower amount of damage was the excellent performance of the block houses built for the US Naval personnel when they were at Exmouth. They had reinforced blockwork walls, a reinforced concrete roof, small windows and debris screens. Eighty four were included in the survey. All were classified as having minimal damage i.e. damage Category 1. It is obvious by their description that they were designed to withstand very high wind forces. Presum-

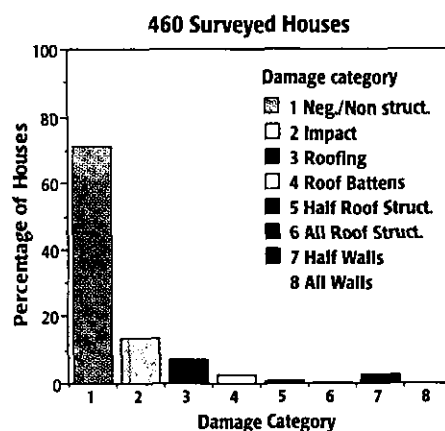


Figure 1 Distribution of damage—all houses



Photo 2: Transportable houses put in the poorest performance of any housing group.

ably the criteria were set so that work at the naval base would not be disrupted by loss of staff housing in the event of a cyclone.

This excellent performance of the block houses was anticipated as many owners invited their neighbours from other types of houses to shelter in them. In this way the block houses were used as unofficial cyclone shelters.

Even if the block houses are considered to bias the data set and are removed, about 65% of the remaining houses are still in the minimal damage category. Obviously the percentages in the other categories increase, but they still remain relatively small.

### Structural performance

The DHA houses also performed well, having virtually no major structural damage. The majority of the newer houses successfully resisted the wind forces (see Photo 1) although most had the advantage of being at the northern end of town where the wind speed is estimated to be slightly less.

The transportable houses put in the poorest performance of any of the groups. This type had generally been built in two sections in Perth, transported to the site and joined together. They lost roof structure and sometimes walls. Most of them were of older construction, with timber framed walls and timber or steel roof trusses. Photo 2 shows one that had lost its roof and walls. At least one new steel framed transportable house on the southern outskirts of town lost its entire roof structure (Photo 3) due to inadequate fixing of the trusses.

The Housing Commission houses appeared to perform fairly well, despite their age, but there have been recent reports based on detailed inspections that indicate that there may be hidden damage. This includes roof battens partly separated from rafters.

Four out of five blocks of flats lost their entire roof structure from the leeward slope in similar fashion. Photo 4 shows one of the roof slopes. In each case the leeward slope

peeled off in one piece, initiated by failure near the ridge. Failure was a classic case of inadequate tie down from roof to foundations. The plane of the roof structure had been well designed with robust members bolted together and an adequate bracing system. But the tie down to internal party walls was not sufficient.

The argument has already been made that the damage potential for houses in Region D as defined in the wind loading code could be taken as one level below those listed in Table 1, which would have been based on the lower design wind speeds of Region C. If the estimate of peak gust wind speed of 250 km/h is accurate, it can be argued that the damage potential listed in Table 1 for a category 3 cyclone is more appropriate for these houses designed for Region D wind speeds. This was actually the case. The best definition from Table 1 for damage to the houses at Exmouth is 'some roof and structural damage. Power failures likely'.

A number of non-structural elements failed due to wind pressure, which led to



Photo 3: This new transportable home lost its entire roof structure due to inadequate fixing of trusses.



Photo 4: On this block of flats, the leeward roof slope peeled off in one piece, initiated by failure near the ridge.

water entry and other damage. Doors on some of the US kit homes flew open when the striker plate tore out of the door jamb. This pressurised the interior of the houses and, in a number of instances, caused failure of the end wall. *Photo 5* shows such a failure.

Most of the industrial buildings were fairly new. They usually had open webbed steel trusses on posts spaced two to three metres apart. Most resisted the wind forces, but sometimes lost some flashing or one or two sheets of cladding. There was one spectacular exception, where the columns pulled out of the ground, the building became flying debris, hit two others and finally wrapped around a light pole (*Photo 6*). A couple of older industrial buildings were stripped of all roofing. There were reports of this cladding from the industrial area flying to the adjacent residential area and causing missile damage to housing.

Caravans and on-site cabins generally did not fare well. Although the proprietor at one caravan park chained the chasses securely to concrete pads there was still extensive damage. Older vans broke up leaving the chassis and floor still secured to the slab. On some newer vans, and on cabins, the turnbuckles used to tighten the chains yielded under the stress and the hook opened setting the chains loose and allowing the vans or cabins to roll.

### Non-structural performance

Water entry was a significant problem. Some residents told of jets of water spurting from beneath windows and sliding doors. Others reported water getting into roof space through failed soffit linings or vented gable ends, usually resulting in collapse of the ceiling. Such collapse could lead to structural problems if the ceiling is relied upon to provide diaphragm action to link bracing walls. In any case, it effectively rendered the occupants homeless until replastering could be completed.

Because of the general improvement in the structural strength of housing in the past twenty years, future emphasis may need to be directed towards better design of non-structural elements to prevent entry of rainwater into houses during cyclones. This water entry is becoming more of a problem with the increasing number of electronic items which are regarded as necessary in a household. Roof spaces are often vented to allow air circulation and provide reduced indoor temperatures during summer months. The design of these features will need to be improved to prevent wind driven rain from penetrating the roof space.

### Conclusions

Although cyclone Vance was a category 5 event, its path relative to the township of



*Photo 5: Failure of the end wall due to interior pressurisation.*



*Photo 6: This entire building became flying debris, coming to rest wrapped around a light pole.*

Exmouth meant that the wind speeds that hit the town were in the Category 4 range. They are estimated to be between 200 and 250 km/h, with the lower wind speeds in the northern part of town.

The overall structural damage to the housing stock was considerably less than was anticipated from a Category 5 (or even Category 4) cyclone. The majority of houses had minimal structural damage. This is partly because of the higher design wind speeds specified in the wind loading code for this Region D and partly because of the advances in cyclone resistant construction that have been introduced throughout Australia since cyclone Tracy hit Darwin in 1974.

The block houses built for the US Navy, with reinforced blockwork walls and concrete roof, came through the cyclone virtually undamaged. They were used as pseudo cyclone shelters. The DHA houses and the new houses also performed well.

The wind pressures did find weak links in the chain of tie-down from roof to ground. Transportable houses had the worst perfor-

mance of the groups, with many losing their roof and some walls.

Despite being in the southern part of town where the wind gusts were the highest, industrial buildings generally performed well although loss of sheets of cladding was not uncommon. Conversely, many caravans broke up or rolled over because of inadequate tie down. Water entry through vents or damaged soffits caused ceilings to collapse and water damage of contents.

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*The authors wish to acknowledge the support given to them by EMA to travel to Exmouth to make these investigations. Geoff Boughton acknowledges similar support from the Department of Local Government, Western Australia.*



# Drought assessment: the 1997–98 El Niño drought in Papua New Guinea and the Solomon Islands

The 1997–98 El Niño episode brought serious drought to many Pacific island countries. This article discusses the drought in Papua New Guinea and the Solomon Islands and assessment of its impact.

## Background

Papua New Guinea and the Solomon Islands are situated in the south-western Pacific Ocean, between 2–12° south of the equator. In this location they experience generally warm temperatures year-round, with daily averages reducing by a few degrees during May–October. However, in the highlands of Papua New Guinea, temperatures can be very much cooler with occasional frosts above 2700 metres between May and October. Rain can occur at any time of the year but is generally lower from May to October when the south-east trade winds prevail.

Drought conditions are not infrequent in the smaller Pacific islands, particularly in atolls which rely for fresh water supplies on a shallow fresh water lens lying above the salt water table. People on these islands experience domestic water shortages on a regular basis resulting from either limited rainfall or because wind or wave-borne salt water has drained into the lens turning it brackish. Many atoll populations have developed coping mechanisms to help them through these periods. Using less brackish beach springs or drinking coconut milk are typical examples.

Mainland Papua New Guinea is less widely affected by drought because of its size and geographical complexity. Nevertheless, parts of the country, notably around Port Moresby, are seasonally dry and widespread drought has been experienced on a number of occasions in the past.

Both countries have national meteorological services but these are under-resourced. The Papua New Guinea Meteorological Service receives daily rainfall information on a monthly basis from 12 permanent observation sites and on an irregular basis from 10 voluntary reporting sites. Solomon Islands Meteorological Service receives similar monthly reports from six sites.

## The 1997–98 El Niño Event

The Southern Oscillation Index, used as an indicator of El Niño impact in this region,

by Joe Barr, Pacific Emergency Management Associates Pty Ltd. Presented at the *Disaster Management: Crisis and Opportunity Conference* James Cook University, Cairns, Nov 1998

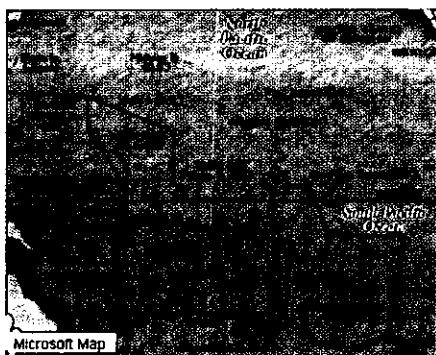


Figure 1: The South-West Pacific

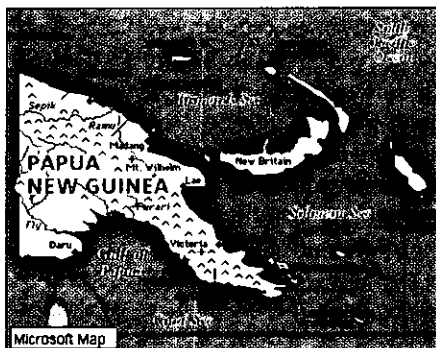


Figure 2: Papua New Guinea

moved dramatically by 22 points from positive to negative in February–March 1997. It then remained negative until May 1998, when there was an even more dramatic change of 25 points from a deep negative index back to positive.

Climatic variations around the world during this El Niño over this period have been widely publicised and are discussed in many papers and venues. In South Pacific island countries, which include Papua New Guinea, the main change appears to have been a significant reduction in rainfall that resulted in droughts that caused concern in at least Papua New Guinea, Solomon Islands, Vanuatu and Fiji. Drought was also experienced later in Samoa and Tonga.

## The 1997–98 drought in Papua New Guinea

Rainfall in any part of Papua New Guinea may be subject to wide variation over any

selected period of up to a month. Rainfall in the early months of 1997 was within normal range of expected variation. Recording stations in Papua New Guinea for the period January to March 1997 measured rainfalls from 39% below normal to 69% above normal. The highest figures were from Hoskins and Tokua in New Britain, both of which recorded more than 65% increases.

From April 1997 the rainfall picture changed dramatically. Over the following nine months, Wewak on the north coast of Papua New Guinea was the only station reporting higher than average rainfall. Other stations reported falls 23% to 78% below normal.

As frequently occurs, the symptoms of the oncoming drought were slow to be noticed. The frequency of rainfall variations and the possibility that the dry season was starting early meant that there was no sense of alarm. Traditional dry season agricultural practices were begun but it was not until July that reports of serious water shortages began to reach Port Moresby.

An additional climatic variation in 1997 was the occurrence of an unusually high number of frosts in the Papua New Guinea highlands. These began in June and were experienced down to 1450m, although the areas most affected were those higher than 2200 m in Enga, Western Highlands, Southern Highlands and Central Provinces. Frosts were experienced in every month until October. At least one place, Tambul, in the Western Highlands, experienced successive nights of frost, including eight in September. (Allen, 1998).

As the effect of the drought and frosts became more widespread provincial governments began making representations to

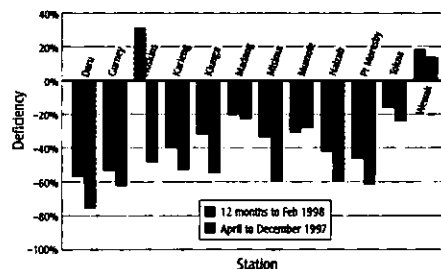


Figure 3: Papua New Guinea rainfall comparisons 1997–98

central government about the difficulties being experienced by both subsistence and commercial farmers. School closures were being reported when poorly maintained water tanks were unable to hold the reserve supplies needed to meet the daily needs of staff and students.

In August, two Papua New Guinea Government departments asked Drs Bryant Allen and Michael Bourke, of the Australian National University, to assess the effect of these frosts on village food supplies (Bourke 1998). Both Allen and Bourke have conducted research into agriculture in Papua New Guinea for more than 25 years and they have an encyclopaedic knowledge of the subject.

By September the request had broadened and Australia was asked by the Department of Provincial and Local Government Affairs to provide a team to assess the scale of the national problem; to assist National Disaster and Emergency Services to establish an operations centre; and to assist with development of reporting and monitoring mechanisms. The assistance of Drs Allen and Bourke with development of recovery mechanisms was also sought.

The Australian Agency for International Development (AusAID), the Australian Government's development assistance agency, convened a team from the Australian National University, CARE Australia and Pacific Emergency Management Associates to meet these needs. Members had experience in geography, agriculture, logistics, water supply, health and emergency management. AusAID also agreed to fund a full drought assessment.

### The first assessment

Assessment of the impact of drought is always difficult. It is usually a problem that affects a wide geographic area in a variety of ways. By the time the team arrived in Port Moresby in September, there were reports of drought impact from all nineteen provinces and the local media was encouraging further reports by featuring drought news. The quality of reports differed and there appeared to be a significant 'me too' element in reports from some provinces. The possibility that aid might be forthcoming was also a significant factor. No politician wanted to be seen to be downplaying the possible impact on constituents.

Media and other reports were contradictory but appeared to indicate that:

- more than 1.3 million people were severely affected
- over 70 deaths had been caused by famine
- population movements were beginning
- crops were dying or dead
- bushfires were devastating villages and food gardens

- streams, creeks and swamps had dried up
- rivers were disappearing
- schools had closed and hospitals and clinics might have to close because of water shortages
- lack of water was reducing power generating capacity so that towns were suffering major power cuts
- fights over water were beginning.

Assessment within four weeks was needed so that action could be initiated to develop strategies and priorities. The process was complicated because there had been no coordinated collection of reports to date, information was not shared between agencies or between levels of government, and shortage of funds meant that previous reports had not been checked or substantiated.

A final blow was the discovery that there was no baseline government information available for comparison. Allen and Bourke were considered to have the most comprehensive available knowledge of previous droughts and of agriculture throughout the country. There would be heavy reliance on their expertise. The Department of Agriculture and Livestock had some very skilled and experienced scientists and agricultural workers but none had the same breadth of knowledge of the whole country.

In the time available, it was clear that this would be a very coarse assessment but the increasingly alarming information being received made it imperative that decisions on relief priorities be made quickly. An assessment of the whole country to a common standard was seen a vital information base on which to decide those priorities. The first-ever drought assessment of a developing country of 463,000 sq km and a population of 4.4 million people is not an easy proposition. To attempt to complete it in a month using teams with little or no experience of such assessments was ambitious, and it is to the credit of all concerned that a report was produced in time for meaningful action to be taken.

Allen and Bourke quickly developed a draft questionnaire covering agriculture and food impacts. This was amended, with input from the rest of the team to cover water and health impacts, and put to print. The questionnaire was lengthy because there was a need to obtain some baseline data to compare current and previous conditions and practices. As the answers to questions might exaggerate the situation in individual com-



*Drought-affected hills in Milne Bay Province, Papua New Guinea*

munities it was decided to include a 'summary' page in which the team could give their view of the situation in each place visited and make a comparison with other similar communities. On this page the assessment team was asked to categorise the impact on a five point scale as follows (Allen and Bourke 1997a).

1. Unusually dry, but no major food supply, drinking water or health problems.
2. Some inconvenience. Staple food is short but other food available, must travel further to collect drinking water but health OK.
3. Difficult, with food short and some famine food being eaten, water available at a distance, some babies and old people unwell. No lives at risk.
4. No food in gardens, famine food only being eaten, water in short supply and possibly polluted, increasing sickness, lives of small children and old people at risk.
5. Extreme situation. No food available at all, water very short, many people ill, small children and old people dying.

In due course these categories became the main basis for decision making about drought response.

Thirteen teams of two or three people were organised. The Department of Agriculture and Livestock provided most team members but others were drawn from provincial governments, NGOs, Ok Tedi Mining Ltd and independent agricultural agencies. Field work took up to 18 days with teams travelling by road, sea, air and on foot. The aim was to assess the situation in a representative selection of villages in each census division.

## Global Disaster Information Network

The Global Disaster Information Network (GDIN) is a United States initiative which aims 'to get the right information to the right people in the right form at the right time.' To gain international support and commitment to GDIN, a number of meetings have been held with the latest in Mexico City in May 1999.

Jonathan Abrahams, Assistant Director Policy at EMA, attended the Mexico meeting which canvassed a number of information and disaster management issues ranging from sustainable development to recovery, and satellite-generated remote sensing products to more conventional technologies. Meeting proceedings can be found on the World Wide Web at <http://www.state.gov/www/issues/relief/mexicorpt.html>. Australia has agreed to host a GDIN meeting in 2001.

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

## Disaster Assessment Guide

The need for timely and accurate information immediately following a disaster on the extent of damage and disruption to the community is fundamental to effective response. To meet a perceived void in Australian guidance on this topic, EMA is developing a Disaster Assessment Guide as part of the Australian Emergency Manual series. The guide will provide details on the process and procedures used in planning, conducting, post disaster assessment. EMA would welcome input to the publication from interested disaster managers.

For further information contact Don Patterson, phone: (02) 6266 5165 or e-mail: [dpatterson@ema.gov.au](mailto:dpatterson@ema.gov.au)

## PNG developments

Disaster management in PNG is moving ahead with re-structuring and re-focussing of the National Disaster and Emergency Services (NDES) and the conduct of a number of other training and awareness activities.

The most significant activity is re-activation of the disaster management development project.

EMA's Overseas Emergency Management Officer, Phil Stenchion, is playing a significant role, on behalf of AusAID, in most of these activities ranging from assisting with adapting regional course materials to PNG contexts to facilitating the review of the National Disaster Management Plan.

For further information contact Phil Stenchion, phone: (02) 6266 5441 or e-mail: [pstenchion@ema.gov.au](mailto:pstenchion@ema.gov.au)

## Year 2000

EMA continues to play an active role in ensuring emergency managers are prepared to deal with the

consequences of Year 2000 service failures on public safety. Recent activities include:

- Release of the EMA Year 2000 Strategy which outlines EMA's objectives leading up to and during the critical period and how they will be achieved.
- Conduct, in consultation with States and Territories, of a review of emergency management preparedness.
- Hosting, in June 1999, of a second national meeting of emergency managers to share information. Commonwealth, State and Territory Year 2000 policy coordinators and representatives from key utilities also attended the meeting which concluded that, based on available information, the threat to public safety of major disruptions was minimal but there was a need for vigilance and a risk management approach to treating possible threats was appropriate.

For further information contact Ken Ullman, phone: (02) 6266 5221 or e-mail: [kullman@ema.gov.au](mailto:kullman@ema.gov.au)

## Kosovo displaced persons

EMA played a key coordination role in implementing the Federal Government's decision to bring 4000 Kosovars to Australia in May and June this year. Due to EMA's previous work in developing plans for the reception of personnel evacuated into Australia following disasters, the organisation was approached by the Department of Immigration and Multicultural Affairs (DIMA) early in the planning process to assist with developing the process to be used in receiving the new arrivals in Australia.

Reception processing included health and dental screening, essential medical treatment, clothing issue, registration on the National Registration and Inquiry System and issue of Identification Cards. Processing of each batch of arrivals took three days. These activities were efficiently undertaken by a number of Commonwealth and NSW Government agencies, and some Non-government organisations. EMA has produced a video to record the reception process.

EMA deployed a staff member to East Hills during the initial stage of each group of arrivals to act as an independent intermediary between the various organisations involved in reception processing.

For further information contact Don Patterson, phone: (02) 6266 5165 or e-mail: [dpatterson@ema.gov.au](mailto:dpatterson@ema.gov.au) or Trevor Haines, phone: (02) 6266 5169 or e-mail: [thaines@ema.gov.au](mailto:thaines@ema.gov.au)

## Recent NSW disasters

**Sydney Hailstorm.** A devastating hailstorm in mid April caused extensive property damage in the inner suburbs with insurance losses estimated in the order of A\$1.5 billion. Some 34,000 homes were affected and over 50,000 vehicles damaged.

During the response, the NSW Government sought Commonwealth assistance to carry out temporary repairs to damaged properties. EMA coordinated the deployment of 400 Australian Defence Force personnel who assisted large deployments from the NSW emergency services in weather proofing properties over a 2-week period. In addition to processing a number of other minor requests for Commonwealth assistance, EMA provided 2500 tarpaulins from its Disaster Earmark Store to the NSW SES.

**Newcastle Disease.** In April–May 1999, an outbreak of Newcastle Disease in the Mangrove Mountain area north of Sydney threatened the poultry industry and resulted in around two million chickens being destroyed. During the height of the crisis, the NSW Government sought Commonwealth assistance with culling the chickens. EMA coordinated the deployment of ninety Australian Defence Force personnel who worked under the direction of the NSW Department of Agriculture over a two-week period. For further information contact Rod McKinnon, phone: (02) 6266 5328 or e-mail: rmckinnon@ema.gov.au or Don Patterson, phone: (02) 6266 5165 or e-mail: dpatterson@ema.gov.au

### **Australian Disaster Conference 1999: Disaster Prevention for the 21<sup>st</sup> Century (1–3 November 1999)**

The conference program and registration form are now available and early bird registrations are due by 3 September 1999. The conference program is filled with three days of interesting and challenging papers on risk assessment, raising awareness, reducing economic losses and social disruption, preparing for response and recovering from disaster. Local and international speakers will lead plenary sessions on the international perspective, active community involvement, national mitigation strategies and future directions and priorities for disaster management. For further information, contact: Conference Logistics, PO Box 505, Curtin ACT 2605, Australia, on phone: +61 (0)2 6281 6624, fax: +61 (0)2 6285 1336 or e-mail: conference@conlog.com.au or visit the Conference site on the EMA Homepage.

### **IDNDR Programme Forum Geneva 5–9 July 1999**

This forms part of the concluding phase of the International Decade for Natural Disaster Reduction (IDNDR). It provides a unique opportunity for countries, IDNDR national committees and representatives of civil society to share information and agree on a framework for future action. The final aim of the Programme Forum is to set up an action plan in order to build a culture of prevention for the 21<sup>st</sup> century. United Nations Secretary General, Mr Kofi Annan, will open this important event. Australia is being well represented and Mr Alan Hodges has been asked to lead a daily half hour session on success stories.

### **Final Report of Australia's Coordination Committee for the IDNDR 1990–2000**

A Final Report of Australia's IDNDR Coordination Committee was produced and will be tabled at the IDNDR Programme Forum in Geneva. The report will

soon be available via Internet. It provides a factual account of many of Australia's activities in support of the International Decade and records the significant contributions to the Decade made by Committee members, Australia's IDNDR Secretariat, project managers and many others. Only a limited number of the full report were printed, however copies of a 15 page Executive Summary are available from the Secretariat upon request. Contact details: idndr@ema.gov.au

### **Changes to 1998–99 IDNDR projects since the last issue**

EMA provided \$16,000 to the UNDP/SOPAC South Pacific Office to compile a report on Pacific IDNDR activities, similar to the Final Report of Australia's Coordination Committee for the IDNDR 1990–2000.

An illustrated brochure has been developed by Bush Fire Service, Fire and Emergency Service Authority of Western Australia (FESA)(IDNDR Ref 3/98). The brochure is a key part of a campaign aimed at warning the increasing number of independent travellers exploring northern Australia, encompassing the Kimberley Region, the Northern Territory and Queensland, of the prevalence of bushfires in 'the top end'; educating them about the Fire Danger Ratings, Restricted and Prohibited Burning Times, and providing bushfire and camping safety and survival advice. Many travellers hire four-wheel-drive vehicles or camper vans in a bid to explore northern Australia on their own without a full understanding of bushfires or the use of fire as a management tool in northern Australia. Brochures appropriate to northern Australia were produced and may be used as a basis for brochures in southern Australia. The free brochures will be distributed at festivals in the north, in airports, car and camper hire outlets, the Tourism Commission's Tourist Centres, National Parks, Royal Automobile Club (RAC), petrol stations and local tourist bureaux.

The Western Australia Department of Transport have produced a marine safety training video giving practical instruction on tropical cyclones and severe weather for mariners (IDNDR Ref 4/98). Copies of *Storm Alert – A Guide to Severe Weather at Sea* will be distributed to relevant departments in all States and Territories via Department of Transport networks. The video was produced with funding assistance from IDNDR and relevant industry groups. The main use of the video will be as a training aid for the new Tropical Cyclone Short Course for Uniform Shipping Laws Certificates of Competency and as a stand-alone pre-cyclone season refresher for vessels operating north of Geraldton. However, the content has been pitched at a level suitable for use by both recreational and commercial mariners for severe weather generally.

The *Brochure on Storm Tide Threat* in Queensland has been printed (Ref IDNDR 13/98). It is an abridged version of a technical report and is targeted at local government and private land use planners, engineers and other professional in Queensland. Since they began distributing the brochure, Queensland has already noticed a significant rise in the number of people requesting the more detailed report.

EMA/IDNDR provided \$8,000 for a survey of severe storm awareness in NSW to evaluate the effectiveness of different types of materials (Ref IDNDR 25/98). The

results have encouraged NSW to embark upon an awareness campaign along the lines of Victoria's Bushfire Blitz and to produce brochures for some high flood-risk areas which focus on a particular town, suburb or even street where reliable recent local flood information is available.

DGEMA provided funding of \$2,000 for a new project (Ref IDNDR 27/98): Translation and printing of action guides for refugees and survivors of torture and trauma to reduce the retraumatising effects of Natural Disasters. This project complements a recent initiative of NT Police, Fire and Emergency Services who produced action guides in six community languages (Chinese, Portuguese, Indonesian, Greek, Thai and Vietnamese).

### **IDNDR Education 2000**

A new education brochure, *Disaster Education Resources for Schools*, has been produced. It describes free and low-cost disaster awareness and education resources that have been developed in cooperation with EMA Disaster Awareness Program or IDNDR. The brochure will be sent by direct mail to teachers and primary and secondary school librarians as a means of promoting these resources. The brochure will also be available to place in Disaster Education and Awareness Resource Kits, distributed by State and Territory Emergency Services, and as satchel inserts for teacher association conferences and journals.

The *Are You Ready* 40-page booklet for Geography Action Week has been printed and distributed to geography teachers around the country. All response has been positive. Topics covered include emergency risk management, PNG tsunami, Wollongong landslide and bushfire. It also includes three pages on EMA and IDNDR disaster education resources.

The *Global Issues Natural Hazards* issue (March 1998) was produced by the Geography Teachers' Association of Victoria (with AusAID funding). It is aimed at geography teachers and contains background information and suggested activities on El Nino, the PNG Drought, the Indonesian fires and the Katherine flood. Once all back copies have been sold, it will be placed on the Geography Teachers' Association of Victoria-web site.

IDNDR has agreed to sponsor a primary school disaster awareness competition being run by the State Emergency Service in western NSW. We will provide six copies of the Get Ready Pack as supplementary prizes. This is the third year it has been run.

The IDNDR program has offered NSW \$10,000 as a contribution towards a new primary school age children's story book on natural hazard safety. It will probably cover severe storm, flood and bush safety, but later books may cover other hazards relevant to this age group, such as road safety and house fire. It has been written by Lawrence SES volunteers (who are also teachers) and won a National Bank Community Link Award earlier this year.

### **Projects approved for funding in FY 1999-2000**

Although the International Decade ends on 30 December 1999, Australia's Coordination Committee has committed itself to continuing the program until

at least the middle of the Year 2000 by funding one final round of projects under the IDNDR banner.

A list of projects which have been approved for funding in FY 1999/2000 can be found on the EMA Homepage.

## **What's on at AEMI**

### **National Studies Program**

**5-7 October 1999**

#### **Community Development in Disaster Recovery Workshop**

The aim of this workshop is to define and further develop the community development role in disaster recovery management. A comprehensive guide will be developed that will be a supplement to the AEM Recovery Manual.

**19-21 October 1999**

#### **Disaster Victim Identification for Mass Casualties resulting from Chemical and Biological Hazards Workshop**

The aim of this workshop is to initiate the development of an agreed national disaster victim identification response plan for chemical and biological hazard agents in the context of mass casualties. In addition the Disaster Victim Identification National Guidelines will be reviewed in order to accommodate the inclusion of chemical and biological hazard agents.

**15-19 November 1999**

#### **Building Relationships between the Emergency Services and Animal Health District Officers Workshop**

The aim of this workshop is to provide an opportunity for field officers from emergency services and animal health services to explore their respective roles and build collaborative relationships. A set of guidelines will be developed as a result of this workshop.

### **Courses**

AEMI staff are currently developing and delivering a new suite of training and education products based on the emergency management competency standards within the Public Safety Training Package. A one-day Introduction to Emergency Risk Management (IERM) course will be offered in the States/Territories as part of the extension program in the first half of the financial year 1999-2000. Three new accredited 3-4 day residential courses will be also conducted over the next two financial years, 1999-2000 and 2000-01. Their working titles are:

- Identify, Analyse and Evaluate Risks
- Determine Treatment Strategies
- Manage Treatment Strategies.

In addition the following courses will be offered in 1999-2000:

- Consequence Management to Chemical, Biological, Radiological, Incendiary and Explosive Emergencies
- Emergency Coordination Management
- Exercise Management

- Evacuation Management
- Management of Civil Defence Operations
- Recovery Management.

More information is available on the courses in the AEMI handbook which can be found on EMA's website: [www.ema.gov.au](http://www.ema.gov.au)

### **Applications Manual for Community Emergency Risk Management**

An applications manual for community emergency risk management is in the process of development. A theory model will follow. For further information contact Michael Tarrant, tel: (03) 5421 5292 or e-mail: [mtarrant@ema.gov.au](mailto:mtarrant@ema.gov.au)

### **Farewell Rob Fleming**

After more than 11 years, Rob Fleming departs AEMI on 7 July 1999 to undertake the role of journal editor on behalf of EMA. During this time he was the Assistant Director at AEMI and was responsible for the Australian Emergency Management Information Centre.

From its beginnings as a small, one-person library, Rob expanded, defined and marketed the role of AEMIC and of information services in emergency management to the position it now enjoys as a unique information resource nationally and internationally.

Rob transformed the library from one offering traditional services, to an 'information centre' with a wide range of electronic services, a clearing-house and a publishing role. It became a facilitator of national networks and became actively involved in promoting emergency management research. He also developed and managed the EMA Research Grants Program.

He implemented a full review of the AEMIC services in 1995, initiating a comprehensive range of recommended changes to services, products, staff roles, and work practices. Not least of these changes was the purchase and implementation of the new Sirsi database software which allowed EMA clients global access to the AEMIC resource database

In the course of his service at AEMI, Rob supervised the creation of a range of unique, detailed databases of emergency management information resources and a substantial collection to support those databases. He played a key role in the development of the Australian Emergency Management Thesaurus (involving considerable consultation with the States and Territories) and in initiating the development of the Australian Emergency Management Glossary.

Rob worked diligently to establish a strong link between information services and the Education and Training arm of AEMI. He undertook a number of workshops and seminars and he initiated and took a leadership role in the ALIES (Australian Libraries in Emergency Services) network on a national level and more locally, in Victoria.

His was a key role in the development and management of the 'current look' EMA website, liaising with EMA staff and the service provider. Rob gave a web interface to existing services such as AJEM and to new ones such as the Research Grants. Before this, he established the ADMIX bulletin board service.

Most notably, in the context of this publication, Rob developed AJEM from a small organisational newsletter into a fully-refereed, hard copy and electronic journal of international level of quality and distribution. For that, together with his other significant achievements, Rob will be remembered and missed by a host of his colleagues and others in the emergency management community across the nation and around the world.

## **EMA Publication news**

New and revised publications now available (as noted below in each category):

### **Australian Emergency Manual Series**

#### **Part III – Emergency Management Practice**

Volume 1

- Manual 2 – *Disaster Medicine (2<sup>nd</sup> Edition)*

Volume 2

- Manual 2 – *Safe and Healthy Mass Gatherings*  
(Copies available through your State/Territory emergency management organisation secretariats.)

#### **Part IV – Skills for Emergency Services Personnel**

- Manual 10 – *Flood Rescue Boat Operation (2<sup>nd</sup> Edition)*

(Copies distributed to relevant emergency agencies through State/Territory Emergency Services -Training Sections maintain distribution/amendment registers).

#### **Mt Macedon Papers Series**

- *Mt. Macedon Paper No 6/1997 – Record of the Safe Crowd Management Workshop* (Report delayed due to required alignment and coordination with 'AEM - Safe and Healthy Mass Gatherings' listed above).

(Mt Macedon Papers are available from EMA Canberra and Mt Macedon offices)

#### **Final Report of Australia's Coordination Committee for IDNDR (1990-2000) – Helping Communities in Australia and the South Pacific Reduce Natural Disasters**

Copies are available from the IDNDR Secretariat at EMA, Canberra Office.

#### **Orders**

EMA addresses for publications orders are as follows (first check above for appropriate EMA Office or State/Territory authority):

- Emergency Management Australia; PO Box 1020, Dickson ACT 2602, Australia.
- Australian Institute of Emergency Management, Main Rd, Mt Macedon Vic 3441, Australia.



*Provincial Secretaries planning the national drought assessment, Solomon Islands*

Urban areas were not assessed because they had ready access to food and resources. In the time available, it proved impossible to cover the whole country but every province was visited and enough information was gained to provide a broad picture of the situation and to assess priorities.

### Assessment processing

Transport and communications in Papua New Guinea are limited and there were very real problems in getting assessment information back to Port Moresby. Plans to have reports faxed back on a daily basis proved impractical and eventually the summary pages of the questionnaires were faxed as and when the teams could obtain access to a fax machine. The remainder of the report was posted in on completion.

The Data Processing Unit of the Department of Provincial and Local Government Affairs developed a Microsoft Access database into which existing census data was entered. As assessment reports arrived, the summary page information was immediately added to this database. For ease of presentation and understanding this information was then linked to a geographical information system from which maps were prepared regularly to show the degree of severity of drought impact. On the maps, severity was indicated by colour coding the average assessment category of each census division. The maps were widely distributed and became, even more than the tables produced from the database, the most widely circulated indications of drought impact.

### Results

The assessment found that virtually everyone in rural Papua New Guinea was affected by the drought to some extent. The summary assessment (Allen and Bourke 1997a) was:

- **777,000 people** in a critical, life threatening situation surviving on dwindling stocks of 'famine' foods and bush foods

- **100,000 people** would be in a similar situation by the end of October 1997
- **250,000 people** eating very small amounts of rapidly diminishing food from gardens, supplemented with 'famine' and bush foods. Many of these people would be in a critical situation in two months
- **130,000 people** still have food in their gardens, but this could be consumed within two months.

The assessment also found that about 100,000 rural people were experiencing critical problems with drinking water. These people were not always those suffering critical food shortages although some were experiencing difficulties with both food and water. The problems included drinking water shortages, access only to brackish water or access only to contaminated water. Throughout the country the majority of the rural population was using water from other than normal sources and many people had to walk for up to two hours to obtain drinking water. The number of people with serious

water supply difficulties was expected to increase rapidly in the following months unless substantial rain fell.

The health situation was harder to assess because rural health in PNG is relatively poor by world standards in normal times. There had been many reports in the local media of deaths caused by the drought but the Department of Health had no information them. The assessment found that most areas reported an increase in diarrhoea and skin infections but the nutritional status in young children was not generally affected. A number of deaths were reported to assessment teams but the Department of Health could not confirm that these were directly caused by the drought.

There has been subsequent criticism of this first assessment implying that it was alarmist and overstated the realities of the situation. This criticism can always be made when adverse forecasts are not fully realised. Any assessment that must be completed in a very short time is vulnerable to criticism, particularly when the critics have the advantage of hindsight and access to the results of later assessments. To some extent this first assessment was its own worst enemy since it spurred governments in Papua New Guinea and Australia to respond to the situation and alleviate the situation over the next few months. As a result, the impact of the drought on many of the people considered to be at serious risk was reduced.

### Initial drought response

The response to the drought has been well described elsewhere but the following summarises the main points.

- The Papua New Guinea Government decided that drought relief assistance would be provided to communities in census divisions with an average assess-



*The last well on Bellona Island, Solomon Islands still had water, but it was badly polluted. First rains had turned the vegetation green but it would not be productive for some weeks.*

ment category of 5, or 4 approaching 5.

- Relief would consist of rations of rice, flour and cooking oil to supplement the limited remaining food stocks.
- The Papua New Guinea Government would distribute rations to the eligible areas accessible by surface transport.
- The Australian Government would distribute rations to those areas only accessible by air.
- Non-government organisation support would be provided to provincial governments to assist them with the logistics of distributing the aid.

### The second assessment

The first assessment report recommended continuing assessment be carried out by the Department of Agriculture and Livestock but it was agreed in subsequent discussions that further assessments be carried out at two monthly intervals. AusAID funded a second assessment in November and December 1997, once again under the leadership of Drs Allen and Bourke.

The second assessment was carried out by 18 teams of two or three people, many with experience in the first assessment. Care was taken to task experienced members to carry out this assessment in different provinces so that there would be a second, independent, view of the impact of the drought and frosts to compare with the first.

Because of the difficulties of entering large volumes of information in computer databases in a short period, a new assessment form was prepared for this assessment. It consisted of a single sheet similar to the summary sheet of the first assessment. The main differences were that separate assessment ratings were required for food supply and water supply impact, and that teams were asked to assess the forecast ratings in each location in a further two months.

### Results

This assessment, with better-prepared and more experienced teams, was able to cover a higher proportion of the estimated 3.15 million rural dwellers. It found that some 40% of the rural population were seriously affected. Analysis showed (Allen and Bourke 1997b):

**260,000 people** in a critical, life threatening situation surviving on dwindling stocks of 'famine' foods and bush foods

**980,000 people** eating very small amounts of rapidly diminishing food from their gardens, supplementing these with 'famine' and bush foods. Many of these people would be in a critical situation in a further two months

**980,000 people** still with food in their gardens but this could be consumed within two months



*Major pest damage to the first green vegetable crop in northern Solomon Islands after the rain began.*

The water assessment showed:

**5,000 people** in a critical, life threatening situation with an extremely limited water supply of very poor quality

**363,000 people** with small amounts of poor quality water available locally or better quality water available only at a long distance

**853,000 people** whose local water sources were dry but with alternative sources available, possibly polluted and at a distance

No formal health assessment was carried out at this stage but teams reported an increase in the number of people dying from unexplained symptoms. There was also an increase in the proportion of young to middle aged adults dying whereas the normal pattern is to have a predominance of very young and very old people dying. An increase in the incidence of severe malaria was reported and there were indications that nutritional standards were falling.

### Continuing response

As a result of this assessment, the program of supplementary relief food delivery was continued with adjustments to the locations targeted. Attention was paid to delivering planting materials so that crops could be grown as soon as sufficient rain arrived. At that time the El Niño phenomena was forecast to last until the middle of 1998 and there was no indication that the drought would ease to any significant extent before March or even May. Further assessments were obviously going to be necessary and a system of monitoring would also be required.

### The third assessment

Shortly after the second assessment was completed, rain began falling in many parts of Papua New Guinea. Although it was not continuous and did not make up the shortfall, the falls appeared to alleviate the situation in some districts. The return of rain could not alleviate all problems, however. The various staple crops take between

three months and a year to grow and produce normal volumes of food. As most planting materials had been consumed or destroyed, it was obviously necessary to assess the impact of this rain and to plan recovery measures.

The previous assessments had been publicly seen as AusAID operations despite being carried out mainly by Papua New Guinea officials. The Papua New Guinea Government was keen to have any future assessments identified as national operations. In view of the experience its staff had gained in earlier assessments, responsibility for a third assessment was given to the Department of Agriculture and Livestock. Mr B Wayi, Director, Rehabilitation was appointed as coordinator. An Australian consultant assisted him and AusAID funded the assessment once again.

As the rain was reported to have alleviated the drought in all areas, the government decided to conduct the assessment only in the worst affected areas, ie those rated in Category 4 and 5 in the previous assessment either for food or water. This would require assessment of 244 districts in 17 provinces. Fourteen teams were nominated to carry out the assessment.

The questionnaire used in the second assessment had produced valuable results but the lack of specific questions in the assessment form had led different assessment teams to record their results in different ways. This had made interpretation difficult. It was decided that as this assessment was to address recovery as well as relief measures, it would be necessary to add questions on particular points to supplement a general assessment form that was slightly modified from that used in the previous operation in the light of changed conditions.

In view of the previous difficulties with processing questionnaire data, it was agreed



that only the summary form and drought ratings would be entered in the database, leaving analysis of the remaining information to be carried out in slower time.

The increased rainfall made access to some parts of the country very difficult during this assessment and it was not possible to reach all of the targeted districts. The assessment also produced some different assessment problems. Recovering crops in the lower Ramu Valley, which had been considered a seriously affected area, were found to be under up to 2 metres of flood water and had been lost yet again!

## Results

The third assessment (Wayi 1998) confirmed that production of early maturing staples and vegetables was increasing in many areas after significant rain had fallen. It was considered that recovery could have been faster if more seeds and planting materials had been available. Problems were being experienced with outbreaks of crop disease and with pest attacks while the sudden release of soil nutrients had resulted in the growth of excess leaves and vines at the expense of sweet potato tubers.

Nevertheless the number of people considered seriously affected had fallen sharply. Preliminary assessment of the food situation in all provinces except Western Province (where the team was involved in a helicopter crash and the assessment had to be repeated) indicated:

**34,000 people** in a critical, life threatening situation surviving on 'famine' foods and bush foods

**335,000 people** eating very small amounts of food from their gardens, supplementing these with 'famine' and bush foods.

Continued improvement was expected.

The water situation had improved even more dramatically. Only a few districts were reported to be in serious difficulty and the main problems in the category 4 areas were salinity and contamination rather than shortage.

**1,000 people** in a critical, life threatening situation with an extremely limited water supply of very poor quality

**75,000 people** with small amounts of poor quality water available locally or better quality water only at a long distance.

## Continuing response

As a result of this assessment, supplementary food deliveries were scaled down and concentrated on the worst affected districts. The assessment also supported other initiatives to assist recovery measures and improve resistance to future droughts. Coordination of water supply development activities was improved with particular attention being paid to those areas that had

experienced the worst shortages. Further research into drought resistant crop varieties was initiated and measures to increase the delivery of planting materials were implemented.

## Later situation

During a visit to PNG in July 1998 it was clear that, although some agricultural problems continued, the drought was now considered over. Recovery appears to have been quicker than expected by any of the assessments. Some crop shortages continued but these were more the result of slow growing periods than of any continuing rainfall deficit. Most of the pest and disease problems had eased and the second-planted crop of sweet potato did not appear to be suffering from non-production of tubers. There were no reports that any other root crop had experienced this particular problem.

## The 1997-98 drought in the Solomon Islands

Similar rainfall patterns also affected Solomon Islands in 1997 although later than Papua New Guinea. Total rainfall during the first four months of the year varied between 7% below and 28% above normal at the six recording stations. The higher recordings were made at recording stations affected by Tropical Cyclone Justin in March. In May the rainfall fell to between 29% and 89% below normal at all stations. For the period from May to December total rainfall between 32% and 58% below normal was recorded.

First reports that a serious drought was developing appear to have reached Honiara in September and October. Water rationing was imposed in some provincial centres in September although this was not unusual in those centres where the water supply system had been allowed to run down. More alarming were reports of school closures in the same month. By November, reports of problems had become so numerous that the National Disaster Council asked all provincial governments to report on the way in which the drought was affecting provinces. No guidelines were given for the report and the results were of varying quality. As a whole they did not give a clear enough picture for a decision to be made about the need for government intervention. However the situation in the off-lying islands of Rennell and Bellona Province was clearly serious and a technical assessment team was sent to these islands. As a result of its report, Bellona was declared a disaster area. Provision of water containers, pumps and supplementary rations of rice was approved but shipping difficulties resulted in the supplies being delayed until late December.

Those provincial reports that did describe the effects of the drought indicated that

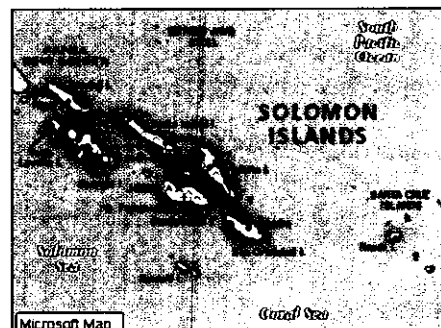


Figure 4: Solomon Islands

springs and streams were drying up and that staple crops were small and underdeveloped. Supplementary crops were also affected with vegetables dying in some areas and new plantings shrivelling up.

In December, AusAID agreed to fund a national drought assessment and to provide a consultant to assist with the process

## The assessment process

In some ways, carrying out a national drought assessment in Solomon Islands is easier than in Papua New Guinea. This is a smaller country with a population of approximately 300,000 people living on some 36 inhabited islands in an archipelago spread over some 800,000 square kilometres of ocean. However, infrastructure is generally less developed (although some sectors are better organised) and there is a serious shortage of professional staff. Inexperience and lack of funds for provincial officials to visit many parts of their provinces had been among the reasons for the poor reporting of the drought. Transport and other infrastructures are not well developed and have suffered badly from funding shortages in recent years. The country got into serious financial trouble under the previous government and a new government was seeking to turn the situation round. Cooperation between central and provincial government appeared to have improved. The security situation was good although at the time of the assessment there were still concern about the situation on the border with Papua New Guinea since Bougainville, which was still in a state of rebellion, could be seen from the northern Solomon Islands.

Again a rapid assessment was needed and the experience of PNG was of great benefit in developing the process. Once again there was no baseline government information available on normal agricultural and water supply conditions although the Department of Health had a valuable database.

Because of the close relationship with provincial government and the familiarity of their staff with their area of responsibility, it was decided to use provincial officials for the assessment with standardisation checks being carried out by the consultant and by National Disaster Office staff. A workshop

of all Provincial Secretaries was convened and an assessment form developed using the Papua New Guinea examples as a model. It contained some basic questions and a summary page that differed in requesting separate ratings for food and agriculture, water supply and health impacts of the drought.

The ratings agreed were:

#### Water

1. Unusually dry but no major drinking or other water problems.
2. Some inconvenience, usual water source not available, or water tastes salty.
3. Difficult, water available but at a distance and takes much time to collect.
4. Conditions bad, water in short supply or possibly polluted.
5. Extreme situation. Water very short or too salty or polluted to drink.

#### Food

1. Unusually dry, but no major food supply problem.
2. Some inconvenience. Staple food is short but other food available.
3. Difficult, with food short and some famine food being eaten.
4. No food in gardens, famine food only being eaten.
5. Extreme situation. No food available at all.

#### Health

1. Unusually dry but no health problems.
2. Some inconvenience, dry skin and other minor health problems.
3. Difficult, some disabled and old people and children unwell, increase in diarrhoea.
4. Conditions bad, more people sick, lives of disabled and old people and children at risk.
5. Extreme situation. Many people sick, small children, disabled and old people dying.

It was decided to base the assessment on the 171 rural electoral wards. Assessment teams were asked to visit 4 villages in each ward, trying to cover as wide a selection of large and small, coastal and inland villages as possible. The ratings would be averaged to give a rating for each province.

The assessment was complicated by two tropical cyclones that passed close to some outlying islands during December, causing wind and storm surge damage. Assessment teams were asked to report separately on this damage but it was impossible to segregate the impacts on the communities completely. The drought made some crops more vulnerable to damage and drought loss of some crops had made others more important.

The assessment actually started in January 1998 but transport and other difficul-

ties stretched the assessment period and some results were not available until March and April. Fortunately for the country, but unfortunately for the assessment process, rain began to fall again in December and there was reasonable rain in some provinces in January.

#### Assessment processing

All assessment forms were returned to the National Disaster Office by air for entry into a Microsoft Access database developed for the purpose. Arrangements were made for specialist agricultural, water supply and health data to be relayed to relevant departments for recovery and mitigation purposes. Arrangements were made with the Lands and Survey Office for ratings to be mapped.

#### Results

The assessment (National Disaster Office 1998) confirmed that although all provinces had been affected by the drought, the severity of the impact varied. In general the impact was considered to be less severe than in Papua New Guinea

The water assessment showed that:

**14,000 people** were experiencing serious shortages of safe drinking water or used water that was significantly polluted.

**33,000 people** were experiencing difficulties in getting safe water or had to walk long distances to collect it.

Worst affected were small islands with limited fresh water resources. Some of these people were using water so brackish that it made assessment team members sick.

The food assessment showed that:

**26,000 people** had no food left in their gardens and were surviving on famine food from the bush or supplementary rations from trade stores or supplied by relatives, friends or provincial governments

**29,000 people** had very small amounts of rapidly diminishing food from their gardens, supplementing these with 'famine' and bush foods.

By the time the assessment was completed, most provinces had had enough rain to start planting but the growing crops were being severely affected by insect pests. There was also competition for surviving food from pigs and birds. Planting materials were scarce.

The health assessment showed that

**7000 people** were suffering significant increase in diarrhoea, skin complaints (usually in areas with brackish water) and other health problems with old and very young people at risk

**33,000 people** were subject to significant ill health risks

The most commonly reported problems were diarrhoea, skin complaints, eye infections and influenza.

#### Response

The Solomon Islands Government arranged for supplementary food rations to be provided to the worst affected provinces to cover the expected growing period but the continuing rain meant that response needs were fairly small.

#### Future drought assessment

Emergency drought assessment is not an activity that has been found necessary in this region in recent years. Yet if the forecast increase in the frequency and severity of El Niño events occurs, it is an activity that will require increased attention. There will be a need for:

- collection of suitable baseline data;
- detection and triggering systems so that assessment can begin before the situation deteriorates too far
- preparation of software that will allow easy processing and mapping of information
- preparation of plans and supporting procedures
- identification and training of personnel to form teams in all countries likely to be affected.



Major pest damage to the first green vegetable crop in northern Solomon Islands after the rain began again.

- development of administrative and logistical measures to enable the assessments to be carried out quickly and effectively.

### Baseline data

In each vulnerable country, government will need to identify currently available information on water, agricultural, economic and health activities that may be vulnerable to drought. Information gaps will need to be filled. Having identified the activities and resources that may be vulnerable, resources will need to be committed to identifying the key indicators of drought in that country and establishing databases of 'normal' conditions for comparison purposes. Particular attention will need to be paid to the staple crops grown by subsistence farmers in remote areas since the response to their needs will be most difficult. These steps should be within the capabilities of all regional countries although some scientific support may be needed.

### Detection and triggering systems

Although the marked reduction in rainfall was clearly evident in meteorological station reports in both Papua New Guinea and Solomon Islands, the danger signals do not appear to have been recognised. In many countries, the value of such long-term climatic data does not appear to be recognised outside the meteorological and scientific communities. As a result there has been little attention paid to establishing systems that will detect significant trends and bring them to the attention of those most concerned so that appropriate responses can be initiated. The wider community, including many government agencies, has limited understanding of the value of climatic data. This is another area requiring early action that is well within the national capabilities.

### Software

The ease with which basic database recording programs could be prepared in Papua New Guinea and Solomon Islands shows that it should be possible to develop a more sophisticated and user-friendly program that could be adapted to the needs of all regional nations. Investigation may show that such a program is already available elsewhere in the world but, if not, it would have considerable export potential. A donor might usefully initiate such a project.

### Preparation of plans and supporting procedures

Drought is not unknown in the region and should be covered in existing disaster plans. However this is an insidious hazard with very long-term effects of differing complexity. The response, while it has much in common with the response to rapid impact disasters requires some special techniques. This is

particularly the case with assessment, which requires much more scientific and professional participation on a continuing basis than assessment of an impact disaster. Current disaster plans in the region make no more than passing mention of drought as a disaster. This gap needs urgent rectification in the light of recent experience. Simultaneously there is a need to prepare assessment and other procedures to support the plans.

### Assessment team identification and training

Identification of suitable people for assessment teams is difficult in countries where the professional human resource base is sparse. Yet it can be provided indirectly if the few professionals can share the key parts of their expertise with assessment team personnel with other skills. Accordingly, once assessment personnel have been identified, it is important that they receive training that would include questioning and analysis techniques as well as briefing by appropriate professionals such as agriculturalists, water engineers and health workers. There would need to be detailed refresher training before an assessment is carried out but the task would be reduced if groundwork had been done.

### Administrative and logistical support

It was clear in the assessments discussed in this paper that one of the key shortfalls to conducting timely national drought assessment is the shortage of experienced administrators available to be committed to running such an operation and the shortage of logisticians outside the commercial sector. Administrative staff can be made available if priorities are acknowledged but they will usually be from other areas and will require a settling-in period to become fully effective in assessment administration. This period can be reduced if suitable staff can be identified and trained in advance.

The shortage of logisticians and appears to stem from a lack of any development priority for this discipline. Suitable people are probably available in the commercial sector and these could be identified, trained and used if funds are made available.

In the longer term it is important that disaster management staff be trained in logistics.

### Conclusion

Competent, trustworthy assessment is important for any country after a disaster. In the absence of such assessments it is likely that other authorities and donors will continue to try to impose their own assessment before providing assistance. This

results not only in convergence and duplication (at least ten separate assessment operations took place after the Aitape Tsunami in Papua New Guinea in July 1998) but also in lengthening the suffering of disaster victims.

Drought assessment, like other disaster assessment, is a skill well within the capability of regional countries. The problem at present is that development of appropriate infrastructure and skills is not being given sufficient priority in the disaster management development process. Assessment looks easy but it requires skill and training if the results are to be accepted.

### Bibliography

The author was involved in a small way in preparations for the first drought assessment in Papua New Guinea, was a member of a UN assessment team in the country while the second assessment was in progress and was the consultant who assisted with the organisation of the third assessment. He was also the consultant employed to assist with the development of the Solomon Islands drought assessment. Much of the information used in this paper is drawn from personal knowledge and original source documents but the assistance of the following documents is gratefully acknowledged:

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# Counter-disaster planning in a paediatric hospital

## Nightmares

As the eyelids close and sleep drifts upon you a telephone call from work informing you of an incident involving 200 possible casualties has a certain way of helping you to focus extremely quickly!

Such was the call I received one evening following the collapse of a circus tent in a country South Australian township, far from Adelaide. Fortunately no one had life threatening injuries and while there were quite a large number of people with some degree of injury at the end of the day we only received two casualties at our hospital. However the situation could have been very different and the outcome horrendous... Near miss events such as these serve as a timely reminder to all of us and especially to myself and my own Emergency Department to look closely at our ability to cope in the event of a 'real' major emergency such as this. Most major incidents occur very unexpectedly and I had to ask myself that night 'Were we prepared! Could we cope if large numbers had been injured? What would our response have been? Would we have passed the test?'

## New beginnings

In 1995, a year or so after my appointment as the Nursing Unit Head of the Paediatric Emergency Department (PED), we saw major building developments occur with the Queen Victoria Hospital and the Adelaide Children hospital being amalgamated on the same site to form the present Women's and Children's Hospital (WCH). As the nurse in charge of the PED, I became aware that we had some very real issues to deal with in regard to our counter disaster plan. Having recently gone down the path of blending two hospitals into one new one it was very clear that it was a timely thing to review our practices. When I began to look closely at the plan I realised the impact of the building changes which had occurred, indeed some of the buildings mentioned in the plan were no longer standing. Clearly a total review had become an urgent necessity.

A 'children's' hospital is a very different place from that of an adult institution. In the PED of the WCH in Adelaide we see 35,000-40,000 patients per annum with a wide range of illnesses and injuries. We do not see the large volume of serious injuries from Motor Vehicle Accidents (MVAs) nor the Myocardial Infarctions of an adult

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hospital. However, we do see very sick children and when a child is seriously injured or ill things can change very quickly. We still find it necessary to have a knowledge of the first-line management of adult patients as at times we have to contend with emergencies amongst our 2000 staff and the many visitors who sometimes need attention with anything from headaches to infarcts.

## Review process

Recognising the need to review our counter disaster plan in early 1995, a formal Counter Disaster Planning Committee was formed and, as the head of an area likely to be in the 'front line', I became heavily involved. I have always believed that a well-planned attack is the best line of defence. Whilst our chances of having a major disaster are considerably less than many places complacency is not a good thing and to me it is very important to be well prepared and well practiced. Being very aware of the differences between an adult and paediatric hospital I felt it was even more important that the staff knew exactly what would be expected of them in the event of a major incident.

In reviewing the plan, with the committee's blessing I spent some time interviewing key players around the hospital asking how they perceived the current situation and how well they felt their own area would be able to respond should a major emergency occur. I also asked what changes they felt were needed to make their own plans more functional. In conjunction with this I took the opportunity to improve my own knowledge as widely as possible and this included:

- visiting other departments in major hospitals throughout Adelaide to research what they were doing with regard to major incident planning
- undertaking a training course at the Emergency Management Institute in Mt Macedon
- attending local lectures especially when renowned speakers were available.
- reading and educating myself as widely as possible on the issue, including referral to the Australian Emergency Manual of Disaster Medicine, the Internet and

papers relating to specific major incidents.

It seemed very important to me to ensure staff understood the current situation and that the revised plan to be prepared should be a functional and meet the specific needs of children. It was imperative not to develop something so complicated and long that it was impractical on the day. What was also very clear was that with children and young people specific issues are likely to be encountered such as:

- it is very important to have staff well trained in children's emergency medicine and paediatric advanced life support available
- there is a need to provide a wide range of sizes of equipment to cope with all age ranges
- emotional issues and parental anxieties are likely to be considerable and social work and counselling support will need to be available for both families and staff
- Whether we like it or not the combination of children and injury make good headlines so we need to anticipate that there may well be lively interest from the media and therefore need to cater for them.

## Action plan

- A review of the current areas identified for inclusion in the plan (Some areas as previously identified had been demolished in the recent rebuilding programme)
- To develop a simple and functional plan for the hospital.
- The plan should be developed to be user friendly to the most inexperienced person likely to be involved and based on accepted standards of practice.
- Being a paediatric hospital the plan should be drawn up to deal specifically with the needs of children.
- To ensure all departments developed plans to meet the needs of the hospital as well as their own needs and which would meld into the main hospital plan effectively.
- To develop a control centre facility close to the emergency department which could be fully operational within minutes of declaring a major incident (the previous centre was on the far side of the hospital with minimal communication facilities available).
- To develop a hospital wide control team and a means to access these people or alternatives quickly.

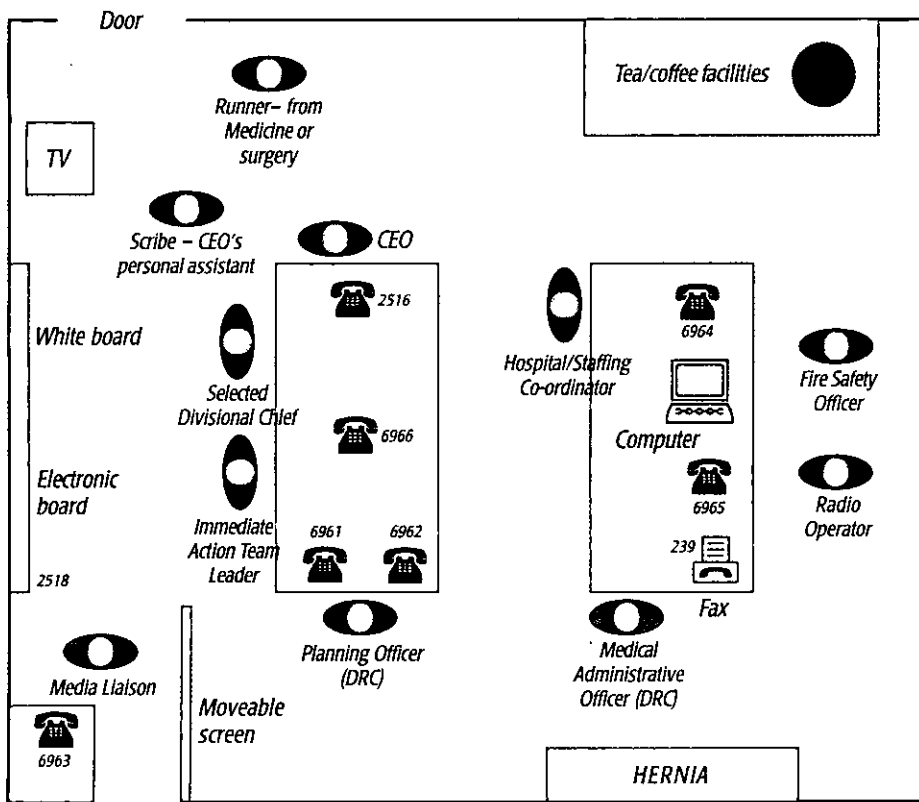


Figure 1: Control Room layout (Paediatric Emergency Department seminar room)

- to test and evaluate the plan regularly, by use of both desk-top and operational exercises.
- to include in the plan strategies to deal with various specific incidents, eg How to cope if we 'became' the disaster or how to cope with chemical incidents.

### Starting point

Order and planning is vital in counter disaster management, so our first thoughts were to develop strategies. We had recognised that while we needed a 'live' main hospital plan we also needed each area to develop individual plans, which would link into the whole as well. We had become very aware of the need to relocate our control room to allow it to be closer to the PED and to provide more effective communication to the hospital as well as to any outside agencies who may be involved in an incident.

### The Control Centre

The designated control centre was identified as the PED seminar room. This was closely located to the main area of the department but out of the immediate line of fire was. The hospital has taken the issue of our ability to provide an appropriate response to major incidents seriously and as a result has set aside an annual budget to allow restocking and replacement of items to take place. We were also given a significant initial allowance and have been able to purchase a number of items urgently needed to allow this room to be set up within minutes of declaration of an emergency. This has been a cost-effective exercise as the room is also used for education and some of the equipment purchased

is able to be used for both. The new centre contains a floor plan of the layout and how to set up the equipment, as well as an action plan list of what the first person to arrive should do etc (see Figures 1 and 2).

The equipment also included clearly embroidered tabard tops for staff to wear which identified each person who would be in the room and their particular role. We were very fortunate to be able to call upon the help of a talented member of our own staff to design and make these, which helped us to keep our costs to a minimum. Each top has a pocket in which is placed a pen and a role card, again reaffirming each individual's prescribed role and tasks. We also made similar tops but in a different colour for the team of people to be involved with the victims out in the actual department. Experience has showed that in the heat of the moment it was very easy with the resultant anxiety for people to forget or become confused about what they were supposed to do and it was therefore very important for the role cards to be available. It was seen as imperative that everyone knew who to go to by role and not by personal name as this can be a source of confusion when a large number of people are working together (see photo).

The room has been equipped with nine telephones, a TV, video and radio, photocopier and fax as well as connections to the state Hospital Emergency Radio Network in Adelaide (HERNIA) to allow immediate and constant link up with emergency services and the state control centre should this be activated. The room also houses computers

### What to do first

#### Information for the control centre

First person to arrive or controller will check that the following has occurred

If the equipment for the room is not already there collect from the disaster cupboard

1. Set up room according to plan on the door.
2. Ensure centre table phone lines connected to corresponding connectors on the ceiling
3. Turn on computer to network
4. Bring in electronic media board
5. Plug in the HERNIA phone
6. Ensure all staff arriving don tabards indicating their role
7. A fax machine from the secretaries office can be moved to the control room should this be necessary. Likewise other computers are available in the MUH and NUH office.

Controller will allocate any specific roles as he/she desires.

- All staff take instructions from the Controller as they arrive.
- Controller will allocate a person to be the receptionist (usually a DRC). They will proceed with the reception documentation to the main reception desk in the entrance way and document arrival of all staff.

#### In the Control Room

- All telephone calls MUST be logged on the sheet provided.
- All requests for anything must be entered on an event sheet.
- The controller will complete a situation report each hour (or as appropriate).

Figure 2: What to do first in the Control Centre

which are networked into current programmes used by the hospital staff and also for monitoring the patients while in the department throughout the duration of an incident on the Health Automated Systems Emergency Departments (HASED). In the event that power supply becomes an issue during an emergency the control centre has been isolated in its entirety on the hospital emergency generator system.



Tabards are used to delineate roles

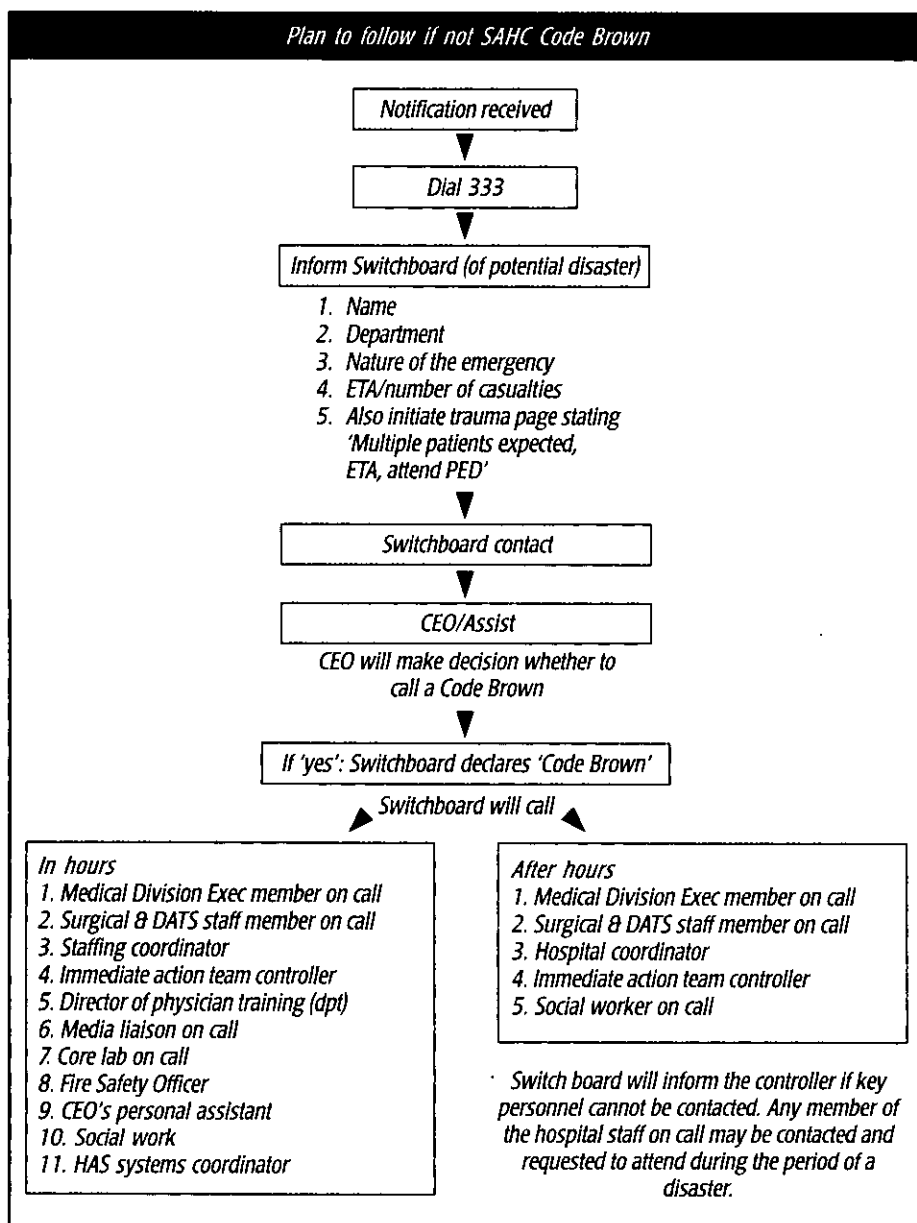


Figure 3: Plan to follow if not SAHC Code Brown

Once an incident has been declared, the staff who know they are involved are expected to attend the control centre without delay. A list of the control team personnel and their telephone numbers is kept in the Control Centre, Emergency Department, CEO's office and with the telephonists. The plan is set up in such a way that it is quite clear on arrival that if a Patient Support Attendant (PSA) has not yet set the room up then the first team member to arrive should do so according to the displayed layout of the room as described in Figures 1 and 2.

### Initial response

While the plan has a full and comprehensive explanation of what to do an initial response has been developed in an algorithm style as this has been shown to be easy to follow especially for the inexperienced staff member who may find themselves in the line of fire on the day. This has drawn up so that any member of staff would be able to follow the instructions if they received a call

informing them of an impending incident (see Figure 3).

This included:

- what details to take from the initial caller
- what to do
- who to contact
- plan of action for both in and out of hours.

As previously stated, linked with this main hospital action plan, each department or division of the hospital has also reviewed or developed a comprehensive plan of their own which links clearly into the main plan.

### Blank minds

Developing a plan for the PED took a considerable period of time to achieve. I was very aware that the previous plan contained pages and pages of really useful information but it would have been very hard to decipher and pick out the important points needed to put plans into action.

To help overcome this I have developed a small immediate action card (see Figure 4). Staff are encouraged to carry this. It is also strategically placed near the triage area so

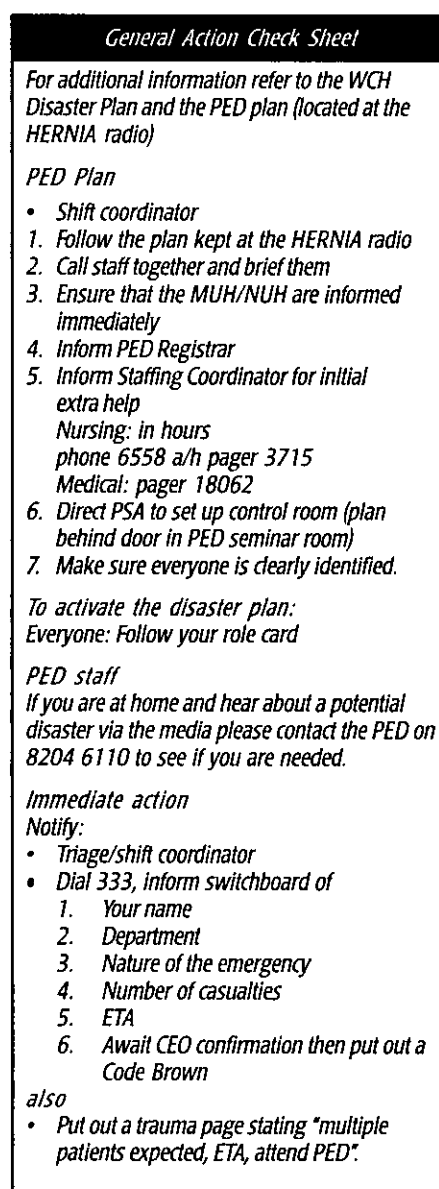


Figure 4: PED Major Incident Counter Disaster Plan General Action Check sheet

that if 'the call' should ever come when the mind goes blank, as happens to us all, there is something to bring you quickly back to reality and start the staff off in the right direction. Once the first call has been dealt with the card directs the reader clearly onto the main plan.

### Individual roles in the PED

Individual roles have been defined for each of the main players in the PED. Each member of the staff stays responsible for the area they have already been allocated to for the shift eg the resuscitation room nurse looks after Area A which is the resuscitation area (see Figure 5). They have cards to guide and enable them to coordinate their given area. Assisting staff sent in to help from outside areas will be given a patient load, directed to an area and instructed to stay with that patient under the guidance of that particular area coordinator. Anything they need they should request from the coordinator as that is the person who knows the area best and it is appropriate for them to be locating

equipment needed thereby leaving the staff sent to assist free to concentrate on the care of the patient. The system is applied across the whole discipline of staff including the Patient Support Attendant (PSA), medical and clerical staff as we assumed the same principle will apply.

Each member of the departmental team will as previously stated be allocated a tabard with role card to clearly indicate what their area of responsibility is and to whom they are responsible. The role and task card provides them with appropriate tasks to do in preparation for the arrival of patients through to eventual standdown. On the bottom of each card are the telephone numbers individuals may need during the incident including the appropriate number to ring if they need to contact the control centre.

### Triage

Triage will occur at the doorway and will be carried out by the triage Registered Nurse (RN) for the shift and the senior doctor. Both are experienced in emergency assessment of children. The role card the individual carries clearly guides them to set up the area with the appropriate equipment, including computer. A network point has been installed for this purpose at the entranceway. As the patient arrives they will be triaged and hospital identification label applied using prepared identibands from a notes pack. The notes and a clinical equipment pack for that patient will then be placed on the barouche, and the patient allocated to an area. A doctor and nurse from staff, who have been sent to assist, are asked to wait by the area. They will then be assigned to the patient and proceed with the patient.

### Equipment

<p><i>Area A Team Leader (Resuscitation Rooms 1 and 2)</i></p> <p><i>(Team Leader is the RN allocated to the Resus/Treatment rooms)</i></p> <p><i>Wear tabard stating Area A Team Leader</i></p> <ol style="list-style-type: none"> <li><i>1. Receive briefing from Shift Coordinator/NUH</i></li> <li><i>2. Prepare Area A</i></li> <li><i>3. Check oxygen and suction</i></li> <li><i>4. Prepare to take 3 patients (1 in Treatment Room, 2 in Resuscitation Room) Prepare barouches.</i></li> <li><i>5. Prepare IVIs, monitor equipment.</i></li> <li><i>6. Open DDA cupboard (give 40 ampoules of morphine to Field Medical Teams).</i></li> <li><i>7. Allocate roles to nursing staff as they arrive.</i></li> <li><i>8. Co-ordinate area throughout disaster. Review available staff and act as runner. Allocate relieving staff to the patients.</i></li> <li><i>9. Following Stand Down re-equip area for normal daily use. Be involved in debriefing as appropriate.</i></li> </ol>
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Figure 5: Paediatric Emergency Department Sub Plan

Considering equipment for a 'children only' facility is a complicated undertaking. Children are not always small and many teenagers are in fact as large as the adults who may be treating them. The Paediatric Intensive Care Unit (PICU) staff have developed excellent equipment for the hospital, based on the Thomas packs. Thomas packs are designed specifically for field medical retrieval teams. The backpack can be purchased and filled with appropriate equipment, or purchased empty and then purpose filled by the hospital, as the WCH have decided to do. The WCH packs consist of six identical backpacks. Each pack has equipment to cater for all ages from birth to adult, and provides airway and oxygen equipment, intravenous access and lines for four

**Each member of the departmental team will be allocated a tabard with role card to clearly indicate what their area of responsibility is and to whom they are responsible. The role and task card provides them with appropriate tasks to do in preparation for the arrival of patients through to eventual standdown.**

patients. It can then provide 1.5 litres of fluid for four patients and advanced life support for two more.

There is also a selection of extra items such as drugs, chest drains and dressings etc. Consideration has been given to ensure the right equipment is taken to cater for all age and size ranges for twenty patients in two sets in as lightweight and concentrated a form as possible. With children a wide range of sizes of equipment is needed, and as a result a one-size fits all approach cannot be used. This makes equipping a children's team very costly and it can be bulky to carry if not carefully planned. PICU has also designed a very specific softpack to hold all the equipment together for transporting to the site of an incident, fixed to the stretcher inside a plane or ambulance.

Within the emergency department we have also purchased a wide variety of sizes for the emergency equipment needed. This

also included notes for up to fifty patients. Each set includes all age-group charts and forms pre-stamped and labelled for ease of use etc. Triage equipment has been packed together and includes wipe boards, markers, clinical packs containing emergency first line equipment to deal with ABC for each patient, as well as the laptop computer and its connections. There is also extra equipment to provide advanced life support for patients in areas other than our standard resuscitation area, and extra intravenous fluids. We have included in the department a Braselow kit which has added significantly to the variety of disaster equipment items available. This is made up kit of equipment called a 'flying carpet', a commercially-produced kit containing aged related sealed packs of equipment to deal with ABC. Much of the equipment is single use only and each section of the pack is clearly labelled. Each section of the pack is affixed by velcro to the inside of the case lid and rolls out for easy access, hence the name 'flying carpet'. The kit also contains an emergency tape which can be used as a quick guide to calculate the size of equipment needed to treat a child as well as drug dosage. The principle being that the tape is laid alongside the prone child and the length determines the equipment size and drug dosages. The tape is available for purchase separately or as part of the whole kit. The kit has considerable potential for country and rural areas who need to have specific equipment prepared and ready for the severely injured child. The tape as a separate item is an extremely useful tool to keep in any trauma or disaster kit as a reference tool to use in emergencies when time matters. All equipment and drug dosage are size and weight related in children and the tape means relative accuracy can be achieved when little other details about the child may be available to assist the clinician in the initial stages of a major incident. A clearly labelled cupboard for storage of this equipment and its contents is available and these are checked regularly. This was something that was important to instil in staff—that equipment must always be checked, in date, and fully functioning. It is very easy to think the task is 'done' when it can be forgotten.

### Field medical teams

The PICU staff, as stated, have developed kits of equipment to take out to the scene of an incident should this be necessary. It is anticipated that they would be able to supply two field medical teams with equipment at any time. Both the medical and nursing staff in that area are highly skilled in retrieval of sick and injured children, which is quite

different from the management of adults. It is imperative that staff who are going to be involved with injured or sick children at any stage have had such training. Advanced Paediatric Life Support (APLS) and Paediatric Advanced Life Support (PALS) courses are available for medical and nursing staff to attend and compliment emergency response training and Emergency Management of Severe Trauma (EMST) as well.

### **Communication and signs**

Reading instructions relating to major incidents communication often seems to be a real issue. In our own counter disaster plan we have given this a lot of thought, and made every effort to ensure these problems are kept to a minimum. We found this to be true in our operational exercises and as a result have added considerably to the signs and directions for even the most simple of things.

Children injured in a major incident in particular cause great emotions to be raised and communication and the rights of families become very important. We have made sure in preparing this plan that there is a well-defined area providing individual rooms for counselling and information to be given to families. The press has also been catered for near to the emergency department but not 'in the way'. If we keep them too far away they will 'break out' and get to us anyway, and it is often very helpful to have them on our side.

### **Practice works towards perfect**

Since the instigation of this plan we have held one desk-top exercise and two operational exercises with a further exercise planned. In addition to this the PED has routine emergencies mocks as part of its current education programme and we include counter disaster in this from time to time. For each operational exercise we have involved local high school students and ambulance staff to help us practise. Each exercise has proved a huge learning curve and each one related to a slightly different area, which we feel to be very positive.

The first operational exercise gave us the opportunity to look at a number of specific areas. Our disaster review had proved to be a major undertaking and in many ways we really had to start almost from scratch. This exercise was somewhat nerve racking to me as I felt a huge responsibility to ensure it all came together well. We arranged with the ambulance service to help authenticate the exercise and they were extremely helpful. The scenario used was a bus crash and as far as possible we tried to replicate the injuries that would have occurred.

To confine cost, and as this was our first practice of the new plan, we felt it was important to do this during working hours.

It became a major exercise in itself to encourage some areas of the hospital to 'play' but the assistance of the CEO and the Chiefs Operating Group, who helped by authorising the exercise with their 'seal of approval', its importance was emphasised to all staff. Being the first such scenario for some years we decided to let staff have some idea that a practice was about to happen in the next few days. It was interesting to note the huge increase in phone calls I received as the day approached and staff from other areas realised this was really going to happen and they were feeling very vulnerable!

On the day we had twenty-six victims sent to us in rapid succession over a two and a

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**The press has also been catered for near to the emergency department but not 'in the way'.**

half-hour period. Many of the injuries were very severe and would certainly have stretched us considerably if it had been a real situation.

After the exercise had been completed we encouraged all staff involved, especially the control room staff, to stay and debrief over a buffet lunch. On this first occasion specific issues arose that we were able to resolve quite easily. These pertained mainly to communication and staff in other areas still unsure of their own roles, but also made us aware of the very significant role of the social work and counselling teams with specific emphasis on the needs of children and very anxious parents. The exercises encouraged many to go back and look more closely at their own plans to ensure they fitted into the whole plan to make the jigsaw complete. To realise the need to do that was in itself a very positive outcome. We had not

expected the exercise to be perfect and we feel it is important that staff realise this will never be a perfect procedure. This is because people are involved and it is an unusual and scary event and things change constantly. However it is important to be as prepared as we can be.

We recognise our learning will never stop and there are likely to be new and unexpected hazards to address in the future. In the future we intend to look more closely at some of the other problems we might one day have to face, such as:

- how would we cope if we were the disaster?
- as Adelaide sits on main geological fault lines, what would be our response to an earthquake?
- could we manage a chemical incident?

All these issues will no doubt be very challenging, but the preparation of our response has had other very positive effects. It has helped us to pull together as a team—surgeons and physicians, radiographers and social workers etc.—and has shown that in these and other similar circumstances we all have valuable knowledge to share. It is a time when roles may overlap and intertwine, to allow us to achieve the most effective management we can for the victims we treat. It has taught us that it is likely we will not get it completely right on the day and that does not matter because every incident is unique. What is important is that we are confident we have done our utmost to provide an effective, clear simple and functional plan which is easy for everyone to follow ... a plan that has been regularly reviewed and practiced and that will allow all staff to provide care of the highest possible standard possible for the victims of any incident that they may be called upon to treat.

### **Glossary**

NUH	Nursing Unit Head
PED	Paediatric Emergency Department
APLS	Paediatric Advanced Life support
PSA	Patient Support Attendant
HASED	Health Automated System for Emergency Departments
MVA	Motor Vehicle Accident
HERNIA	Hospital Emergency Radio Network In Adelaide
CEO	Chief Executive Officer
PICU	Paediatric Intensive Care Unit
ABC	Airway, Breathing and Circulation
PALS	Paediatric Advanced Life Support
RN	Registered Nurse
DRC	Divisional Resource Consultant
EMST	Emergency Management of Severe Trauma

### **References**

Australian Emergency Manual—Disaster Medicine.



# Registered Engineers for Disaster Relief (RedR) Australia and its work in Papua New Guinea and other places

**R**edR Australia, incorporated in 1995, operates a register of experienced and trained engineers ready for deployment in disasters, whether natural or man-made. In the past three years it has dispatched some 40 engineers to assist UNHCR in locations as far apart as PNG, Central and West Africa, Bosnia and Chechnya, principally in the fields of water supply, sanitation, shelter and infrastructure at refugee concentrations under the care of UNHCR. This article describes the role of engineers in humanitarian emergencies, the mission, organisation and work of RedR Australia, and describes some of the challenging tasks undertaken by its members. Most recently this includes dispatch of two specialists for de-mining work in Bosnia.

The article also covers the work of the RedR Society, a technical society of IEAust, the principal supporting body for RedR Australia, and canvasses the possibility of incorporating engineers from PNG and other countries in the region into the RedR Australia database and training programs.

## Introduction

Humanitarian aid agencies today are responding to two very different types of humanitarian disasters. There are always emergencies caused by natural disasters, such as floods, droughts, or earthquakes. The more complex emergencies or, as they have been appropriately described, 'total disasters', involve large population movements, collapsed governments, violence and slim chance of a return to normality. These emergencies require not only humanitarian commitment, but also assume great political responsibility.

While many aid agencies appear to be very capable of responding to natural disasters, there is a general concern regarding the adequacy of current levels of preparedness and capability to respond competently to complex crises. The toll of human life in Complex Humanitarian Emergencies is high, illustrated clearly in Rwanda, Bosnia, and Somalia. Populations flee to escape rival factions or because supportive infrastructures are destroyed. Complex Humanitarian Emergencies cause people to lose their traditional coping strategies that helped them to survive during natural disasters.

by Andrew B. Sinclair, AM and Elizabeth Stanic, Red R Australia

The greatest loss of life in refugee situations occurs as a result of poor water supplies, sanitation, communications and logistics, all areas in which engineers are make a valuable contribution. Engineers enable greater speed in providing and improving essential infrastructure, and therefore have a major contribution in saving human lives. Their assistance in construction and improvement of roads, bridges and shelters also has a direct impact on food aid and medical assistance. Some four million people have benefited from the work of Australian engineers through RedR since 1995. The value of engineers in relief situations has grown steadily, and is still to be fully realised by some humanitarian agencies. Having access to engineering expertise provides affected communities with the possibility to acquire skills that would normally be unattainable. Skill transfer is considered essential to ensure the retention of any improvements.

## About RedR

RedR Australia is an impartial and independent agency that relief agencies can approach when they require experienced engineers, anywhere in the world, in the aftermath of a disaster. It is a streamlined, non-profit organisation of working professionals supported by the industry. RedR Australia is fast and flexible in its response time, with a great degree of humanitarian commitment in extremely difficult working environments. RedR engineers are working in a variety of sectors: water, sanitation, shelter, roads and bridges, mechanics, as well as hydrogeologists, logisticians and other allied disciplines.

RedR selects and trains appropriate staff with professional qualifications, experience and aptitudes. On request, competent and effective personnel are provided to humanitarian relief agencies world wide to relieve suffering in disasters. RedR does not employ disaster relief workers itself, or run its own field programs. The main work of RedR Australia to date has been in providing assistance to the victims of man-made

disasters, but the resource is available to assist in any type of emergency.

## History and Formation

RedR was launched in Australia by the late Fred Hollows AC, who issued a firm challenge to Australia's engineering community to mobilise its collective skills, experience and resources for the benefit of the suffering and disadvantaged of the global community.

RedR Australia was incorporated in 1995 as a company limited by guarantee, with The Institution of Engineers Australia, The Association of Consulting Engineers Australia, The Association of Professional Engineers, Scientists and Managers Australia, and The Institute of Municipal Engineering Australia as its founding bodies.

RedR gets a high degree of practical and professional support from the peak bodies and major employment groups within the engineering sector in Australia. The four founding bodies represent the engineering profession in Australia and all its disciplines. The wide membership offers an optimal pool of human resources, with their involvement endorsed by their employers.

## Activity description

The key to a successful deployment is a well-selected professional. RedR Australia's register has over 80 interviewed members, 65% of whom have completed the relief training course. The office maintains the register up to date, so ensuring quick response to requests for assistance. RedR has a sophisticated database with a powerful search engine, which allows quick and accurate selection for the post. RedR also has developed comprehensive procedures, which enable selection of personnel, monitoring their professional development, availability and other relevant aspects. The interviewing procedures are rigorous. The purpose is to assess carefully applicants' skills and attributes and to decide whether the person is suitable to be on the Register. The interviewing panel is comprised of three persons: technical expert, humanitarian worker (often an NGO representative) and the RedR Australia Executive Officer.

The engineers on the register must undertake a RedR Australia relief training course. The course is conducted on a regular basis,

is of the highest standards and is recognised and endorsed by humanitarian agencies worldwide.

RedR Australia has a wide spectrum of skilled technical personnel, and has been able to deploy an appropriate person to 95% of the requests from UNHCR. One of the reasons UNHCR is happy to maintain this arrangement is the guarantee that the engineers' technical quality and awareness of humanitarian issues is of a high standard. The volunteers are not seeking employment, they do it for various reasons, such as a desire to help others, professional development and overseas experience. The arrangement provides a cost-effective alternative to other potential sources of technical personnel.

### Deployment of engineers under the UNHCR/RedR Australia Program

Since 1995, the principal role of RedR Australia has been to supply experienced engineers to the United Nations High Commissioner for Refugees (UNHCR). This program is funded by, and strongly supported by the Australian Agency for International Development (AusAID).

The first deployments under this program took place in April 1995, when two engineers with experience in water, sanitation and roads were deployed to UNHCR refugee camps in Karagwe, Tanzania, and one with water supply experience to Arua, Uganda. All assisted in the development of infrastructure to accommodate a large number of refugees who had fled the genocide in Rwanda. These were followed by a further seven engineers in 1995, twelve in 1996, four in 1997 and fourteen to date (July) in 1998.

These deployments were specialists in hydrogeology, water supply, sanitation, site planning, shelter, roads, building structures, mechanical engineering, logistics and, most recently, demining. They were deployed to many countries, including Chechnya, Tanzania, Zaire, Mali, Liberia, Yemen, Bosnia Herzegovina, Tajikistan and PNG.

In these humanitarian emergency postings, RedR engineers were faced with complex social and human situations. The RedR training program, described in detail in a following section, places particular emphasis on the development of personal skills, and cultural issues that are likely to be encountered in these places.

### RedR Australia and related bodies

RedR Australia is an accredited member of RedR International and has signed on to the Fundamental Principles and Operating Principles of that body. RedR International, based in Geneva, coordinates and assists the work of individual RedR bodies and requires that certain fundamental principles of operation be adhered to.

RedR Australia maintains close working relationship with RedR (UK) which is the original RedR body and from which RedR Australia originally derived its inspiration. The UK body has been of invaluable support, in particular with training programs, database formats and a web site. RedR Australia and RedR (UK) also share mutual access to each other's database and register of members. It is of interest that RedR (UK) includes in its membership engineers from other countries, such as Ireland, France and Holland. This sets a precedent that RedR organisations are not exclusive to particular countries and may serve a regional role. This situation could well apply to RedR Australia in the future, particularly in relation to Papua New Guinea.

RedR Australia is a member of the Australian Council for Overseas Aid (ACFOA), which provides access to its many member bodies' programs and resources. RedR Australia is also a signatory to the ACFOA Code of Conduct, which defines standards of governance, management and financial accountability for use of donor funds.

The Institution of Engineers, Australia maintains strong linkages, both by providing rent-free office space and other logistical support to RedR Australia, and through the RedR Society, which is outlined below.

### Training

It is essential that engineers prepared for deployment at any time have the necessary training and familiarity to handle the situations and problems that may arise in the field. RedR conducts a 4-day Foundation Training Course on a regular basis, the aim being to better prepare relief workers for life on assignment.

- The training objectives are designed to:
- examine the causes of disasters and gain an insight into the problems faced by people affected by disasters
  - review the international humanitarian relief system, the function of relief agencies and the role of individual relief workers
  - develop practical techniques to increase personal effectiveness in difficult circumstances, including security and medical issues
  - participate in team activities and review this experience
  - explore cross-cultural issues
  - clarify participant skills and identify further individual development needs.

The course was structured around four major themes as follows:

- people affected by disasters (e.g. refugees, displaced people).
- the international relief system and some of the agencies involved

- personal effectiveness and motivation in relief work
- teamwork and leadership.

The role of the relief worker is the central focus throughout each of these themes. The key practical activity is a major team exercise in planning a relief operation. This exercise is conducted in a controlled field environment.

RedR UK and RedR Australia have jointly facilitated the course. Resource persons have included members of many organisations such as UNHCR Geneva and Canberra, Mediciens Sans Frontieres, Austcare, the military and other specialist agencies.

It is RedR Australia policy that all employees attend the foundation course, although it is acknowledged that this requirement has had to be waived on occasions in emergency situations.

### Finances and corporate support

RedR was initially assisted by generous donations from the NSW Public Works Department and others, and by donations and 'soft' loans by the founding bodies at the time of incorporation. It also received a number of generous donations from individuals at that time.

A program of corporate sponsorship was initiated in 1996 among Australia's major companies in the contracting and consulting fields. To date *Major Corporate Sponsors* (committed to \$8000 or more for three years) include Thiess Contractors Pty Ltd, Ove Arup and Partners, Sinclair Knight Merz and The Institution of Engineers Australia, and a *Group of Four Consultants* comprising McMillan Britton and Kell, Snowy Mountains Engineering Corporation, Douglas Partners, and Hyder Consulting.

It is our intention to have RedR Australia recognised as the 'charity of choice' in Australia's engineering community, and there is clearly a long way to go before this is achieved. A modest but increasing income stream is also received from subscriptions to the RedR Society, which is a valuable supplement to income from other sources.

### The RedR Society of IEAust

Soon after its formation, it became apparent that RedR Australia would benefit by drawing support from a wide spectrum of Australia's engineering community, whether or not they had volunteered for overseas work. Subsequently, the RedR Society was formed as a Technical Society of IEAust in 1996.

The objectives of the RedR Society are:

- to act as a resource, support and funding base for RedR Australia by assisting in training programs, recruitment and fundraising
- to facilitate networking between persons on the register of RedR Australia, and

others who support the objectives of the organisation through newsletters, meetings, reunions, home page and other means

- to facilitate and conduct meetings, conferences, seminars, workshops, and encourage the preparation of technical papers on disaster response and humanitarian relief
- to act as a resource of technology and expert advice to IEAust in the technical areas of disaster response and emergency management, and to act as the Institution's public voice on humanitarian issues
- to liaise with associated bodies in the field of humanitarian assistance and disaster relief.

The Society now has over 350 members and has an active Chapter in the Canberra and Newcastle Divisions of IEAust.

### **RedR Australia and Papua New Guinea**

UNHCR is responsible for management of four refugee settlements at East Awin in the highlands near the West Irian border. As in most parts of that country, generally blessed with abundant and reliable rainfall, little or no thought had been given to security of water supply in the event of drought.

As the water supply in the East Awin settlements failed, RedR Australia dispatched, at UNHCR's request, Sarah Bish, a hydrogeologist, to review the situation as a matter of urgency. Following nine days in the field Sarah produced a practical and comprehensive report setting out the immediate, short- and long-term measures needed. The project is now being implemented with the assistance of an Australian Government grant, under the supervision of John Marsh, a project engineer from RedR.

PNG has a large number of engineers with experience in coping with problems with limited resources and in difficult situations. Such people are the backbone of RedR. It is probably unreasonable to expect the engineering community in PNG to mobilise the resources and infrastructure to operate and independent RedR in this country. It would also be both difficult and costly to establish the connections with international agencies that would call on their services.

The writers are sure that, if requested, RedR Australia would be more than willing to accommodate PNG engineers on its database and in its training programs. Indeed such a move would seem to be to the benefit of engineers in both countries.

### **The Future**

After three years of organisational development, RedR is able to administer a large number of deployments, provide training courses, and maintain and further develop

### **Some stories from the field**

Below are two stories by RedR Australia engineers, Sarah Bish (PNG) and Ernie To (Tanzania and Bosnia), in their own words about their assignments.

#### **Sarah Bish (PNG, 1997)**

'I was deployed on Sunday 19 October 1997 to the East Awin Refugee Settlement. The sisters of the Mission where I stayed in the camp greeted me with open arms and hearts. They were responsible for the distribution of food to the sick and aged.'

'During the next seven days I surveyed the 17 individual settlements, the Mission facilities and health stations which make up the East Awin camp. The survey included an assessment of the current water supply and sanitation for each of the areas. The inspection involved reviewing the distance from houses to water supply, type of supply, proximity of supply to human and animal waste disposal, reliability of supply and basic water quality (EC, pH and temperature). Once the existing drought supply was reviewed, the potential for an alternative supply (providing both quality and quantity improvements) was assessed.'

'The main sources of water for the camp during 'normal' climatic conditions are rainwater collection in buckets, roof tanks and some shallow bores (<5 meters). The severe drought had resulted in marked deterioration in the quality of water for the East Awin camp, where the burden of water collection is almost solely the domain of women. Due to the drought, food and water resources were in short supply, with women having to spend the entire day on this task. The drought had resulted in people using water resources which would not normally have been used due to distance and quality.'

'Inspection of the site and comparison of drilling in a similar geological formation in Kiunga suggested that deep bores (i.e. 20-30 metres) may provide a reasonably good quality supply, which could provide an effective means of drought proofing for the camp as well as improving the existing water supply.'

'Although the length of my deployment was brief, I discovered a lot about the dynamics of a refugee camp and the vulnerability of the camp, particularly the women, to both natural and man-made influences. The need for the community to recognise its own problems and to collectively resolve to work out solutions is an important part of a camp's ability to thrive in its new environment.'

'I know I can't solve all of the problems of the camp, but I am glad to have had an opportunity to help improve the water supply for the East Awin camp.'

#### **Ernie To (Bosnia, 1996 and Tanzania, 1997)**

'People often ask: "Was the refugee crisis in Tanzania 1997 as bad as Bosnia 1996?"'

'The quick reply is "yes", and I had the opportunity to see human suffering in vastly different contexts.'

'Bosnia was a developed Eastern European country having a reasonable standard of living.'

'The Una Sana canton in the northwest frontier where I was posted had about 300,000 refugees in foreign countries. The international community initiated a program of community infrastructure rehabilitation valued at about \$60 million targeting the return of these people to their homes. People began to return from Germany and other countries of refuge to bury their dead and rebuild their lives. There was good potential for a better quality of life.'

'Tanzania was in the "third world". The Kigoma region, to which the refugees had fled from neighboring countries, was mostly undeveloped. The local living standard was low. The community infrastructure was both poor and in disrepair. The quality of life was very basic in the many villages and towns near the thirteen refugee camps. Over 250,000 refugees had fled from where they had little, to somewhere there was little or nothing to offer, but safety from the conflict. The international program of assistance was small in comparison to Bosnia, but adequate in local terms. Some camps were overcrowded and there was the possibility of forced repatriation by the Tanzanian Government. The refugees faced a very uncertain future.'

'RedR in both crises had fulfilled a key role in providing essential engineering services and management skills. If the number of beneficiaries can judge the outcome of humanitarian relief, it would be easy to say that both missions had equal values of about 300,000. If judged by dollars spent, Bosnia was the greater. My belief is that value can only be measured by the effectiveness of the relief of suffering of the individuals, and by their longer term prospect for a better quality of life. As a member of a large team, I believe that RedR Australia cannot afford not to be there.'

an extensive specialist database. RedR Australia hopes to achieve the following

- to have all register members undertaken the Foundation Training Course conducted by RedR
- to increase the number of Register members to 200 by 1999
- to broaden the scope of RedR Australia's work beyond the UNHCR/RedR Australia Arrangement, to include other humanitarian relief agencies (including AusAID)
- to develop a resource of trainers to facilitate and act as resource persons for future RedR Australia training
- to continue the expansion of the Register to include engineering related expertise

such as public health, environment, agriculture, forestry, logistics and program management

- to increase and broaden the language skills of personnel on the Register
- to become the 'agency of choice' for the provision of technical personnel
- to act as a resource, as and when requested, for engineers in nearby countries wishing to join RedR
- to establish greater independence in funding resources
- to become the 'charity of choice' in the Australian engineering community.

RedR Australia does not intend to grow for growth's sake. It will regulate the scale of operations to match the need and requests

for our services. RedR does not intend to seek and deliver its own programs in the field. The role is to assist and support aid agencies that have the prime responsibility of delivering aid programs with expert technical personnel. RedR will remain a resource for services in emergencies and relief situations, as distinct from development. RedR will not compete with other bodies.

Unfortunately there appears to be no diminution in the world's need for emergency assistance and relief. RedR Australia will continue to play its part in supporting those bodies providing relief and assistance to those affected by natural and man-made disasters.

## Australian Journal of Emergency Management Instructions for authors

The *Australian Journal of Emergency Management* endeavours to provide an information-sharing forum for all those involved in emergency management.

Contributions relating to Australian and international emergency activities, articles identifying and discussing issues, policies, planning or procedural concerns, research reports and any other information relevant to the emergency/disaster management community are welcome.

The aim of this publication is the exchange of information and views across the Australian emergency management community, therefore, the views expressed in this journal should not be taken to be the views of Emergency Management Australia.

The journal will include research-based papers, case studies, reports of current trends and issues, as well as papers aimed at developing theory and good practice. Authors are asked to review the literature only in as far as it supports the arguments being discussed: to avoid specialist terminology; and to consider as far as possible the practical implications of the work described.

Each paper should start with the complete title of the paper in **Bold**, two lines after that, the name(s) of the *author*, followed by the *author(s) affiliation in italics*.

A short abstract follows of approximately 100-200 words. The abstract should be in italics and indented

Each section should be appropriately identified with appropriate headings e.g. Introduction, Technical headings, Conclusions, and References. *Subheadings* may also be used throughout and preferably in italics.

It would be appreciated if authors would use the Harvard system of referencing in their papers e.g. (Jones 1995, p 4) rather than footnotes. Thus, references cited in the text will be listed at the end of the paper.

The reference list should be structured as follows: author, initials, year, title of the book (bold and italics) or article, publisher and place of publication or journal title (bold and italics) volume and issue number, and pages of article.

### For a book source

Jones L. R. 1995, *The Firefighters Concern*, Blackwell, London.

### For a Journal source

Jones L. R. 1997, 'Hazard Management in the Fire Service', *The Australian Journal of Fire Engineering*, Vol. 12, No. 3, pp.13-15

The paper should be single spaced with all tables, figures, charts, boxes, and equations incorporated into the text. The paper should be provided in A4 format.

The length of the paper is usually between 5 to 10 pages. Longer articles will be accepted but usually they should be no more than 20 pages in length. The font is usually Times Roman 12 point.

Diagrams, tables should be included within the electronic copy. Where they are unable to be provided in this format they can be bromide copy or a high quality photocopy. Photographs should be provided in print and negative form and where possible in digital format.

A short CV should be provided of the author/s at the end of the article. This should not exceed one or two short paragraphs. The papers are to be provided in electronic format (Microsoft Word 6, Word 7 or in Rich Text format) and one hard copy.

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## Part 1: Is the law enforceable in the courts?

'Every [legislative] provision has its ultimate sanction somewhere!'

In a recent ABC Boyer lecture, education was appropriately described as 'an important source of social capital'.<sup>2</sup> While the fundamental importance of education for the community is unquestioned, education of the community is more problematic. Nevertheless, it is a growing concern of policy makers and decision makers throughout society, and involves topics as diverse as companion animals;<sup>3</sup> protection of the environment<sup>4</sup> and appropriate use of resources<sup>5</sup>; the workplace<sup>6</sup>; communications<sup>7</sup>; privacy<sup>8</sup>; accident prevention,<sup>9</sup> drugs<sup>10</sup> and public health<sup>11</sup>; the rights of the incompetent<sup>12</sup>, the disabled<sup>13</sup> and others to be free from discrimination<sup>14</sup>; voting<sup>15</sup>; ethical public administration<sup>16</sup>; films and multimedia<sup>17</sup>; and tenancy agreements.<sup>18</sup>

In emergency management, the focus of this article, the desirability of community or public education<sup>19</sup> is widely accepted as an article of faith<sup>20</sup>. Indeed, the need for educating the public is pressed most strongly: 'if we will not educate those who can use the relevant knowledge that is available, it will become increasingly more difficult to prevent, to prepare for, to respond to, and to recover from the disasters of the future.'<sup>21</sup>

But why, in the emergency management area, is community education necessary? It is said that emergency measures are most often taken at the local level, and sometimes emergency organisations can play only a secondary role.<sup>22</sup> Regular emergency services cannot be available to deal with every emergency.<sup>23</sup> Education in the emergency area works by instilling responsibility which in principle leads to progressive commitment to injury reduction.<sup>24</sup> Education and participatory democracy are related too. To the extent that education gives citizens the feeling that they have a 'stake' in community emergency management, it may also increase their propensity to comply with advice and guidance from emergency managers.<sup>25</sup> Finally, a comparative advantage of education is that, although it involves costs in terms of money, time and effort, it is claimed to be relatively less costly than most other counter-disaster measures which could be attempted<sup>26</sup>.

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There is another, quite different, and less noticed reason why community education is or ought to be regarded as axiomatic in the emergency area: legislation makes it part of the role of emergency management. This two-part article accordingly examines the significance and adequacy of legislation providing for or indeed requiring community education in the emergency area<sup>27</sup>. Part One focuses on the legal effects of the provisions. The first section is *contextual*. It elaborates on the reasons why community education is such a difficult policy area. The second section *describes* the legislation. It

identifies the matters with which the relevant legislative provisions in the various State and Territory legislation are concerned and constructs a legislative model which is, on the whole, typical of the legislation. The third section examines what (if any) *effects in law* the provisions have or can have, such as whether the administration of a program of community education could lead to liability for breach of statutory duty.

But the significance of the legislation cannot be judged by their effects in law alone. As one theorist has put it, we ought to consider the function of 'law as exhortation'<sup>28</sup>. Part Two considers this function in detail. The first section of this Part considers the *political effects* that the provisions have or could have. In the second section the article considers *alternative*

### Notes:

- 1 Robinson, 1994, p. 127 (fn 5).
- 2 Cox, 1995, p.76.
- 3 e.g. Companion Animals Act 1998 (NSW) s 81(e).
- 4 e.g. Protection of the Environment Administration Act 1991 (NSW) s 27.
- 5 e.g. Water Industry Act 1994 (Vic) s 80(e).
- 6 e.g. Workplace Health and Safety Act 1995 (Qld) s 45(3)(h).
- 7 e.g. Australian Communications Authority Act 1997 (Cth) ss 6, 7.
- 8 e.g. Privacy Act 1988 (Cth) s 83(c).
- 9 e.g. State Government Insurance Commission Act 1986 (WA) s 6(e).
- 10 e.g. Australian Sports Drug Agency Act 1990 (Cth) s 8(b).
- 11 e.g. New South Wales Cancer Council Act 1995 (NSW) s 5(1)(b).
- 12 e.g. Guardianship and Administration Act 1990 (WA) s 97(1).
- 13 e.g. Intellectually Disabled Persons' Services Act 1986 (Vic) s 6(2).
- 14 e.g. Equal Opportunity Act 1984 (Vic) s 162(1).
- 15 e.g. Electoral Act 1985 (SA) s 8(1)(d).
- 16 e.g. Independent Commission Against Corruption Act 1988 (NSW) s 13(1).
- 17 e.g. Cinemedia Corporation Act 1997 (Vic) s 6(g).
- 18 e.g. Residential Tenancies Act 1980 (Vic) s 11(1)(d).
- 19 In this article the term 'community education' is generally adopted, rather than 'public education', 'adult education' or some other similar term. In the general education field, all three terms are commonly used: see the Australian Education Index on AUSTRUM, RMIT Victoria University of Technology and the National Library of Australia (a web searchable database). In emergency management legislation (the focus of this article) the descriptors 'public' and 'community' are both employed. The term 'community education' is preferred here since 'community' is a more flexible concept. It can refer both to the general public as well

as a section of the public—see *The Macquarie Dictionary*, where the first meaning of 'community' refers to a 'social group of any size', while the first meaning of 'public' refers to the 'people as a whole': Delbridge et al (eds) 1997, pp. 446, 1723 respectively. 'Community education' is also appropriate given the variety of audiences the subject of emergency management education, and the reality that sections of the public may face different hazards and accordingly have different educational needs.

- 20 Lambley, 1997, p.26; Boughton, 1992, p.6; Lucas-Smith and McRae, 1993, p.4; McKay, 1997; Keys, 1995/1996, p.30.
- 21 Quarantelli, 1988, pp.1-2.
- 22 Quarantelli, 1988, pp.5, 14.
- 23 Fortune, 1988, p.6.
- 24 Hennessy, 1998, p.12.
- 25 Nelson and Perry, 1991, p.25.
- 26 Quarantelli, 1988, p.3; Smith et al, 1996, p.51.
- 27 Emergency management legislation the subject of this article is concerned with a broadly and variably defined category of 'emergencies' (e.g. VSESA (Vic), drawing on definition of 'emergency' in s 4(1) of EMA (Vic)), but, in practice, it is largely concerned with preventing or minimising the impact of natural disasters; not with other 'emergencies' such as war, collapse of civil government, and strikes in 'essential services': see generally Lee, 1984, pp 4-6, 171-176.
- 28 Carney, 1991, p. xiii. For a recent illustration of a judicial finding that particular legislative provisions were 'exhortatory', see *Minister for Immigration and Multicultural Affairs v Eshetu*, High Court of Australia, unreported [1999] HCA 21, 13 May 1999 at [106] and [108] per Gummow J, citing with approval the views of Lindgren J in *Sun Zhan Qui v Minister for Immigration and Ethnic Affairs*, unreported, Federal Court of Australia [1997] 324 FCA, 6 May 1997. The relevant provision was s 420 of the Migration Act 1958 (Cth).

legislative models. These alternatives are offered to stimulate reflection on the current offerings rather than as part of a case for necessary reform. The final section offers some conclusions from the study as a whole.

### Problems underlying the current law

Community education in the emergency management area, as in other areas of general importance to the community (such as public health), poses enormous challenges to the educator. While some success is claimed<sup>29</sup>, surveys indicate widespread failure, especially if success is measured by behavioural change, rather than simply improving knowledge<sup>30</sup>. In summary, the problems stem from the inherent nature of community education; from a lack of understanding about communication principles; and from political, cultural and 'human' dimensions to the task.

The problems caused by the inherent nature of community education in the emergency area include:

- The inadequacy of learning by experience, due to the infrequency of some disasters and the transient nature of the population<sup>31</sup>. Even those with experience can be 'prisoners of that experience, unable to contend effectively with floods outside the range of severities that they have witnessed'<sup>32</sup>.
- The general recognition that there is 'no single public' to be educated<sup>33</sup>; rather the community contains multiple audiences with differing needs. Accordingly, multiple channels of communication and multiple strategies are required<sup>34</sup>, taking account of factors such as cultural preferences<sup>35</sup>, age<sup>36</sup>, differing literary standards<sup>37</sup> and the needs of vulnerable groups generally<sup>38</sup>.
- The lack of certainty about some of the risks. This creates differences of view as to whether, and if so how, the community ought to be informed.
- The inability of state-based organisations to communicate easily to the population of their state because of the need to take account of local knowledge, local political structures and local priorities.<sup>39</sup>
- The general complexity of the task of 'risk communication'. Risk communication goes way beyond the task of message design and dissemination (the risk message) and involves 'an interactive process of exchange of information and opinion among individuals, groups, and institutions'<sup>40</sup>. Risk communication must also be ongoing—otherwise previous messages will simply 'die'.<sup>41</sup>

Part of the problems also lie in incomplete understanding of the principles of com-

munication; itself a subset of the field of 'community education'. Risk communication is a relatively new subject of interest.<sup>42</sup> In the not so recent past community education campaigns were conducted on a pretty primitive basis.<sup>43</sup> There are still many unresolved issues surrounding the most effective means of raising public awareness of potential disasters, communicating information about risk and achieving resident compliance with emergency warnings.<sup>44</sup> Risk communication is also hampered by the lack of understanding of community education generally. In a recent review, two researchers were blunt in their assessment of community education theory: describing it as 'elusive and under-researched, with rhetoric lacking structure, and vagueness and contradictions rife'.<sup>45</sup>

The wider context of community education cannot be ignored in considering the challenges educators face. Community awareness has suffered in the past from a lack of political attention.<sup>46</sup> Inevitably, of course, there are limited funds available to government and competing political priorities.<sup>47</sup> Lip service by community and political leaders continues to be paid to community education in some areas.<sup>48</sup> Insiders additionally point to cultural obstacles within emergency organisations themselves. The traditions of most emergency services are said to be 'skills-based and incident oriented'. As a consequence, flood planning at least was given relatively little attention until recently.<sup>49</sup> But the most important reason for failure of risk communication is said to be human failure.<sup>50</sup> In particular, there is apathy and complacency by politicians and the general public towards events that may be infrequently experienced or not previously experienced. Contributing factors are a lack of understanding and a lack of information.<sup>51</sup> Contrarily, it is said that people sometimes put themselves at risk with full knowledge, the reasons being overriding values, wilfulness and addic-

tion.<sup>52</sup> In short, '[i]nformation rarely trumps beliefs'.<sup>53</sup>

### An overview of legislative provisions concerned with community education in relation to emergencies or disasters

#### Introduction

The topic 'community education' is a vague criterion for examining legislation, so it has been necessary to define the scope of the exercise. First, I have opted for legislation which refers to education as an *administrative responsibility* (especially on emergency management). Thus, I have not concerned myself with the way legislation *itself* imposes certain duties on private persons such as landholders, backed up by criminal sanctions, even though such legislation may have an educative function.<sup>54</sup> Secondly, I have selected legislation referring explicitly to *public* or *community* education (or some similar phrase) or involving some pro-active educational activity, such as publicity or the dissemination of educational material. I do not therefore examine legislation solely directed to the training of staff and volunteers. Thirdly, while I recognise that community education can occur indirectly through a variety of means, such as the use of volunteers and the preparation of emergency management plans (especially when the plans have been made through community representation)<sup>55</sup> I have restricted myself to legislation providing for *direct* education of the community.

All States and Territories have legislation concerning community education in the emergency management area which meets the above criteria. But the approaches vary according to the emergency area and in the level of regulation. In Victoria, New South Wales, Queensland, Tasmania and the Northern Territory general emergency or disaster statutes provide explicitly for some regulation of community education.<sup>56</sup> In South Australia and Western Australia there

#### Notes:

- 29 Scanlon, 1990, pp.241–242.
- 30 Scanlon, 1990, p.233; Handmer and Penning-Rowell, 1990, p.318.
- 31 Nielsen and Lidstone, 1998, p. 17; Boughton, 1992, p.4.
- 32 Keys, 1995/1996, p.31.
- 33 Keys, 1991, p.16.
- 34 Quarantelli, 1988; Nelson and Perry, 1991, p.25.
- 35 Nelson and Perry, 1991; Dovers, 1998, p.8; Salter et al, 1993–94, p.5.
- 36 Salter et al, 1993–1994, p.5.
- 37 Dovers, 1998, p.8.
- 38 Keys, 1991, p.13.
- 39 Young, 1998, p.16.
- 40 National Research Council, 1989, p.21. For a local discussion of these issues, see Beckwith and Bishop, 1993.
- 41 Keys, 1995/1996, p.32.
- 42 National Research Council, 1989, p.16.

- 43 Salter et al, 1993–94, p.5; Keys, 1995, p.11.
- 44 Beckwith and Bishop, 1993, p.11. Keys, 1995, p.10 acknowledges that the expertise is still being developed to determine the relative levels of cost effectiveness of different approaches to public awareness campaigns.
- 45 Nielsen and Lidstone, 1998, p.15.
- 46 Keys, 1995, p.2.
- 47 Smith et al, 1996, pp.52–53.
- 48 Heatherwick, 1990, p.10.
- 49 Keys, 1995–96, p.31.
- 50 Scanlon, 1990, p.233.
- 51 Smith et al, 1996, p.53.
- 52 National Research Council, 1989, p.28.
- 53 De Marchi and McDermott, 1988, p.7.
- 54 e.g. BA (ACT) s 55.
- 55 e.g. EMA (Vic) s 21.
- 56 VESA (Vic); EMA (Vic); SERMA (NSW); SESA (NSW) DA (NT), SC-DOA (Qld); ESA (Tas); SDA (SA); SESA (SA).

is general emergency legislation but no explicit reference to community education. In the Australian Capital Territory, there is no general emergency statute. But in these last three jurisdictions there is bush fire legislation providing for community education in similar terms to that provided in the general emergency statutes applying elsewhere.

Typically, the level of regulation is relatively low with few if any procedures specified. One striking exception (which may not be unique) comes from the Northern Territory where the Fire and Emergency Regulations 1996 provides a very detailed scheme of community education in relation to fire matters. The legislation imposes a duty on the owner or occupier of certain buildings ('prescribed buildings') to ensure that all persons who work in the building are 'given instruction on measures for the protection of persons in the building from fire and fire related emergencies' (regulation 11(3)). The legislation goes further by:

- specifying the matters which must be governed by the instruction
- incorporating a particular Australian Standard recommended or adopted by the Standards Association of Australia
- specifying the period of the instruction
- specifying the procedures for recording the instruction
- providing for enforcement, including provision for inspection and a penalty (reg 20).

But this legislation is exceptional in the current context because the duties are not cast on emergency management but on a range of persons who own or occupy certain buildings in a public or private capacity.

Although the legislative provision for community education by emergency management is generally very brief, there are some significant differences. The legislation is now compared along the following lines:

- upon whom the function of education is cast
- whether the scope of the activity commanded or conferred is wide or narrow
- whether education is a statutory duty of the relevant agency, or merely a function or power of the agency
- whether the educational activity is restricted by reference to stated purposes
- whether the persons to be educated are named and, if so, how they are referred to
- whether the education is to be, or may be, provided by another organisation
- whether there is express political control
- whether outside consultation is required or expressly permitted
- whether community education must be reported on in an annual report to Parliament

- whether acts or omissions are immunised from civil liability
- whether the legislation provides for detailed rules to be made by the Executive.

### Upon whom the function of education is cast

The function of community education is cast upon a range of persons and bodies. In some legislation it is the emergency authority<sup>57</sup> or its chief officer<sup>58</sup>. In others it is an advisory or planning body<sup>59</sup>. Exceptionally, as already mentioned, it is the owner or occupier of prescribed buildings<sup>60</sup>.

### Scope of the activity

Much of the legislation applies to community education generally<sup>61</sup>. For example, section 14(1) of the (Queensland) *State Counter-Disaster Organisation Act 1975* provides, among other things, that the functions of the State Emergency Service are: 'to educate and train members of the public . . . with respect to counterdisaster purposes'.

This provision must be read with section 15 which states that the Director 'shall arrange counterdisaster education and advisory programs and disseminate information'.

Other legislation focuses more narrowly on particular educational processes.<sup>62</sup> For instance, section 15(2)(k) of the (NSW) *State Emergency and Rescue Management Act 1989* confers on the State Emergency Management Committee the following function: 'to produce and disseminate educational material on established emergency management policies and procedures'

### Powers or duties

There is no unanimity as to whether community education ought to be expressed as merely a statutory function or power, or, on the other hand, as a statutory duty. While regimes in New South Wales, Queensland, Tasmania, Western Australia and the Northern Territory are backed up by statutory duties<sup>63</sup>, mere powers or functions are conferred in New South Wales, Victoria, South Australia and the Australian Capital Territory<sup>64</sup>.

### Statement of purposes

The legislation in many of the jurisdictions includes some *general* reference to the purposes. For example, the Tasmanian legislation refers to education for 'counter-disaster purposes', and 'counter-disaster' is generally defined as 'the planning, organisation, co-ordination, and implementation of measures that are necessary or desirable to prevent, minimise, or overcome the effects of a disaster upon members of the public or any property in the State . . .'<sup>65</sup>. But there is

no *specific* statement of the purposes of the educational programs, etc.

### Who is to be educated

The legislation varies in specifying the intended audience. Some refer to 'public education' or 'members of the public'.<sup>66</sup> Others opt for 'the community' or 'community education'.<sup>67</sup> But some do not refer to the audience specifically<sup>68</sup>.

### Whether the education can be provided by a third party

While most of the provisions speak of a direct relationship with the ultimate audience, in at least two jurisdictions the education is mediated. In Victoria, the State Emergency Service's function is to assist municipal councils<sup>69</sup>. Under the New South Wales Rural Fires Act, the immediate audience of the education are members of the NSW Rural Fires Service<sup>70</sup>, or the NSW Rural Fire Service Commissioner<sup>71</sup>. In a less direct fashion, some jurisdictions provide for the emergency authority to enter into a contract with another body for the dissemination of the relevant educational material etc<sup>72</sup>.

### Political control

At common law, government departments are probably subject to direction from their Ministers on matters of policy even where an official is the repository of a statutory power or duty.<sup>73</sup> Legislation may extend this duty. In South Australia, Regulations made

#### Notes:

- 57 CFA (Vic) s 23(1); VSESA (Vic) s 5(1)(a)(iii); BA (ACT) s 5H(1); PCR (SA) reg 13(1)(d), (e); SC-DOA (Qld) s 14(1)(b); DA (NT) s 18(a); ESA (Tas) s 21(a); FEA (NT) s 6(d), (e).
- 58 SC-DOA (Qld) s 15(b); DA (NT) s 15(k); ESA (Tas) s 22(b); RFA (NSW) s 13(2)(j).
- 59 SERMA s 15(2)(k); RFA (NSW) s 124(1)(b); SERMA (NSW) s 48(1)(e); BFA (WA) s 10(1)(g).
- 60 FER (NT), reg 11.
- 61 VSESA (Vic) s 5(1)(a)(iii); RFA (NSW) ss 13(2)(j), 124(1)(b); DA (NT) ss 15(k), 18(a); FEA (NT) s 6(d); BFA (WA) s 35A; PCR (SA) reg 13(1)(d); SC-DOA (Qld) ss 14(1)(b), 15(b); ESA (Tas) ss 21(a), 22(b).
- 62 CFA (Vic) s 23(1)(l).
- 63 SERMA (NSW), s 48(1)(e); SC-DOA (Qld) s 15(b); ESA (Tas) s 22(b); BFA (WA) s 10; DA (NT) s 15(k); FER (NT) reg 11.
- 64 SERMA (NSW) s 15(2)(k); VSESA (Vic) s 5(1)(a)(iii); PCR (SA) reg 13(1)(d), (e); BA (ACT) s 5H(1); CFA (Vic) s 23(1)(l).
- 65 ESA (Tas) s 2.
- 66 RFA (NSW) s 124(1)(b); VSESA (Vic) s 31(1)(f); SC-DOA (Qld) s 14(1)(b); DA (NT) s 18(a); ESA (Tas) s 21(a).
- 67 RFA (NSW) s 13(2)(j); PCR (SA) reg 13(1)(d); FEA (NT) ss 6(d), 54(2)(a).
- 68 BA (ACT) s 5H(1); SERMA (NSW) ss 15(2)(k), 48(1)(e); VSESA (Vic) s 5(1)(a)(iii); BFA (WA) s 10(1)(g); DA (NT) s 15(k); CFA (Vic) s 23(1)(l).
- 69 VSESA (Vic) s 5(1)(a).
- 70 RFA (NSW) s 13.
- 71 RFA (NSW) s 124(1)(b).
- 72 CFA (Vic) s 23(1)(l).
- 73 *Ansett Transport Industries (Operations) Pty Ltd v Commonwealth* (1977) 139 CLR 54 at 61 per Barwick CJ, 87 per Murphy J and 116 per Aickin J. Aickin J's view was tentatively put.

under the Public Corporations Act 1993 require the agency to obtain the approval of the Minister before it makes a 'material change to its policy direction or budget'<sup>74</sup>. Other legislation is more subtle in providing for political control: for example in providing for Ministerial appointments to advisory bodies<sup>75</sup>.

### Outside consultation

The requirement to engage in consultation beyond government or emergency management is somewhat of a rarity in emergency legislation. The Rural Fire Service Advisory Council under the (NSW) Rural Fires Act is a partial exception to the general rule since a majority of its members are required to be non emergency services personnel (section 123). The new Western Australian legislation (FESAA) may also enable outside consultation to be a practical requirement. It provides for the establishment of three consultative committees. Section 23(3) permits, but does not explicitly require, outside consultation through the appointment by the Minister of non-emergency services personnel.

### Annual report

Legislation frequently requires public bodies to report to Parliament on an annual basis. Emergency legislation in some jurisdictions requires or refers to such reports<sup>76</sup>. In other jurisdictions general legislation is said to be the basis for the annual reporting<sup>77</sup>.

### Immunity

Parliament might attempt to protect an agency or a member of an agency from civil or criminal action. In respect of civil liability it might purport to protect the agency or member from simply negligence, or from damages actions, or from all civil liability where some remedy extraneous to the statute such as damages is sought. Parliament might also attempt to protect the agency or member from judicial review being sought in a State supreme court on the grounds established by administrative law. There are two main cases which might be sought to be prohibited: cases in which the applicant seeks an order requiring a statutory duty to be performed, and cases in which the applicant seeks review, on the ground of illegality, of the exercise of a statutory discretion.

Where such provisions come to the attention of the courts, they are customarily 'read down' so as to protect common law rights to take action in the courts<sup>78</sup>. This means that, in the event of ambiguity, the provision is read in favour of the plaintiff or applicant for review. In the case of a provision which purportedly prohibits judicial review totally on administrative law

grounds, there is authority which holds that such a provision must be read down also. The explanation is that, without such an 'interpretation' such a provision conflicts with the express limits of the authority provided in the same legislation<sup>79</sup>.

Despite the relative freedom to immunise acts or omissions from civil liability, in particular for damages, it is notable that not all jurisdictions go that far<sup>80</sup>. Queensland, Western Australia, Tasmania and the Northern Territory contain wide immunity provisions which protect against liability for negligence, whether personal or vicarious<sup>81</sup>. But Victoria does not immunise negligence<sup>82</sup>, and South Australia only immunises personal liability<sup>83</sup>, leaving vicarious liability possible. New South Wales has a patchwork of provisions which together fall short of a comprehensive civil immunity<sup>84</sup>.

### Provision for making of delegated legislation and other rules

Victoria and the Northern Territory expressly provide for delegated legislation on the topic of community education<sup>85</sup>. Northern Territory's delegated legislation, applying to occupiers and owners of certain buildings, was mentioned in the introduction, above.

### Summary

Although the matter of community education forms a small part of emergency legislation, a number of variables have been shown to exist. Principally, they concern the emergency area, the level of regulation generally and the particulars of regulation. If one was to construct a typical model based on the most popular provisions, the legislation might include the following:

- an explicit reference to community education, rather than none at all
- the conferment of a power or duty to educate on specialist emergency service authorities rather than on advisory bodies
- a general reference to education rather than merely to particular processes
- the imposition of a mere statutory power rather than the conferment of a statutory duty to educate (marginally)
- restriction by way of express purposes, though generally stated
- specification of the audience in very general terms, commonly 'members of the public' or the 'community'
- a direct relationship between emergency management and the intended audience
- annual reporting requirement on educational activities
- less than comprehensive immunity from civil liability
- absence of express political control
- absence of requirement of outside consultation
- no specific regulation making power

## Effects in law<sup>86</sup>

### Effect of legislation per se

To test the legal effect of legislation about community education one could ask, first of all, what if there was no *express* legislative power to educate? Would there be no power to educate? It is submitted that, although direct authority is scarce<sup>87</sup>, in the absence of such an express power, there would nevertheless be a power to educate. Three bases may be mentioned. The first two assume legislation has been enacted in the area of emergency management but without an express power to educate the community (as in South Australian and Western Australian emergency legislation). The third does not rely on that assumption. The first basis of a power to educate arguably arises from their being an (implied) incidental power to educate. It is a well established general proposition that 'any grant of power statutory or otherwise carries with it by implication all incidental powers necessary for its effective exercise'<sup>88</sup>. It could be argued that specific legislative powers of emergency management carry with them the incidental power to prevent or minimise dangers to the public caused by disasters. The second basis of the power to educate arguably arises from

### Notes:

- 74 PCR (SA) reg 13(2).
- 75 Advisory Council under the RFA (NSW) s 123; consultative committees under FESAA (WA).
- 76 SERMA (NSW) s 17; CFA (Vic) s 24(1); SESA (SA) s 7.
- 77 Financial and Administration and Audit Act 1985 (WA) s 62, for the Western Australian State Emergency Service, and the Fire and Emergency Services Authority of Western Australia (FESAA (WA), s 36); Annual Reports (Statutory Bodies) Act 1984 (NSW), for the State Rescue Board of New South Wales; Annual Reports (Departments) Act 1985 (NSW), for the New South Wales State Emergency Service; Tasmanian State Service Act 1984 (Tas) s 33AB and the Financial Management and Audit Act 1990 (Tas) s 27, for the State Emergency Service (Department of Police and Public Safety); Public Sector Employment and Management Act 1993 (NT) s 28, for the Northern Territory Police Fire and Emergency Services.
- 78 See Bell and Engle, 1995, pp.171-172.
- 79 *Darling Casino Ltd v New South Wales Casino Control Authority* (1997) 191 CLR 602 at 630-634 per Gaudron and Gummow JJ.
- 80 FESAA (WA) s 37 is a wide liability provision since it immunises all acts and omissions done in 'good faith', including acts or omissions in the 'purported performance of a function' under relevant legislation.
- 81 DA (NT) s 42; FEA (NT) s 47.
- 82 VSESA (Vic) s 17; CFA (Vic) s 92(1).
- 83 SDA (SA) s 17; SESA (SA) s 17.
- 84 SERMA (NSW) s 41: wide immunity but only for state of emergency; SERMA (NSW) s 59: wide immunity for rescuers only; SERMA (NSW) s 62: personal liability only protected.
- 85 VSESA (Vic) s 31(1)(f); FEA (NT) s 54(2)(a).
- 86 Due to space restrictions, this section is a sketch only of some of the more important legal effects.
- 87 The scarcity of authority may not disprove a point of law; rather it may point to an unspoken assumption that it exists: *R v Secretary of State for the Home Department; Ex parte Northumbria Police Authority* [1989] 1 QB 26 at 58 per Nourse LJ.
- 88 *Burns Philp and Co Ltd v Murphy* (1993) 29 NSWLR 723 at 730 (FC).



their being an implied power to educate. The Federal Court has ruled that '[the] question whether some power, right or duty is to be implied into a statute will depend upon the construction of the provisions under consideration having regard to their purpose and context and other traces of the convenient phantom of legislative intention'<sup>89</sup>. It would not be difficult to imply a power to educate in the relevant authorities where the statute refers to a purpose of preventing or minimising the impact of natural disasters. The third basis is the prerogative<sup>90</sup>. There is dicta supporting the inherent power of government 'for protecting the public safety'<sup>91</sup>. An actual emergency need not exist<sup>92</sup>. It has been held that the government has an inherent power to circulate information about tourism<sup>93</sup>; *a fortiori*, it would have such a power to circulate information and educate generally about preventing or minimising the impact of disasters.

Thus, the effect of provisions expressly referring to community education is not to create a power to do so where none would otherwise exist. A number of strongly arguable bases exist. But, to the extent that such provisions go beyond merely stating a function or a power, they extend the power which would otherwise be implied in the statute or vested by the prerogative.

### Effect of particular provision for community education

The particular provisions are now examined. To test their legal effect, we might consider hypothetical legal action to enforce such provisions or to enforce a common law wrong against the background of the provisions.<sup>94</sup> Five actions may be considered:

- legal action by a plaintiff who seeks to enforce a right to be heard before a decision about an education program is made or implemented
- legal action by a plaintiff who seeks from a court an order to enforce any statutory duty to educate
- legal action by a plaintiff who seeks review by a court of an exercise of a power to educate on the ground of illegality, and an order rehearing the matter according to law
- legal action by a plaintiff who sues for damages on the basis of the common law tort of negligence
- legal action by a plaintiff who sues for damages on the basis of the common law tort of breach of statutory duty.

Do the community education provisions have legal effect in the sense that they are enforceable in a court in one of the above mentioned ways? This might seem an unnecessary question. A non-lawyer might well assume that, since statute law is part of

the law of the land, its provisions must be enforceable. This assumption is far from the whole truth. There is clear precedent demonstrating that not only will the courts decline to review common law powers of government which are not suitable for review<sup>95</sup>, but this extends, to some extent, to some statutory powers and duties<sup>96</sup>. Furthermore, it can be strongly argued that the community education provisions are not enforceable to a great extent.

### Enforceability (1): enforcement of right to be heard before education program before a decision about an education program is made or implemented

The common law principle of procedural fairness (or natural justice) generally speaking requires the executive government to afford individuals the right to a hearing before decisions are made which adversely affect them<sup>97</sup>. But there is no duty to a person if, among other things, the person is not affected individually<sup>98</sup>, or the nature of the power is such as to make such a duty inappropriate in the particular statutory context<sup>99</sup>. On either of these grounds it would seem that decisions about community education programs would not attract the common law requirements of procedural fairness in decision making. As with a rate increase, a program of *public* or *community* education would not be deemed to affect a person individually. This is because the diffuse nature of what is commanded or conferred by the power would make it difficult for a court to single out an individual as having their rights specially affected.

Exceptionally, a duty to afford procedural fairness can arise if there is a 'legitimate expectation' that a 'right, interest or privilege will be granted or renewed or that it will not be denied without an opportunity being given to the person affected to put his case'<sup>100</sup>. A legitimate expectation may be based on certain circumstances, including a statement, undertaking or regular practice<sup>101</sup>. So if there is, for instance, a regular practice of educating the community in a particular way, a ground for implying the duty to afford procedural fairness would exist.

### Enforceability (2): Enforcement of any statutory duty to educate the community

The main difficulty in enforcing a duty to educate the community lies in ascertaining *what* the court would be asked to enforce or, to put it another way, what constitutes a failure to perform the duty. The statutes fail to specify with any clarity such matters as: what is meant by 'education'; to whom the information ought to be disseminated; and how often the education ought to occur. Nor is it easy to imply such aspects of the duty.

Much of the difficulties in ascertaining the scope of any legal duty stem from the underlying problems facing community educators alluded to earlier: the inherent nature of community education; the lack of understanding about communication principles; and the political, cultural and 'human' dimensions to the task. Considered together, the existence of these factors would send a powerful message to a court that community education is a difficult, uncertain, and complex area requiring political, rather than legal judgment. If the court adopted this line of reasoning, it would be likely to hold that the enforcement of the duty was not justiciable<sup>102</sup>.

Notwithstanding these difficulties, limited judicial intervention could not be ruled out

#### Notes:

- 89 *Sloane v Minister for Immigration, Local Government and Ethnic Affairs* (1992) 37 FCR 429 at 443 per French J.
- 90 The prerogative of the Crown used to refer to the non statutory powers available to the central government but not private subjects; but now it increasingly refers to non statutory executive powers in general: Aronson and Franklin, 1987, p. 19.
- 91 *Burmah Oil Company (Burmah Trading) Ltd v Lord Advocate* [1965] AC 75 at 115 per Viscount Radcliffe. See also *R v Secretary of State for the Home Department; Ex parte Northumbria Police Authority* [1989] 1 QB 26 at 57 per Nourse LJ, referring to the 'duty or prerogative of protection'.
- 92 *R v Secretary of State for the Home Department; Ex parte Northumbria Police Authority* [1989] 1 QB 26 at 45, 55, 59 (prerogative of keeping the peace within the realm).
- 93 *N. MacDonald Pty Ltd v Hamence* (1984) 1 FCR 45 at 50 per Neaves J.
- 94 In speaking of legal enforceability I am not implying that emergency management are in any way not fulfilling or likely to fail in, their legal duties and obligations.
- 95 e.g. *R v Toohey (Aboriginal Land Commissioner); Ex parte Northern Land Council* (1981) 151 CLR 170 at 220-221 per Mason J; *Minister for Arts, Heritage and Environment v Peko-Wallsend Ltd* (1987) 15 FCR 274; *Council of Civil Service Unions v Minister for the Civil Service* [1985] 1 AC 374.
- 96 *Yarmirr v Australian Telecommunications Corp* (1990) 20 ALD 562; 96 ALR 739; *Shire of Beechworth v Attorney-General* [1991] 1 VR 325; *Minister for Immigration and Multicultural Affairs v Eshetu*, unreported, High Court of Australia, [1999] HCA 21, 13 May 1999, in relation to s 420 of the Migration Act 1958 (Cth).
- 97 *Haoucher v Minister of State for Immigration and Ethnic Affairs* (1990) 169 CLR 648 at 653 per Deane J, approved by Mason CJ, Deane and McHugh JJ in *Annetts v McCann* (1990) 170 CLR 596 at 598.
- 98 *Salemi v Mackellar (No 2)* (1977) 137 CLR 396 at 452 per Jacobs J, cited by Mason J in *Kioa v West* (1985) 159 CLR 550 at 584.
- 99 *Kioa v West* (1985) 159 CLR 550 at 619 per Brennan J.
- 100 *Kioa v West* (1985) 159 CLR 550 at 583 per Mason J.
- 101 *Kioa v West* (1985) 159 CLR 550 at 583 per Mason J.
- 102 The complexity of administrative and political factors was the reason given by Bowen CJ in *Minister for Arts, Heritage and Environment v Peko-Wallsend Ltd* (1987) 15 FCR 274 at 278-279 for declining review in that case. For an example of a statutory duty which was found to be not justiciable in the circumstances of the case, see *Yarmirr v Australian Telecommunications Corp* (1990) 20 ALD 562; 96 ALR 739.

in a clear (and possibly far-fetched) case. If there was a known risk of harm and the authority had unreasonably delayed making a decision about whether or not to educate the public, a court may require the decision maker to make the decision. An argument that decision making was affected by a lack of resources will not necessarily be accepted if a court finds defects in the way resources were allocated<sup>103</sup>.

Even if the matter was suitable for judicial review (justiciable), legal action to enforce a duty would need to be brought by a person with legal standing. Thus, if the proceedings were launched by a person or organisation without such standing, the court may, upon objection being taken, refuse to entertain the proceedings. The question therefore arises: who would have legal standing to enforce any statutory duty? Until recently, a person wishing to enforce a statutory duty would need to show that they are specially affected - meaning affected to a substantial extent beyond that held by an ordinary member of the public<sup>104</sup>. An ordinary member of the public or an interest group (simply a combination of such individuals) was seemingly precluded<sup>105</sup>. But, at variance with that law, recent case law at the lower levels of the Australian court hierarchy has 'recognised' the rights of both established and well recognised interest groups, as well as representative organisations such as local shires, to take court action<sup>106</sup>. An added confusion has been the unconvincing way in which some interest groups have been treated<sup>107</sup>. Clearly, the area awaits clarification by the High Court or the legislatures. If the case law recognising the rights of certain interest groups and representative organisations is not upheld by the High Court, it is difficult to see how a member of the relevant community or a group of such members could have standing to commence proceedings to enforce a duty to educate the community. If, however, the High Court does however accord standing to such persons and groups, the problem of justiciability remains.

### **Enforceability (3): legal action seeking a court to review any exercise of a power on the ground of illegality and to order the matter to be redecided according to law**

Where a court is reviewing a discretion rather than a duty, the court has in theory more opportunities to intervene, though its review is limited to 'illegality'. An administrator acts illegally (beyond power) if they go beyond the authorised area or if they infringe one of the statutory or common law restrictions on administrative conduct, such as that decision making must not be

for an improper purpose or be so unreasonable that no reasonable decision maker would have made the decision in question<sup>108</sup>.

Because of the general absence of statutory criteria in the community education provisions, much the same problems we saw with enforcing a statutory duty would arise with any attempted review of a discretion to educate. Instances of the vague generality of the provisions the subject of this article include:

- the general reference to education, with little or no clarification of the activities contemplated
- the absence of reference to prescribed procedures, for example planning procedures, consultative procedures, coordinating procedures, and monitoring procedures
- the absence of specific reference to the purpose of the education, other than the general purposes of the Act
- specification of the audience in very general terms

It is a general rule of administrative law that the less confined a discretion is by express considerations, the less likely it will be that a court will be able to intervene on a ground of illegality. In relation to the community education provisions presently being considered, it would be likely that a court could (and would) intervene only in an extreme case. For example, if the education program was without scientific or objective basis, the program could be declared to unreasonable and unlawful<sup>109</sup>. Even in such a case difficulties in enforcement would arise because of the requirement of standing to sue (as discussed above). Assuming a person with standing could prove an illegality, a court would not be able to quash the education program because there is nothing which affects rights which makes it amenable to certiorari<sup>110</sup>. But it would seem open to the court to issue an injunction preventing any continuation of the impugned program, or a declaration that the program was conducted without lawful authority<sup>111</sup>.

### **Enforceability (4): Legal action seeking damages on the basis of the common law wrong of negligence**

Negligence is a common law doctrine with its own particular elements. It is conceptually distinct therefore from the other means of enforcement mentioned above. Breach of a statute is not determinative of negligence, nor is observance of a statute determinative of innocence<sup>112</sup>. So the difficulties in ascertaining the limits, if any, provided by the statute which were seen with the second and third means of enforcement

above are greatly avoided. An action in negligence does, however, have something in common with the first means for enforcement mentioned above, namely the action to enforce a duty to accord procedural fairness, since the better view is that that duty is a common law duty rather than an implication derived from the statute<sup>113</sup>. But the enforcement of a duty to afford procedural fairness provides, by definition, no more than procedural justice; it does not entail (in itself) any substantive enforcement. In contrast, the remedy of damages, which goes as of right to a party which can prove negligence (or some other such wrong which is the basis of an award of damages) clearly provides substantive enforcement.

The particular elements of negligence are frequently misunderstood. A 'mistake' which occasions harm to another does not necessarily amount to actionable negligence<sup>114</sup>. Negligence is a legal category with a much more complex array of policy objectives than simply assessing whether a mistake has been made. The relationship between the alleged wrongdoer (defendant) and the plaintiff must give rise to a duty of care; the conduct of the defendant (act or omission) must be negligent, and the damage complained of must be consequential and not too remote<sup>115</sup>.

As regards the duty of care, there is no duty if Parliament has passed an appropriately

#### Notes:

- 103 *Jianxin v Minister for Immigration, Local Government and Ethnic Affairs* (1991) 23 ALD 778 at 795 per Neaves J.
- 104 *Central Queensland Speleological Society Inc v Central Queensland Cement Pty Ltd* [1989] 2 Qd R 512; *Onus v Alcoa of Australia Ltd* (1981) 149 CLR 27 at 74 per Brennan J.
- 105 *Australian Conservation Foundation v Commonwealth* (1980) 146 CLR 493.
- 106 *Australian Conservation Foundation v Minister for Resources* (1989) 19 ALD 70; *North Coast Environmental Council Inc v Minister for Resources* (1994) 55 FCR 492; *Shire of Beechworth v Attorney-General* [1991] 1 VR 325.
- 107 *Right to Life Association (NSW) Inc v Secretary, Department of Human Services and Health* (1995) 56 FCR 50.
- 108 For a useful summary of the grounds, see their codification in the Administrative Decisions (Judicial Review) Act 1977 (Cth) s 5. The grounds are usefully explained in Douglas, see p XX.
- 109 *Cf Minister for Primary Industries and Energy v Austral Fisheries Pty Ltd* (1993) 40 FCR 381.
- 110 *Ainsworth v Criminal Justice Commission* (1992) 175 CLR 564.
- 111 *Ainsworth v Criminal Justice Commission* (1992) 175 CLR 564.
- 112 *Sibley v Kais* (1967) 118 CLR 424 at 427 per Barwick CJ, McTiernan, Kitto, Taylor and Owen JJ.
- 113 *Annetts v McCann* (1990) 170 CLR 596 at 598-599 per Mason CJ, Deane and McHugh JJ.
- 114 As R Wensley QC says (1994, p.3), 'The common law does not require those who plan, design and develop major engineering projects to be the insurers of others who may be harmed by the failure of, or some aspects of the operation of, such developments.'
- 115 *Jaensch v Coffey* (1984) 155 CLR 549 at 586 per Deane J.

wide immunity clause. In the emergency area, not all jurisdictions have done so. While courts will readily imply a duty in the furnishing of information or advice pursuant to a statutory function or duty<sup>116</sup>, they will be much less willing to do so if what is alleged is an omission<sup>117</sup>. In the words of As Mason J, '[g]enerally speaking, a public authority which is under no statutory obligation to exercise a power comes under no common law duty of care to do so'<sup>118</sup>. One reason for judicial reluctance has been the recognition that the courts were often ill-equipped to review the reasonableness of government inaction. In the 1980s the High Court authoritatively ruled on the duty to act for public authorities in *Sutherland Shire Council v Heyman*<sup>119</sup>. In the subsequently oft-quoted judgment of Mason J, a duty to act would arise in several well established circumstances, including where there is a specific act generating reasonable reliance<sup>120</sup>. Significantly, his Honour suggested a new basis of liability for omissions, which conceivably could have applied to an omission to inform the community about known hazards. This principle, known as 'general reliance', would apply to: 'cases in which the plaintiff's reasonable reliance will arise out of a general dependence on an authority's performance of its function with due care, without the need for contributing conduct on the part of a defendant or action to his detriment on the part of a plaintiff. Reliance or dependence in this sense is in general the product of the grant (and exercise) of powers designed to prevent or minimise a risk of personal injury or disability, recognised by the legislature as being of such magnitude or complexity that individuals cannot, or may not, take adequate steps for their own protection. This situation generates on one side (the individual) a general expectation that the power will be exercised and on the other side (the authority) a realisation that there is a general reliance or dependence on its exercise of power. The control of air traffic, the safety inspection of aircraft and the fighting of a fire in a building by a fire authority ... may well be examples of this type of function.'<sup>121</sup>

It is submitted that the general reliance concept could well have been applied to the educative function of emergency managers as being a power of the kind contemplated by Mason J. His Honour's proposition (which had been drawn from United States case law) was subsequently adopted or approved in several Australian and New Zealand courts and possibly the House of Lords<sup>122</sup>. While commentators in the emergency area had quite reasonably assumed the judgment of Mason J to be authoritative<sup>123</sup>, arguably, it had not been approved by the other mem-

bers of the High Court in *Heyman*<sup>124</sup>. But in *Pyrenees Shire Council v Day*, by a 3-2 majority, the High Court has rejected the doctrine<sup>125</sup> as 'presenting considerable difficulty'<sup>126</sup>, as 'not sound'<sup>127</sup>, and as one which 'does not bear sustained analysis'<sup>128</sup>. If, as seems likely, general reliance is not to be considered a basis for implying a duty in the case of a failure to exercise a statutory power by a public authority, it will clearly be much more difficult to demonstrate that the authority is under a duty to take care in such a case<sup>129</sup>. It may be necessary to show some specific conduct generating reliance such as a promise which is acted upon.

Finally, a decision (an act or an omission) may be viewed as a policy decision, in which case a duty will not also arise. This is particularly applicable to acts or omissions which involve or are dictated by budgetary allocations, allocation of resources and like constraints<sup>130</sup>. The 'policy' exception is unlikely to apply however to acts such as the giving out of wrong information. Information which is 'merely the product of administrative direction, expert or professional opinion, technical standards or general standards of reasonableness'<sup>131</sup> is subject to a duty of care.

Even if a duty to take reasonable care can be established, negligent conduct must be shown. The standard which the authority must meet is not necessarily 'best practice'. That standard might be below (or indeed

above) the legal standard. The legal standard, against which allegedly negligent conduct is judged, is that of the ordinary, competent practitioner<sup>132</sup>. While industry standards are not determinative therefore<sup>133</sup>, they are nevertheless highly influential<sup>134</sup>. In calculating the standard other factors are taken into account, namely 'the magnitude of the risk and the degree of the probability of its occurrence, along with the expense, difficulty and inconvenience of taking alleviating action and any other conflicting responsibilities which the defendant may have'<sup>135</sup>. In the emergency area the standard is affected by the enormous harm which may be at stake<sup>136</sup>. A very small possibility of harm, which in other areas of life may not require added precautions<sup>137</sup>, does not mean that no precautions are legally required.

A person or authority which is guilty of negligent conduct is not liable in law necessarily. The damage must be shown to have been caused by the negligent conduct and the damage must not be too remote from the conduct of the defendant. In the case of the provision of information, it is not automatically assumed that a person would have altered their conduct if relevant information had been given to them. If the harm would have resulted anyway, there is no liability<sup>138</sup>. The burden lies on the plaintiff in establishing the causal link between the negligent conduct and the harm.

#### Notes:

116 *Shaddock & Associates Pty Ltd v Council of the City of Parramatta* (1981) 150 CLR 225.

117 When talking of an omission in this context, one refers to mere omissions, rather than omissions in the course of some larger activity, such as failing to stop at a red light in the course of driving: *Trindade and Cane*, 1993, p.375.

118 *Council of the Shire of Sutherland v Heyman* (1985) 157 CLR 424 at 459-460 per Mason J.

119 (1985) 157 CLR 424.

120 (1985) 157 CLR 424 at 460-464.

121 (1985) 157 CLR 424 at 463-464.

122 See *Pyrenees Shire Council v Day* (1998) 192 CLR 330 at [70]-[71] per Toohey J, [105] per McHugh J. Cf *Gummow J* at [164].

123 e.g. McKay 1995, p. 40.

124 *Pyrenees Shire Council v Day* (1998) 192 CLR 330 at [65] per Toohey J; Davies, 1992, p.173.

125 *Pyrenees Shire Council v Day* (1998) 192 CLR 330 at [19] per Brennan CJ; [157] per Gummow J; [231] per Kirby J. McHugh J at [106]-[110] and Toohey J at [77] supported the doctrine. Arguably, the discussion of general reliance by Brennan CJ and Gummow J is obiter, since Brennan CJ found a statutory duty at [28] and Gummow J treated the case as one misfeasance, rather than non feissance or pure omissions at [177]. In addition Brennan CJ appeared to reject general reliance only where a public law duty arose at [19]. General reliance is apt, if at all, to cases of omissions to exercise a statutory power.

126 *Pyrenees Shire Council v Day* (1998) 192 CLR 330 at [19] per Brennan CJ.

127 *Pyrenees Shire Council v Day* (1998) 192 CLR 330 at [157] per Gummow J.

128 *Pyrenees Shire Council v Day* (1998) 192 CLR 330 at [231] per Kirby J.

129 In *Pyrenees Shire Council v Day* (1998) 192 CLR 330 there was no agreement about the criteria for determining, in the absence of the 'general reliance' test, the liability of a public authority in respect of omissions.

130 *Council of the Shire of Sutherland v Heyman* (1985) 157 CLR 424 at 469 per Mason J, approved in *Pyrenees Shire Council v Day* (1998) 192 CLR 330 at [67], [77] per Toohey J. But Gummow J opted for a radical revision in the latter case at [182]-[183]. In *Romeo v Conservation Commission of the Northern Territory* (1998) 192 CLR 431 Mason J's statement of the policy exception was applied with some variation by Kirby J at [139]-[140]. Brennan CJ briefly also took a broadly similar line at [18]. But Hayne J doubted its usefulness at [166].

131 *Council of the Shire of Sutherland v Heyman* (1985) 157 CLR 424 at 469 per Mason J, cited with approval by Toohey J in *Pyrenees* at [67]. A less orthodox view was taken by Gummow J at [180]-[183].

132 *Chin Keow v Government [of Malaysia]* [1967] 1 WLR 813 at 817 (PC); *Miller Steamship Co Pty Ltd v Overseas Tankship (UK) Ltd* (1963) 63 SR (NSW) 948 at 955.

133 *Mercer v Commissioner for Road Transport and Tramways (NSW)* (1936) 56 CLR 580.

134 Balkin and Davis, 1996, p.280; Fleming, 1998, p.133.

135 *Council of the Shire of Wyong v Shirt* (1980) 146 CLR 40 at 47-48 per Mason J.

136 Wensley, 1994, p.3.

137 *Bolton v Stone* [1951] AC 850 (cricket ground accident).

138 An example from the medical area is *Petrunic v Barnes* [1988] ATR 80-147 at 67,329-67,330.

### **Enforceability (5): Legal action seeking damages on the basis of a breach of statutory duty**

Breach of statutory duty is, in theory, a strict liability tort<sup>139</sup> in the sense that the tort does not require an element of fault, such as intentional or negligent conduct, for the right to consequential damages to arise<sup>140</sup>. Nevertheless, the tort does turn on a public and private distinction in that, absent a statutory duty, the tort is not available<sup>141</sup>. Thus, in the case of community education provisions which happen to be phrased in the form of a discretion, the tort is not applicable.

Even where there is, on the face of the legislation, a statutory duty to educate, it is extremely doubtful whether a court would find that the action for breach of statutory duty arises. There are two main reasons. The first has to do with the scope of the wrong generally. If there is a breach of a statutory duty, the civil action for breach of statutory duty giving rise to a right of damages to an injured party is not available simply because there has been a breach of the statute. There must be 'something more'<sup>142</sup>. The extra requirement is a legislative intention to create the private right to sue for any such breach. Since legislation is usually on its face silent on this matter, a court must engage in what has been traditionally described as a process of 'construction', but which frequently involves the application of presumptions and policy considerations rather than a search for meaning<sup>143</sup>. The factors the courts take into account are quite numerous and include the scope and object of the duty<sup>144</sup>. But these factors do not result in anything like wide application of the tort, giving rise to claims that the tort is 'almost no more than a curiosity'<sup>145</sup> and a "token" tort<sup>146</sup>. In point of fact, breach of statutory duty has rarely been applied outside the area of industrial safety legislation<sup>147</sup>. According to Kneebone<sup>148</sup>, the tort is restricted in practice because of an underlying policy *against* strict liability. The basis of the policy is said to be a fear of 'floodgates' liability and judicial overkill<sup>149</sup>, and a preference for public duties instead of private rights<sup>150</sup>.

The second reason why breach of statutory duty will most likely have no application to community education provisions is because of the particular requirements of the tort. As mentioned previously the courts have developed a range of criteria for determining whether a private right is available<sup>151</sup>. While no factor is itself determinative, and commentators point to their 'ambivalent'<sup>152</sup> and 'very rough'<sup>153</sup> nature, two factors stand out in the case of the community education provisions. The first is the lack of specificity of the duty to educate. The specific nature of a precaution

has been held to be important<sup>154</sup>. The second factor to note is the object of the provisions<sup>155</sup>. Even where precise duties have been laid down, as pointed out by Luntz and Hambly<sup>156</sup>, the courts have sometimes refused the action for breach of statutory duty, and the object of the provisions as found by the court has often been crucial. Motor Traffic Regulations are an apt analogy. In refusing the action with respect to such legislation, the courts have found that the duty was imposed only by way of 'securing a measure of order . . . in the general interest'<sup>157</sup>. A similar line of reasoning would be expected to apply in the case of the duties regarding community education found in emergency management legislation.

**It cannot be assumed that all legislative provisions are equally enforceable at law, nor that any provision is necessarily enforceable legally at all.**

### **Summary**

It cannot be assumed that all legislative provisions are equally enforceable at law, nor that any provision is necessarily enforceable *legally* at all. As was noted in a recent High Court judgment: 'It should not be thought that all non-observances of statutory directives addressed to a public body must give rise to a civil remedy. Statements of broad objectives to be pursued afford a paradigm illustration of statutory commands which are not intended to generate a private right of action.'<sup>158</sup>

Speaking generally, the extent to which a legislative power may have legal effects depends on the subject matter, the purpose of the provision and the form in which it is expressed. For instance, a power of government expressed in legislation is generally more justiciable than a similar power having a common law source<sup>159</sup>.

A brief inquiry was made above as to the legal effects, if any, of the provisions for community education in emergency legislation. Legal effects were gauged by exam-

ining whether:

- the provisions were subject to the common law duty to afford procedural fairness
- any statutory duty to educate was capable of being enforced in the courts
- an exercise of the power to educate could be reviewed in the courts
- an act or an omission could give rise to liability in negligence
- a breach of any relevant statutory duty could give rise to an action for breach of statutory duty.

On the whole, the typical legislative provision for community education has limited effects in law, though the possibilities of legal intervention vary according to the legal context. It is unlikely that the provisions would be subject to a duty to afford procedural fairness. A similar fate awaits any statutory duty to educate the community and the related tort of breach of statutory duty. There is a greater possibility that a court would review an exercise of a power to educate (though probably only in an extreme case). Liability in negligence can clearly arise in respect of a positive act, but recent judgments of members of the High Court make liability for an omission difficult to establish.

Legislation is not just a legal document however. It is also a multifaceted political document. The political purposes of the legislative provisions for community education and their effects in this regard are considered in Part Two of this article.

### **Notes:**

- 139 Kneebone, 1998, p.145
- 140 *Galashiels Gas Co Ltd v O'Donnell or Millar* [1949] AC 275 at 288 per Lord Reid.
- 141 Kneebone, 1998, p.154.
- 142 Kneebone, 1998, p.144.
- 143 *O'Connor v S P Bray Ltd* (1937) 56 CLR 464 at 477-478 per Dixon J.
- 144 See further Gardiner and McGlone, 1998, para 18.6.
- 145 Kneebone, 1998, p.145.
- 146 Kneebone, 1998, p.146.
- 147 Kneebone, 1998, pp.152-153; Luntz and Hambly, 1995, para 10.2.11.
- 148 Kneebone, 1998, p.145.
- 149 Kneebone, 1998, p.156.
- 150 Kneebone, 1998, p.166.
- 151 *Tassone v Metropolitan Water, Sewerage and Drainage Board* [1971] 1 NSWLR 207 at 211 (CA).
- 152 Luntz and Hambly, 1995, para 10.1.9.
- 153 Gardiner and McGlone, 1998, para 18.6.
- 154 *O'Connor v S P Bray Ltd* (1937) 56 CLR 464 at 478 per Dixon J; Kneebone, 1998, pp.154, 166-167; Gardiner and McGlone, 1998, para 18.6.
- 155 *O'Connor v S P Bray Ltd* (1937) 56 CLR 464 at 485 per Evatt and McTiernan JJ.
- 156 Luntz and Hambly, 1995, para 10.1.9.
- 157 *Abela v Giew* (1965) 65 SR (NSW) 485 at 490, 491.
- 158 Lindgren J in *Sun Zhan Qui v Minister for Immigration and Ethnic Affairs*, unreported, Federal Court of Australia, 6 May 1997, [1997] 324 FCA, cited with approval by Callinan J in *Minister for Immigration and Multicultural Affairs v Eshetu*, unreported, High Court of Australia, [1999] HCA 21, 13 May 1999 at [176].
- 159 *R v Toohey; ex parte Northern Land Council* (1981) 151 CLR 170 at 219 per Mason J.

## Abbreviations

BA (ACT)	Bushfire Act 1936 (ACT)
BFA (WA)	Bush Fires Act 1954 (WA)
CFA (Vic)	Country Fire Authority Act 1958 (Vic)
DA (NT)	Disasters Act (NT)
EMA (Vic)	Emergency Management Act 1986 (Vic)
ESA (Tas)	Emergency Services Act 1976 (Tas)
FEA (NT)	Fire and Emergency Act 1996 (NT)
FER (NT)	Fire and Emergency Regulations 1996 (NT)
FESAA (WA)	Fire and Emergency Services Authority of Western Australia Act 1998
PCR (SA)	Public Corporations (Fire Equipment Services South Australia) Regulations 1996 (SA)
RFA (NSW)	Rural Fires Act 1997 (NSW)
SC-DOA (Qld)	State Counter-Disaster Organisation Act 1975 (Qld)
SDA (SA)	State Disaster Act 1980 (SA)
SERMA (NSW)	State Emergency and Rescue Management Act 1989 (NSW)
SESA (NSW)	State Emergency Service Act 1989 (NSW)
SESA (SA)	State Emergency Service Act 1987 (SA)
VSESA (Vic)	Victoria State Emergency Service Act 1987 (Vic)

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## Part 2: Is exhortation the key?

The classical description of legislation, still supported by legislators, is that legislation sets out 'commands'<sup>1</sup>. But what are the *functions* of such commands? In emergency management, the directives to educate the community do have some effect in law; in other words, one function of the provisions in question is to provide a basis for accountability in the courts. The extent of this accountability is the subject of Part 1 of this article<sup>2</sup>. It was argued that the effects in law are highly attenuated, due largely to the problematic nature of the subject matter of the provisions and the simple form of the provisions.

If I am right that the legal effect (in the above sense) of the legislation on community education is on the whole extremely limited, does this mean that the provisions are of little public interest and importance? One is reminded of the claim, made by some legal commentators, that law is of marginal utility or, viewed in comparison with other measures, is much more marginal<sup>3</sup>. If legislation on community education is to be judged solely according to whether legal action in a court can arise, it is not hard to make the case for marginality. But why should law be viewed solely in terms of the potential for adjudication? It is true that *lawyers* have traditionally had a court-centred view of the function of law<sup>4</sup>. Bell notes that the 'adjudication view', with the notion of 'ruled justice', dominates Anglo-American legal theory<sup>5</sup>. Tomasic labels this way of thinking the 'legalist paradigm'<sup>6</sup>.

Legislation can have effects in forums other than courts and can be viewed from the perspectives of persons other than lawyers and their clients. Relevantly, laws can be the basis for political discourse and can influence administrative and political behaviour. Indeed, the less scope there is for legal checking, the greater scope there is for the provisions to have political impact.

The first section of this Part accordingly considers the political effects which the provisions **have or could have**. In the second section the article considers alternative legislative models. These alternatives are offered to stimulate reflection on the current offerings rather than as part of a case for necessary reform. The final section offers some conclusions from the study as a whole.

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### Political role of provisions for community education

In light of the above, we may ask what is the political role—or at least the potential political role—of the community education provisions? The first piece of evidence, albeit indirect, is the manner and style in which the provisions themselves have been written. As was evident in Part One, they are not written to encourage their enforcement in the courts. They lack prescription and detail and are markedly different from the more common detailed, anticipatory and prescriptive approach to writing legislation<sup>7</sup>. Community education is commonly expressed as a mere function or power, rather than as a duty potentially capable of being enforced through legal mechanisms. Where community education is said to be a duty, it is in any case (as we have seen) not likely to give rise to obligations which will be enforceable in the courts. Further, a simple reference to 'education' is the common way by which the authorised area is marked out, rather than there being detailed provision for what constitutes 'education' or how it is to be conducted. The audience, too, is referred to simply as the 'community', 'members of the public' or not at all, rather than in more prescriptive terms. The lack of prescription is not made up by a strict 'framework' approach either. Framework laws comprise 'purposive programs with vague standards and generalized clauses'<sup>8</sup>. While such laws clearly lack the enforceable detail of 'anticipatory laws', they at least specify 'the ends to be promoted (or the evils to be eliminated); hence, 'the net is harder to evade'<sup>9</sup>. As noted in Part One, the provisions for community education do not specify the precise purposes to be achieved by education, except in terms of the general purposes of the Act.

The lack of prescription of rules and purposes combines with the provisions providing legal immunity to form a legal barrier. But, taken together, these features of the legislation do more than simply mute legal liability. They accentuate their political impact. Carney notes that procedures set out in legislation can have a political impact in the way they 'may shift power or politically

empower particular interests'<sup>10</sup>. In the present case the bureaucracy is theoretically empowered, particularly in the case of jurisdictions which come under a duty to educate. It is 'theoretical' because it is obvious that without adequate resources an administrator will find their task severely circumscribed. In addition, because administrators would have a power (though not necessarily a duty) to educate without the relevant legislative provision, the political impact of the provision is not so much to shift power where none existed previously; rather it is to give the power a higher profile and greater legitimacy, and to stamp it with some urgency.

The second piece of evidence of the political role of the community education provisions is the *positive* fostering of political rather than legal use. This is evident in the requirements to report annually to Parliament, which apply in most jurisdictions.

The third piece of evidence comes from the annual reports referred to. Recent annual reports demonstrate that many authorities are engaging in extensive community education activities, whether or not they have a duty under the relevant Act to do so<sup>11</sup>. Only a small number of reports do not

#### Notes:

- 1 Robinson, 1994, p. 127 (fn 5).
- 2 See pp. 34–42 of this issue.
- 3 e.g. Unger, 1976, p. 179 argued that, rather than the rule of law, 'the hierarchies that affect most directly and deeply the individual's situation are those of the family, the workplace, and the market'. Hutchinson, 1985, pp. 315–18 saw the courts' role as marginal in policing the administration. Carney, 1991, p. 58 saw the role of formal legal rules as much less than the fiscal decisions in determining 'the shape of programmes (and outcomes for affected citizens)'. Contrast Chisholm and Netthelm, 1997, p. 3: 'In a sense . . . law is a pervasive influence in everyone's life'.
- 4 Bell, 1992, p. 91.
- 5 Bell, 1992, p. 89.
- 6 Tomasic, 1985, p. 85, drawing on work of Richard Abel.
- 7 Carney, 1991, p. 16.
- 8 Carney, 1991, p. 18, citing Trelber.
- 9 Carney, 1991, p. 18.
- 10 Carney, 1991, p. 57, referring to the political impact of procedural protection.
- 11 Northern Territory Emergency Services, in Northern Territory Police, Fire and Emergency Services, 1997, pp. 72–73; Department of Emergency Services and Office of Sport and Recreation (Qld), 1997, pp. 38–39 (Emergency Services Division); State Emergency Service (Tas), in Department of Police and Public Safety (Tasmania), 1997, pp. 39, 40; New South Wales State Emergency Service, 1997, pp. 28, 86–87; Western Australia State Emergency Service, 1997; Country Fire Authority (Vic), 1997, pp. 18, 19.

refer to activity, or do not refer to much activity, in the area of community education<sup>12</sup>. Further, bodies that have mere powers appear, on the basis of the reports, to be at least as active, if not more active, than bodies which have statutory duties to educate the community. Certain bodies with mere powers at least have more extensive reports in this regard<sup>13</sup>. The reports also demonstrate that, in jurisdictions where only a limited range of educational activities is referred to in the legislation, emergency authorities regularly exceed that minimum. The New South Wales State Emergency Service is one example. Its Act refers only to the dissemination of educational material on established emergency management policies and procedures<sup>14</sup>. Analysis of the annual reports indicates that what is being achieved 'on the ground' is not a straight reflection of the legal requirements. Bodies without any statutory mandate (the Western Australia State Emergency Service<sup>15</sup>) engage in extensive community education. Bodies with a mere statutory power also engage in extensive community activity (for example, the New South Wales State Emergency Service and the Victorian Country Fire Authority). Bodies with a limited mandate (the last two mentioned) commonly exceed it. It would seem that administrators do not see their role as simply to implement the legislation. On one view, the legislation is not relevant; rather organisational factors predominate. This view has some merit and is discussed below. On another view, however, the legislation could be having the political effect of highlighting and promoting community education; the *particular* form of the legislation simply not being all that critical.

The fourth piece of evidence of political use is anecdotal. One administrator told the author that in his experience reference to the relevant legislative provisions regularly featured in reports made to his political and administrative superiors concerning obligations to educate the community in emergency preparedness. Other emergency management personnel are, however, not so aware. One administrator with experience in community education admitted to the author in confidence to being unaware of the provisions in his jurisdiction. The potential political use of the community education provisions was a topic of discussion at the Legal Issues in Emergency Management Workshop held at the Australian Emergency Management Institute, Mount Macedon, in February 1998<sup>16</sup>. It was apparent from the comments of several emergency management personnel who participated that the full use of the provisions in political circles may have been overlooked. Several partici-

pants acknowledged that account should be taken of the statutory duty to educate the community (where it exists) in government budgetary decision making. They thought that greater resources for community education might be obtainable as a result.

Finally, a potential political and administrative role for the legislation on community education is in providing a source and reference point for the preparation of written, bureaucratic guidelines. In most if not all jurisdictions there are no such guidelines at present, and this has been attributed to such factors as inadequate experience and lack of funding. But statements of proper conduct have appeared<sup>17</sup>. The key principles proposed and elaborated on by Keys are:

- *Plurality*. Community education should be sought by pursuing 'a range of devices of different sorts which can be layered upon one other'.
- *Timing*. Community education needs to take account of the fact that communicating with the public on the matters of storms and floods must be planned for strategic times.
- *Co-ordination*. The effectiveness of community awareness initiatives can be enhanced by creating partnerships of organisations with interests in heightening the community's understandings of hazards.
- *Evaluation*. Once the necessary expertise is developed, it will be necessary to determine the relative levels of cost-effectiveness of different approaches to the task in order to ensure that the expenditure of public money is soundly based.

The author was writing from experience in educating about storms and floods, but the lessons may reach further.

So far I have been mainly putting the case for the legislation having a political role, both in the present and in the future. But it is appropriate to note respects in which the legislation does *not* have a political role, or has a muted political role. It has already been mentioned that some administrators have until recently been ignorant of the provisions. The legislation has not been the source of delegated legislation or even formal guidelines of which the author is aware. Some of the provisions are clearly outdated in referring simply to the dissemination of educational material; in this respect the administrators must seek inspiration from elsewhere (as has occurred). In a volume on administrative discretion, Lempert noted that the mandate and clarity of the law as understood by the decision maker seem to be important in making a law influential<sup>18</sup>. In the case of the community education provisions, there is little or no

specificity to provide the necessary clarity and strong influence.

Where law is not influential, extra-legal factors fill the void<sup>19</sup>. It is well documented in the literature that, in the space created by and vacated by law, a large range of cultural, social, political, psychological, institutional as well as doctrinal forces moderate discretion to a great extent<sup>20</sup>. In the area of community education it has already been noted that inadequate experience and lack of funding have affected the implementation of the law. An additional extra-legal factor pointed to in the literature is the culture of emergency management organisations which, it is said, tends to be 'hands-on and crisis-focussed in [its] stances'<sup>21</sup>. These factors are predominant partly because the law has not made its mandate sufficiently clear.

For all these reasons, it would seem that community education provisions have not fulfilled their potential to influence administrative behaviour.

## Alternative legislative models and approaches

### Assumptions and frameworks

It is now proposed to consider alternative legislative models and approaches to those currently generally applying throughout Australia. It is not assumed, at this stage, that any or all of the community education provisions require reform. Rather, it is suggested that a fuller appraisal of the current frameworks may be obtained by considering alternative legislative models of community education and comparing them to the model adopted in the emergency management area.

At first sight the statute book might appear to be nothing but a never ending series of ad

#### Notes:

- 12 See State Emergency Service South Australia, 1997, p.3 (function only); State Rescue Board of New South Wales, 1995.
- 13 New South Wales State Emergency Service, 1997, pp.28, 86-87; Western Australia State Emergency Service, 1997, pp.23-24; Country Fire Authority, 1997, p.18.
- 14 SERMA (NSW) s 15(2)(k).
- 15 A state emergency authority was established by FESAA (WA).
- 16 Following presentation of the paper upon which this article is based.
- 17 Keys, 1995, pp.9-10. See also Keys, 1995-96, pp.31-32, which is restricted to the use made of flood plans as educative devices.
- 18 Lempert, 1992, p.214.
- 19 Lempert, 1992, pp.213-214.
- 20 Schneider, 1992, p.87. His chapter sets out such forces at 79-87. Lempert, 1992 also provides a valuable case study of such forces. He also recognises that there is a social science bias in such studies 'not only because they focus on situational pressures that shape behaviour, but also because the rules they most predominantly discuss are frequently legal rules from which behaviour deviates': p.188.
- 21 Keys, 1991, p.13; Keys, 1995-96, pp.28, 31.

hoc responses to a multitude of policy issues, but on closer analysis it may be seen to contain a vast set of precedents for the policy maker. The statute book is an under-rated resource for those whose task it is to evaluate the current law. It is greatly superior to secondary literature in one respect: it presents concrete solutions rather than broadly formed ideas. But—it might be objected—how useful can the experience of other areas of community education be? It is recognised that the emergency area has its distinct issues and problems. Is it, however, *unique* in having no comparable areas? This seems unlikely, for three reasons. First, the same language of ‘community education’ (and similar phrases) is used across various areas, connoting broadly similar tasks. Secondly, broad connections between emergency management and one other area—environmental management—have been made elsewhere<sup>22</sup>. Thirdly, since community education takes place *before* an emergency, the distinct qualities of emergency management, apparent in its response to an emergency, are less relevant.

In analysing the types of legislative or rule-based responses to community education in other areas, it is convenient to adopt Carney’s typology of approaches to legal regulation by way of legislation<sup>23</sup>. That author posits that there are three basic approaches, which are no more than ‘idealised abstractions’<sup>24</sup>. This article has already touched on two of the approaches, but it is convenient to briefly summarise all three models at this point. The first model or general approach he refers to is one which consists of ‘anticipatory laws’. These are laws which contain ‘detailed anticipatory and prescriptive rules’<sup>25</sup>. Contemporary income tax legislation would probably be the best example of this model. What Parliament is trying to do when using this approach, says Carney, is ‘first, to envisage all the circumstances which might unfold in the future, and then to lay down, before they arise, what the precise legal consequence is to be in that particular event’<sup>26</sup>. He is critical of this style because the legislation becomes excessively large and (in his view) ‘(usually) so complex as to be almost intelligible’. Carney also draws attention to the inability of the legislature to be able to read and anticipate the future. Further, because such legislation is a ‘static barrier’, it can be side-stepped by those who might be tempted to avoid Parliament’s will. But Carney acknowledges that anticipatory laws are ‘grounded in the rule of law’ in that [t]he rights of the citizen are charted well in advance of their decision to engage in particular conduct<sup>27</sup>.

The second model of legislation consists of what Carney calls ‘framework laws’. These

have been described as ‘purposive programs with vague standards and generalised clauses’. This model ‘allows for maximum flexibility and responsiveness to the dynamic of changing market and social conditions’. Yet, because it specifies ‘the *ends* to be promoted (or the evils to be eliminated), the net is harder to evade’. An example of a law with some feature of a framework law would be the prohibition against corporations engaging in conduct that is misleading or deceptive in section 52(1) of the Trade Practices Act 1974 (Cth). Although there is some support for moving laws away from ‘exhaustive, predictive and proscriptively framed rules’<sup>28</sup> and towards the framework model, ‘paradise remains distant’, in Carney’s view, because of ‘the risks of writing legislation in such platitudinous generality as to constitute a vacuous statement, or with such a lack of precision as to deprive it of its normative force’<sup>29</sup>. Even if such risks do not eventuate, framework laws ‘substitute discretionary latitude in place of the prescriptive ‘rules’ in which ‘conditional program’ styles of legislation are expressed’<sup>30</sup>.

The third model is dubbed ‘responsive law’. Provisions which devolve planning or grievance resolution functions down to local communities or regionally - based special interest groups, such as validating the operation of neighbourhood mediation centres and other forms of alternative dispute resolution, are said to fit within this model<sup>31</sup>. This approach supposedly provides: ‘greater opportunities for involvement by those people most closely affected by the law. Their values are more capable of being accommodated (even at the expense of allowing for significant differences to emerge between different localities); and their participation brings the law into closer conformity with the needs and aspirations of the particular community’<sup>32</sup>.

At the heart of such provisions is a reliance on procedural norms to ‘regulate processes, organization and the distribution of rights and competences’<sup>33</sup>. In short, this approach aims to ‘proceduralise the solution’ of issues<sup>34</sup>. The responsive model differs from the other two in that it eschews ‘both prescriptive rules *and* the laying down of ends and purposes (whether directly, or indirectly through their encapsulation in standards)’<sup>35</sup>. It does not take ‘full responsibility for substantive outcomes of social intervention’<sup>36</sup>.

While Carney expresses a preference for the responsive model in the area of welfare law<sup>37</sup>, it is apparent that no model is universally suitable; each has its strengths and limitations.

Most of the current community education provisions in the area of emergency

management approximate (without fitting exactly)<sup>38</sup> the ‘framework law’ model, but this does not mean that this model is the only possibility. The current law demonstrates the truth of this proposition. A scheme in Victoria would seem to have the characteristics of ‘responsive law’. Section 5(1)(a) of the Victoria State Emergency Service Act 1987 empowers the State Emergency Service to ‘assist municipal councils . . . in relation to the performance and exercise of their duties and responsibilities under the Emergency Management Act 1986 by . . . providing advice, information, education and training in relation to emergency management’. The latter Act requires councils to prepare and maintain a municipal emergency management plan which must, among other things, contain provisions identifying the resources available for use in the district for emergency prevention (section 20(2)). A draft plan is to be prepared for consideration of the council by a planning committee, constituted by members and employees of the council, response and recovery agencies, and local community groups involved in emergency management

#### Notes:

- 22 Dovers, 1998.
- 23 Carney, 1991, ch 2. Although Carney’s typology is useful, there is a certain confusion generated by differing terminology adopted in the work. He calls the chapter ‘*Styles of Legal Regulation*’, but other words are used to convey the subject matter of the chapter: ‘main forms in which [legislation] may be written’ (p. 15); ‘ways’ in which the message may be conveyed (p. 15) and ‘approaches to writing legislation’ (p. 16) (emphases added). ‘Approaches’ seems the most appropriate term for the following reasons: ‘style’ implies a linguistic analysis only; Carney leaves out of account Plain English styles which would be appropriately considered if that the manner of expression were to be included; and the author later discusses a more specific example of the form of new laws ‘de-legalization’ (p. xiv), which indicates that it is an *approach to regulation*, rather than an analysis of simply the forms in which it is written, which is presented.
- 24 Carney, 1991, p. 23. This seems more accurate than the statement on p. 16 where “anticipatory” approaches to writing legislation [are] those in which virtually all Australian legislation has been written over the years’. For discussion of different approaches, see Barnes, 1994, pp. 303-304.
- 25 Carney, 1991, p. 16.
- 26 Carney, 1991, p. 16.
- 27 Carney, 1991, p. 16.
- 28 Carney, 1991, p. 19. Since this book was written there has been a flurry of writing about this approach, which has been dubbed ‘fuzzy’ law: see Green, 1991; House of Representatives Standing Committee on Legal and Constitutional Affairs, 1993, paras 8.36-8.57.
- 29 Carney, 1991, p. 18.
- 30 Carney, 1991, p. 19.
- 31 Carney, 1991, p. 22.
- 32 Carney, 1991, p. 21.
- 33 Carney, 1991, p. 21, citing Teubner.
- 34 Carney, 1991, p. 21, citing Teubner.
- 35 Carney, 1991, pp. 20-21; emphasis in original.
- 36 Carney, 1991, p. 20; emphasis in original.
- 37 Carney, 1991, p. 25.
- 38 The community education provisions contain ‘vague standards and generalized clauses’, but they lack specificity of the *educative* purpose.



issues (section 21(3), (4)). This scheme can be seen to devolve community education down to local communities, namely councils, who in turn are to be advised by local community groups. The legislation does not prescribe the content or manner of the education, nor does it prescribe ends and purposes. But a municipal emergency management plan is expected to identify 'purposes, methods and systems' in respect of community information and warnings<sup>39</sup>.

Other possibilities, drawn from the statute book, are now reviewed.

### Legislative precedents

One strategy pursued in non emergency areas is a more highly developed framework law approach than the one which dominates the emergency area. The following are instances:

- distinguishing education from related activities such as 'awareness strategies'<sup>40</sup>
- more elaborate general statements as to the educational role of agencies such as: 'promoting, conducting, commissioning and encouraging community educational activities'<sup>41</sup>
- specific reference to giving grants of money for the purpose of promoting the education of members of the public<sup>42</sup>
- being explicit about the goal of community responsibility<sup>43</sup>
- being more frank about the goals, such as in this contribution from the Litter Act 1979 (WA): 'To educate members of the public in, and to awaken, stimulate, encourage and maintain the interest of members of the public in, and to promote public knowledge of, the correct disposal of waste items' (Second Schedule)
- requiring the use of languages other than English<sup>44</sup>
- requiring specified programs to be developed and implemented.<sup>45</sup>

A second alternative approach, which is reasonably common, fits within the responsive law model. For instance, in environmental legislation there are provisions which require the preparation of 'strategy' documents setting out how the objects of the Act are to be achieved. In one case, the document must set out:

- a statement of objectives and performance targets of the Strategy
- a statement of the means by which the objectives and performance targets are to be achieved including a statement identifying persons and organisations requiring education and information
- a statement of the manner in which the named agency proposes to assess its performance with respect to the attainment of its objectives and performance targets<sup>46</sup>.

In another piece of environmental legislation<sup>47</sup>, the procedures are specified to an even greater degree. By a 1998 amendment Act<sup>48</sup>, the NSW Council on Environmental Education is required to co-ordinate the preparation of 'State-wide 3-year plans for environmental education'. The plans must describe the contributions of public and private bodies, including local government, industry and community organisations. In preparing the plans the Council must consult with specified groups, including special needs groups. The plans must provide for objective monitoring by setting out performance indicators. A draft plan must be submitted to responsible Ministers (including the Minister for Education and Training) and, when completed, must be tabled in Parliament to ensure public and political scrutiny.

A third alternative approach employs the anticipatory laws model. Although not strictly legislative, the public education campaign rules developed by the then Australian Telecommunications Authority (AUSTEL) to regulate the use of the telephone caller number display service are nevertheless of considerable relevance<sup>49</sup>. The rules were made under legislation (section 53 of the Telecommunications Act 1991 (Cth)). Though expressed to be non binding, the 'guidelines' were written in the form of legislation<sup>50</sup>. Specifically, the rules required consumer, community and business representatives to be included in the process of developing and disseminating information (guideline 8). As regards the campaign itself, the rules required the campaign to:

- distinguish between an initial phase and an ongoing phase (guideline 9)
- contain information on specified matters (guideline 7)
- achieve awareness of certain issues (guideline 4)
- test (independently if necessary: guideline 15) achievement of a minimum 80% awareness of the key issues amongst general consumers and in the population of special needs groups (guidelines 6, 11)

The guidelines are interesting also for what is left out. They deliberately do not dictate the communications strategies to be employed because of the view that different consumer populations may require different strategies and media (p 46).

### Are more rules better?

#### The rules/discretion debate

We have seen that the current community education provisions in the emergency area replicate a weak 'framework law' model. If any of these alternative approaches were adopted in the emergency area, whether a

more highly developed 'framework law', or the 'responsive law' or 'anticipatory law' models, it would involve a greater level of rule specification than is currently the case. It might be objected that, as a general proposition, more rules are not necessarily better. This objection is one which should be taken on board.

Until recently it was widely thought amongst policy makers that broad legislative discretions should be 'structured'<sup>51</sup>. This was defined by one law reform outfit as 'the specification of principles and criteria relevant to the exercise of [certain] powers so that their exercise is not open-ended and without guidance'<sup>52</sup>. But recent research studies in administrative law have turned this assumption around.<sup>53</sup> On one view, discretion has been elevated from 'being the uninteresting 'hole' in the legal regulation' to 'the centrepiece of the institutional edifice to which the legal rules play a subservient role of setting the boundaries'<sup>54</sup>. The traditional Diceyan view of discretion—as 'automatically raising issues of confinement and control'<sup>55</sup>—has been severely questioned. Whereas the traditional view equated a government of laws with a government of rules, it is strongly argued that 'a system in which basic principles are set out in legislation and are implemented by discretion is also a government of laws'<sup>56</sup>.

#### Notes:

- 39 Co-ordinator in Chief of Emergency Management, 1997, para 3.4.2.
- 40 Environment Protection Act 1970 (Vic) s 49B(2)(e).
- 41 Australian Institute of Multicultural Affairs Act 1985 (Cth) s 4(1)(b).
- 42 Intellectually Disabled Persons' Services Act 1986 (Vic) s 6(2).
- 43 Environmental Protection (Water) Policy Act 1997 (Qld) s 6(d).
- 44 Residential Tenancies Act 1980 (Vic) s 11(1)(c).
- 45 Water Industry Act 1994 (Vic) s 11(4).
- 46 All from the Threatened Species Conservation Act 1995 (NSW) s 140 except that the 'identification of persons and organisations requiring education and information' is from the Environmental Protection (Water) Policy Act 1997 (Qld) s 46(3).
- 47 Protection of the Environment Administration Act 1991 (NSW) s 27.
- 48 Protection of the Environment Administration Amendment (Environmental Education) Act 1998 (NSW).
- 49 See AUSTEL Privacy Advisory Committee, 1996, Attachment B ('Calling Number Display (CND) Public Education Campaign Guidelines').
- 50 The document refers to the norms as a 'requirement' or as 'requirements' (p.63, guidelines 12, 13) and as a 'precondition' (p 6). The rules frequently employ compulsive terminology such as 'must' (7 guidelines). Specific, minimum requirements are also set, rather than simply considerations (eg guideline 6).
- 51 See Cooney, 1994, p.132.
- 52 Administrative Review Council, cited in Cooney, 1994, p.128.
- 53 Conveniently summarised and analysed in Cooney, 1994.
- 54 Bell, 1992, p.102.
- 55 Lacey, 1992, p.381.
- 56 Cooney, 1994, p.136.

Hence, administrative law literature now recognises that both 'rules' and 'discretion' have their strengths. Indeed, to talk of rules and discretion as discrete or opposing entities is obsolete in most contexts<sup>57</sup>; a more useful line of inquiry being to assume a continuum between rules and discretion<sup>58</sup> and to ascertain the *degree* of discretion which will be the most effective means of implementing policy goals<sup>59</sup>. Nevertheless it is convenient to use the language of 'rules' and 'discretion' to connote differing ends of the legal continuum and to examine their *general* strengths and limitations<sup>60</sup>.

Rules can benefit from being written in a reflective atmosphere in which general principles can be established, whereas the exercise of discretions is constrained by looking at a particular controversy in the way it presents itself<sup>61</sup>. Rules are also relatively public in nature and therefore readily available; more certain; more likely to reduce the influence of an official's personal prejudice and ensure like cases are treated alike; more able to communicate information clearly and emphatically; and more efficient where they institutionalise experience. They therefore offer guidance; allow for justification after the fact; may protect officials from criticism in difficult cases; and contribute to the legitimacy of a decision.

But discretion also has substantial general advantages<sup>62</sup>. Discretion can fill gaps in rules and respond to situations too complex for effective rules to be written. Its main advantage therefore is to grant flexibility in application and allow the decision maker to do justice in the individual case—to take account of circumstances that could not be anticipated by rule makers. Discretion may also smooth law making by obscuring lack of consensus or ambiguities in policy. Discretion is said to be consistent with the magnitude of the tasks of the State; with the complexity of many tasks; and with the need for government to accommodate conflicting political interests of organised groups<sup>63</sup>.

Both rules and discretion can be over-used<sup>64</sup>. The literature cautions that evaluating what mix of discretion and rules is appropriate must be made case by case<sup>65</sup>.

Applying these considerations to the emergency area<sup>66</sup>, it can be seen that some considerations support lessening the degree of discretion (that is, support 'rules'). They include the following:

- the nature of the subject matter, in that 'an erroneous decision could lead to major disruption or danger'<sup>67</sup>
- effective control of review bodies, since 'the more detailed the legislative rules, the less opportunity for other institutions such as the courts to 'fill out' policy

- through the interpretation of statutes'<sup>68</sup>
- the existence of recurring and straightforward matters such as the dissemination of factual information
- community education is no longer a novel matter; there is possibly now sufficient experience to write rules.

On the other hand, considerations supporting a broad discretion are:

- the availability of mechanisms other than rules to regulate discretion, such as Freedom of Information
- the costs of rule making, including the problem of rules being expressed in language which is difficult for the non lawyer to understand

**Rules can benefit from being written in a reflective atmosphere in which general principles can be established, whereas the exercise of discretions is constrained by looking at a particular controversy in the way it presents itself.**

- the complexity of emergency education
- the decision making process requires qualitative assessments, for example as to whether a risk is substantial enough to warrant being the subject of education
- the existence of political sensitivities, since discretion allows negotiated, participative solutions to develop.

These competing considerations suggest an accommodation is necessary. Since none of the legislative precedents are either extreme versions of 'rules' or 'discretion', none is inconsistent with the administrative law literature.

#### Status of rules

If a greater specification of rules is thought to be desirable, the manner in which change is to be wrought, and the status of any new rules, needs also to be considered. Possibilities include amending the relevant Act, making delegated legislation under the Act

(if power exists) and expressing policy in the form of a 'guideline' or other 'informal rule'<sup>69</sup>.

Guidelines clearly have the most flexibility, and are increasingly popular<sup>70</sup>, possibly because of the upfront way in which they accommodate the need 'to secure the advantages of *both* discretion and rules while avoiding their disadvantages'<sup>71</sup>. Adopting the analysis of Baldwin and Houghton<sup>72</sup>, we may say that, like rules, guidelines guide untrained officials and facilitate planning and management; encourage consistency in bureaucratic decision-making; and inform the public of official attitudes. And like discretion, guidelines are flexible; can deal with matters that are not amenable to strictly legal language; are relatively free from judicial review; and allow control of official action where legislation is either inappropriate or politically undesirable.

But guidelines have all the virtues and vices of a half way house. Relevant problems referred to by Baldwin and Houghton include the way in which guidelines render the law 'most vague at the points where it should be clear'; the lack of any general law making provision for consultation or public input; the effect of undue lobbying influence of interest groups; the tendency for guidelines to be seen as abdication by the Parliament of making general policy in favour of the administration; and, if Parliament specifically provides for their making, difficulties in ascertaining their precise legal status<sup>73</sup>. The discussion of AUSTEL's 'guidelines' indicated some of the tensions which can arise when decision makers desire the certainty offered by rules but do not want the restrictions which normally accompany them<sup>74</sup>.

#### Notes:

- 57 Hawkins, 1992, p.35. See also Schneider, 1992, p.49.
- 58 Schneider, 1992, p.50.
- 59 Cooney, 1994, pp.135, 140; Hawkins, 1992, p.35.
- 60 The following discussion draws heavily on Schneider, 1992, Hawkins, 1992 and Cooney, 1994.
- 61 Schneider, 1992, pp.72, 73.
- 62 Schneider, 1992, p.49.
- 63 A summary drawn from Cooney, 1994, Hawkins, 1992, pp.37, 39, Schneider, 1992, p.63 and McKay, 1997.
- 64 Cooney, 1994, pp.137-139 shows how rules may be overused.
- 65 Schneider, 1992, p.88.
- 66 Most of the general considerations are selected from Cooney, 1994.
- 67 Cooney, 1994, p.141.
- 68 Cooney, 1994, p.142.
- 69 Baldwin and Houghton, 1986, p.239.
- 70 Chin, 1995, p.97; Baldwin and Houghton, 1986, p.239.
- 71 Schneider, 1992, p.49. Emphasis in original.
- 72 Baldwin and Houghton, 1986, p.268.
- 73 Baldwin and Houghton, 1986, pp.267-268.
- 74 On the surface, the 'guidelines' adopted a rule-type mode.

## Conclusions

While community education is a familiar and widely accepted tool to achieve policy ends in various fields including emergency management, the role of legislation to date has been largely unnoticed. This is not surprising. Legislative provisions concerning community education adopt a low profile in the context of emergency management legislation. Yet, this legislation makes community education necessary in many cases. Even where community education is not in terms mandated, the provisions conceivably have effects in law, but these effects vary from jurisdiction to jurisdiction and in general are quite limited.

Despite these limitations, we ought not criticise or dismiss the provisions for community education as of 'marginal' utility or effect without considering the political and administrative effects. A strong argument can be put that the current crop of community education provisions were primarily designed for facilitative and exhortative purposes rather than for setting legally enforceable limits. Moreover, there is considerable evidence that the provisions, in their current form, have a predominantly political, rather than legal role. The political effects of the provisions—including the way the provisions have acted as a stepping stone for some adventuresome educators—indicate that the form of the legislation has not been crucial, or at least determinative, of the scope of educational activity.

Yet this finding does not mean that the form of legislation and administrative rules ought to be ignored. Legislative provisions and administrative rule-making on the topic of community education in emergency management may well be underutilised, especially when regard is had to the use of legislation in other fields of community education, in particular environmental education. In determining the appropriate degree of discretion in legislative provisions for community education, it must be acknowledged that there are strong reasons for maintaining a high degree of discretion. Community education is still a developing area of knowledge and skills. But it is arguable that emergency management could benefit from legislation providing for the preparation of similar 'strategy' documents or educational 'plans' as are required under certain environmental legislation. The greater specification of objectives, procedures and performance indicators which would be required may well increase the legislation's 'exhortative effect'. These alternative models still retain a wide discretion for the administrator. A greater degree of accountability may also bring about the infusion of increased resources

into community education. Finally, policy makers need to consider the dark horse of litigation. Increased legislative requirements would tend to make the provisions more justiciable in the courts.

## Abbreviations

- FESAA (WA) Fire and Emergency Services Authority of Western Australia Act 1998  
SERMA (NSW) State Emergency and Rescue Management Act 1989 (NSW)

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# Leadership in emergency services

by Julian Yates

One of the consistent themes as we approach the end of the 20<sup>th</sup> century is the call for effective leadership in organisations. Good leaders are seen as critical to meeting the seemingly unending processes of change and review that are impacting on society. Public and private sector organisations struggle to cope with rapidly changing conditions: giants of the past fall by the wayside while new giants emerge (how many of us picked either the collapse of the Soviet Union or the rise of Microsoft two years before the event, let alone a decade prior). The public sector in particular seems to have been singled out for sustained attention by the economic rationalists seeking to impose market driven solutions to problems.

The emergency services have not been isolated from these changes. Downsizing, contracting out, out-sourcing and performance indicators are terms most emergency services personnel have encountered at one time or another. Demand for service rises inexorably while budgets remain the same or shrink, or so it often seems.

These challenges place increasing demands on leaders in the emergency services to cope with and find answers to these issues. The leaders' performance may be critical to the continued effective functioning of the organisation and indeed to the holistic well-being of the organisation's staff. A poor or ineffective leader can do tremendous damage to an organisation and its personnel. The results of ineffective leadership can range from missed opportunities, poor operational or administrative decisions, reducing budgets, an alienated workforce or ultimately, the death of the organisation itself through closure or amalgamation.

The purpose of this article is to look at leadership in the emergency services using a new and refreshing paradigm championed by Alistair Mant (1997). My aim is to discuss the application of his paradigm to the emergency services using my experiences in Police, Fire and State Emergency Service organisations as the foundation for my views. To keep the article at a reasonable length, I have limited the discussion to Mant's approach and do not consider competing approaches or general leadership theories.

Mant argues that good leadership is the key to success and survival, both corporately and personally, as organisations move into the 21<sup>st</sup> century. He also argues convincingly that good leaders abound in most

organisations, but the systems and baggage within the organisations and society as a whole can prevent the skills of these nascent leaders reaching full potential. I will initially outline Mant's thesis, then apply two key concepts, transactional and transformational leadership, to the emergency services environment. Some suggestions on how the leadership potential that lies within the emergency services can be unleashed are then presented for consideration.

Before moving into the main parts of the article, I should point out that what follows is my interpretation of Mant's thesis—I believe I have interpreted it correctly, but this may not be so—any errors are fully my responsibility!

## Alistair Mant and Intelligent Leadership

Alistair Mant is a management consultant who has worked for many years to help organisations improve the way they manage people and so in turn improve their business prospects. An Australian by birth, he learnt his trade through the school of practical experience, starting as a blue-collar worker on the Snowy Mountains Scheme (a major Australian engineering project) in the late 1950s and progressing through large corporations and academia. He has written a number of well regarded books on leadership, culminating with the publication of 'Intelligent Leadership' in 1997.

It is not possible to do full justice to Mant's thesis in an article of this length, but it is possible to present his key points. Mant's first point is not directly related to leadership, but more to how organisations and systems work. Using the metaphor of bicycles and frogs, he argues that organisations and the systems within them have characteristics similar to either one or the other. Now before you turn off and say what rubbish, please read on for a moment. Bicycles are systems or sets of components where individual components can be removed, cleaned, repaired and replaced and the bicycle will function as well or better than it did previously. A part of a bicycle can be removed and added to another bicycle without great difficulty. Frogs are also systems or sets of components but unlike bicycles, it is not possible (except with advanced surgery) to remove and replace parts of the frog without some damage

occurring. Up to a point the frog will tolerate damage, but once too much is removed or changed, the frog collapses and dies. Mant argues that too much modern management theory attempts to treat all organisations as bicycle-type systems—bits can be removed and replaced here and there to improve performance. While there are organisations or parts thereof that fit this description, many organisations are more like frogs—damage tolerant to a point, but after that they can collapse and become dysfunctional. Good leaders are able to see whether an organisation is frog or a bicycle and plan their strategies accordingly.

Leadership, according to Mant, has two complementary aspects, transactional and transformational, and is always based on one key foundation, authority (using the meaning 'knowledge or expertise' e.g. that person is an authority on . . .). I will outline each of these in turn in the sections below, attempting to apply them to the emergency services environment.

Before I do that, it is important to briefly discuss some of the impediments to good leadership identified by Mant. He is highly critical of the current trend to downsize or 'rightsize' organisations, irrespective of the actual needs of the situation. In his view, too many middle management positions have been done away with in the quest for flatter and allegedly more efficient structures. Two problems result. Firstly, in the new flatter structures, many subordinate positions may be receiving insufficient supervision by their managers. This can result in increased errors as mistakes are made and not detected in time (he gives the Barings Bank debacle in Singapore as but one example). It also removes the opportunity for subordinates to learn from and be mentored by their superiors, thus limiting their ability to develop their skills in a supportive environment. Secondly, the excessive pressures on the few top managers makes it difficult for them to remain in touch with issues at the grass roots level as they no longer have the time to do this nor the senior subordinates able to do it for them. As a result, it can be very difficult for junior staff to get their messages through to top management and top management can become out of touch with the operational realities.

Mant argues that there are many people in organisations with outstanding potential for leadership who are stifled by their separation from senior management. These junior staff may often have the solution to

problems but are unable to push their views through to an over-burdened senior manager. In some organisations, senior managers may be highly resistant to change. In these cases, the brilliant junior has little chance of being heard. Organisations and their top managers need to seek out and champion the unsung leaders hidden deep within the bowels of the organisation and ensure their skills are developed and applied to the challenges.

Group-think remains a serious obstacle to good leadership in all too many organisations. Mant is critical of organisational selection systems that result in the same types of people being appointed to senior positions. Their technical expertise notwithstanding, if all the senior management of an organisation have a similar background, then the risk of group-think is high and major problems may result. Mant presents various examples of the insidious nature of group-think and how it causes catastrophes. The Bay of Pigs fiasco is given as the classic example where although *all* of President Kennedy's advisers had private reservations, *all* supported the proposal to allow Cuban dissidents to invade Cuba because each thought he alone had concerns—the invasion failed miserably. Senior managers need to consciously recruit people with diverse skills and experiences to their ranks as this helps prevent group-think.

The final obstacle to good leadership identified by Mant is the presence of hidden psychological damage in people that may only come to light during periods of high stress. This damage may be irrelevant for people initially as they ascend the career ladder, but as stress levels increase a point may be reached when the damage starts to affect the person's judgement. Aggression, cowardice, bullying or retreating into a mental bunker during stressful situations are types of problems that can prevent a person being a good leader, irrespective of how skilled they may otherwise be. This problem is increasing as demands on senior managers increase, raising stress levels and bringing out previously hidden problems.

### **Transactional and transformational leadership**

Mant divides leadership into two broad aspects or types—transactional and transformational (using work in J. McGregor Burns' *Leadership*, published in 1978). Transactional leadership is the art of building and maintaining transactions or relationships between people. The effective transactional leader has good communication skills and is able to persuade people to pull together as a team and work towards common goals. We encounter transactional

leadership all the time – at home, at work and at social gatherings. Transactional leadership often involves a personal relationship between the leader and the follower. Transactional leadership is not necessarily involved with change—a highly effective transactional leader may continue on a path established long ago for reasons long forgotten (and can be very good at continuing along that path despite evidence that it may not be a good path any longer). Transactional leadership is not necessarily linked to formal organisational structures—informal leaders abound, operating alongside formal structures. It is not unknown for senior managers to be poor transactional leaders.

Good transactional leadership is, in my experience, fairly common in the emergency services. They generally have training systems to equip leaders with the basic skills needed to communicate effectively, provide structured hierarchical systems to support them and to attract outgoing and dynamic people able to interact well with people from all backgrounds. The day-to-day work brings emergency services personnel into contact with people needing help in situations where good transactional leadership is critical to successful resolution. In the emergency services environment effective transactional leadership is often immediate, personal and direct. Mutual trust and respect features highly in transactional leadership in the emergency services, particularly at the team level where these characteristics are highly regarded. This trust and respect, however, can be absent or considerably reduced between the lower ranks and the executives of many emergency services. How often have we heard field operatives complain that the 'brass' is out of touch? Mant notes that this problem exists across industries as capable but restrained juniors become frustrated with entrenched senior managers unable or unwilling to see the world as it is (or the juniors think it is at any rate!).

Transformational leadership complements but is quite different to transactional leadership. It is also rather less common. The transformational leader is able to transform or change a situation by focusing on the outcome that is desired and presenting a path or plan to achieve that outcome. Transformational leadership, unlike transactional leadership, can also transcend space and time. Without descending into a mystical discussion of eastern philosophy, it is possible for a transformational leader to exercise leadership without ever having a transaction (in the two-way sense) with a follower. Plato provides an excellent example—although the ancient Greek philosopher has been dead for over 2000 years, his leadership on what constitutes the good

society, as expressed through his writings, continues to have effect today. Other examples of transformational leaders who, although long dead, continue to provide transformational leadership and inspiration today include Kant (German philosopher), Confucius (Chinese philosopher) and Galileo (Italian scientist). It should be noted that it is not necessary to be dead to also be a great transformational leader—the living can also do this! The point is that transformational leadership, unlike transactional, can go beyond personal relationships between groups of people and is able to exist in the absence of any direct relationship between people.

The transformational leader is able to stand back from the details and see the system or organisation as a whole. To use Mant's earlier bicycle-frog metaphor, the effective transformational leader can see the frog as a whole system, understanding the inter-relatedness of the parts that make up the frog and how it relates to the rest of its environment. The effective transformational leader is also able to plan where the frog should go to improve its situation or achieve its goals. Mant places great importance on the role of transformational leaders because they are the leaders able to generate the vision and strategies that will provide the solutions to the issues challenging organisations.

Transformational leadership is not as common in emergency service organisations as is transactional leadership. Indeed the structure and cultures of emergency services almost seem designed to obstruct the development of transformational leaders. The emergency services are normally highly structured, with formalised and rigid promotion systems and cultures that emphasise compliance and conformity. In the heat of emergency operations these structures and cultures are highly appropriate and may be critical to the safe conduct of potentially hazardous operations. To meet the challenge of a fast changing world, however, they may be dysfunctional for the long-term viability and health of the organisation. This is because they may act to prevent the development of effective transformational leaders. The cultures and hierarchy can combine to impose considerable inertia against change and can isolate senior managers from knowledgeable juniors.

Transformational and transactional leadership are not mutually exclusive. Although a transformational leader can be effective without a meaningful relationship with his or her followers, for most of us it is more pressing to transform the immediate situation that our organisation finds itself in

rather than being concerned with our ability to transform the world in a thousand years. To be truly effective as a leader for most people means being able to transact in and transform the workplace. Thus we, and our leaders, need to be able to use both modes of leadership—transactional and transformational.

### **Authority and leadership**

In Mant's model of leadership, authority is the key foundation to any style of leadership and its absence is a recipe for disaster.

Authority is used to mean having a complete and comprehensive understanding of the field or subject matter concerned. It is the expert knowledge that enables the leader to make sound and ethical judgements or decisions that direct where the organisation, section or subordinate goes. Mant argues that faulty leadership is often if not always caused by poor judgement that in turn comes from having insufficient understanding or knowledge of the situation. People can be outstanding in their ability to provide leadership and gain commitment to goals that in the end prove disastrous to the organisation or individuals concerned. He believes that this occurs when a leader strong in transactional and transformational skills does not understand the situation and bases decisions on false premises. The poor understanding can result from inadequate intellectual skills or from isolation from the true situation or a combination of both.

Hitler provides a classic example of how an effective leader who lacks authority and hence judgement can cause enormous damage. Without question, Hitler was a very good transactional and transformational leader. He, almost singled handedly, convinced an entire nation to follow him and transformed a society from one mired in the depths of depression into a military, technological and industrial giant that took on the whole world and nearly won. Hitler, however, lacked authority and judgement. His moral reasoning was highly faulty, creating Nazi police state that was anything but a 'good' society. This reasoning also lacked pragmatic sense. By casting the Jews as scapegoats to be persecuted, he eliminated a valuable source of skills and other resources from Germany's inventory, directly weakening it. The loss of expertise when key minds fled was particularly critical – it must be remembered that many of the scientists essential to the development of the atomic bomb were refugees from Germany. The consequences of Nazi Germany developing an atomic weapon matched with an unstoppable delivery system (the V2 rocket) are horrific to contemplate. The persecution of the Jews also required the allocation of

considerable resources that could have otherwise been directed to the German war effort. His judgement was also faulty on a number of key occasions – the invasion of Russia and his overriding the professional opinion of his Generals on the conduct of the invasion almost ensured the eventual defeat of Germany.

How do leaders come to possess authority? Mant argues that there are several factors that determine whether a leader has authority. Firstly, authority is based on having a thorough knowledge and understanding of the subject area. This knowledge can be obtained through formal training, but must also include a sizeable chunk of practical experience gained through working in the field and learning the ropes and pitfalls the hard way. Authority also comes from having a broad outlook on life coupled with general curiosity about things in the world. Curiosity and the broad outlook provide the leader with knowledge of and awareness about things outside his or her professional sphere. This assists them visualise the complete picture and develop paradigms about where the organisation fits in the bigger system. Someone with a broad outlook and wide ranging knowledge, according to Mant will be better equipped to deal with complex problems than someone with only a narrow technical knowledge. A broad outlook also means the person is more likely to be aware of trends or events likely to impact on the organisation than someone more inwardly focused.

How does this concept of authority fit in the emergency services? If Mant is right, then the emergency services may have a problem. There is no question that the vast majority of emergency service personnel (and their managers) have a thorough knowledge of their immediate work. The emergency services, like the military, are usually very good at providing the skills and knowledge needed to do a good job. In fact the consequences of not providing the skills and knowledge are so serious (deaths and injury may result) that any deficiencies are quickly revealed and rapidly rectified. The emergency services also are good at providing supportive team environments where the new recruit is provided with plenty of advice and guidance.

Countering this, however, are a number of factors that tend to act against the development of leaders with broad outlooks and wide experiences outside of the specific professional fields. The emergency services often exclusively promote from within in a strict hierarchical system. Lateral entry to supervisory positions has been an anathema for many years, although it must be noted that this has started to change, although

when it does occur it normally involves recruitment of a person from a basically identical organisation, rather than someone with a totally different background. Emergency services also generally have a strong culture of compliance with organisational norms. When this is coupled with promotion from within, the result can be restriction on the range of outlooks and views possessed by managers. It can also lead to group-think as all managers may come from the same background and have much the same experience base.

The role of civilian positions in the emergency services also needs close attention. All too often they are second-class citizens restricted to narrow tasks outside core functions. The problem with this as an outlook is that it automatically assumes that they have nothing of value to offer outside of their particular task. This wastes an important source of wider experience and tends to limit the recruitment of first class staff to civilian positions. This particular problem can be very hard to address, as it may be a deep seated aspect of organisational culture highly resistant to change.

### **Improving leadership**

If, as it seems, the emergency services have some inherent structural leadership problems, what if anything can be done about it?

There is much to be applauded in the emergency services. The organisations have developed to meet specific and challenging demands and successfully discharge their responsibilities daily in the most difficult situations. Clearly much must be working for this to occur. They are also very good at developing leaders to an extent; this too must be retained. It is vitally important not to throw the baby out with the bath water.

However, there are significant areas where improvement in the leadership capability of emergency services will enhance the working life of the people in those services and improve the ability of the services to meet the challenges of a fast changing world. This in turn will enable them to improve their service delivery to the community thus benefiting everyone.

Mant has suggestions for improving leadership that are highly applicable to the emergency services. I am unable to address all his suggestions fully due to space limitations, but I have teased out those I found most appropriate.

- A key requirement for good leadership is ensuring that the hierarchy of the organisation is appropriate for its tasks and that sufficient supervisory levels exist. Further, it is critical that supervisors are held accountable for the work of subordinates and that they have the skills and know-

ledge (authority) to supervise, advise and assist the subordinates. Removal of too many management layers is a sure way to create errors and omissions.

- Each person in an organisation must have a meaningful role where they are able to make a measurable impact on some aspect of work. In other words, everyone must have some ownership of some part of the purpose of the organisation. Fortunately this is normally not a major problem in most emergency services.
- The senior management must consciously seek out those outstanding junior leaders that can be found in any organisation and provide the conditions that allow them to develop to their full potential. Equally, they must provide the conditions that permit the competent employee who is not in the above category to also grow and mature and reach their full potential. Both are important as both can contribute great things. Developing these people includes providing opportunities to them to grow their skills in depth and breadth. The emergency services are generally good at the depth aspect, but often omit developing breadth of skills and outlooks. This latter aspect can be achieved through encouraging secondments to

other organisations, supporting tertiary education and providing a culture that accepts innovation and initiative. It also requires senior managers to become more risk tolerant to an extent—subordinates must be trusted to try new ideas with management standing by to advise and assist as needed.

### Conclusion

Effective leadership is vital to the long-term success of any organisation. Change in modern society impacts on all organisations and demands leaders able to develop coping strategies, and motivate people to embrace and support those strategies.

The emergency services as much as any other organisation needs leaders able to exercise transactional and transformational leadership at all levels. These leaders must be knowledgeable in their field, but must also have a breadth of outlook that enables them to see the whole picture.

Although the emergency services are good at developing good transactional leaders skilled in their specific craft, their structure and culture tends to limit the development of transformational leaders with broad outlooks and breadth of experi-

ence. The absence of this aspect of leadership can limit the ability of emergency service organisations to cope with a rapidly changing environment.

Overcoming these problems requires commitment by senior management to the provision of conditions favourable for the development of transformational leaders—this may require changing the organisation's culture to make it more conducive for these leaders to prosper. It is also important that conditions permit all staff to grow to their full potential, even where they may not be potential chief executives.

If emergency service organisations are able to provide these conditions and generate effective transactional and transformational leaders with the knowledge to make good judgements then the organisation will be better equipped to meet a changing world and provide good service and good working environments.

### Further reading

Mant A. 1997, *Intelligent Leadership*, Allen & Unwin, St Leonards.



## 21<sup>st</sup> Annual Combined Emergency Services Seminar

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**Latrobe University, Bundoora.**  
**Saturday November 27, 1999**

The conference will address roles and responsibilities of municipalities and their various support groups dovetailing them with the Emergency Services roles in managing Local Emergencies. This most important relationship which must develop and strengthen will be address at length and will be of interest to municipalities, Emergency Services, the Corporate Sector and to personnel of numerous support agencies.

For further information regarding registration contact:

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The conference website is <http://www.vicnet.net.au/~cessi>

