THE MACEDON DIGEST

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CYCLONE WINIFRED RESEARCH GRANT

The Commonwealth Departments of Health and Local Government and Administrative Services, have announced the joint funding of $30,000 to James Cook University, of North Queensland towards the study of the socio-economic impact of Cyclone Winifred on coastal north Queensland.

The investigation involves an indepth survey of 500 randomly selected households in the Innisfail region. An interim 100 day report will be issued, concentrating on the economic consequences.

A preliminary study indicated that the major economic and social impact of Winifred on the region, is expected to be due to the severe crop damage which resulted. The impact of crop losses, many of which were uninsured, may result in Cyclone Winifred being a greater disaster in overall terms, than Cyclone Althea, which struck the east Queensland coast in 1971.

It was noted that there is a danger that the relatively limited structural damage caused by Winifred, which is neither as visually dramatic nor as geographically concentrated as in Darwin (Cyclone Tracy) or Townsville (Cyclone Althea) may lead to an underestimation of the severity of Winifred's overall social and economic impact. When the structural damage is predominately repaired, the visual impression will be that the economic and community consequences will have been resolved. But the human distress arising from the damage to the agricultural base, will only be beginning to take full effect. Cyclone Winifred, although less intense than Cyclone Althea, was of greater extent and duration, due to the relatively large eye and slow movement. It crossed a region of much more intensive agriculture than Althea and as a consequence, although building damage was less, crop damage was extensive.

The need for an investigation of the economic, social and psychological impact of Cyclone Winifred, was viewed as urgent by both the funding authorities and James Cook University. It was considered that it would be important in such an investigation, to record personal experiences of the pre-impact and immediate post-impact periods. As time passes, memories of these periods will become less accurate, lessening the validity and usefulness of the data gained about these critical phases of disaster planning. In addition, a quickly completed investigation will expeditiously provide information for planning and long term assistance to the region.

A consequence of Winifred impacting on a rural area and thus affecting agriculture, is that the loss of crops will hit not only farm owners, but also farm workers and distributors. The resultant decreased spending money, will be a further burden on the business community of the region. The social and psychological pressure will be increased, by the generally depressed state of the rural economy, especially as a result of low world sugar prices.

Other factors to be studied include the insurance coverage and the consequence of financial loss for the low income residents, and the reaction of this essentially rural community to the immediate pre and post-impact stages of Winifred.

With regard to under insurance, much of the housing was occupied by lower income earners, some as owners some as tenants. Amongst tenants, contents insurance was often lacking, whilst owners often insured houses for market value, rather than the much higher replacement cost. As a consequence, much of the housing loss will result in significant financial loss for this section of the community, further compounding social and psychological problems. The other factor of reaction by residents, is to be examined with regard to issues related to the pre and post-impact stages. Issues to be examined include cyclone preparedness, perceptions of counter-disaster organisations like the police, and how perceptions matched what actually occurred.

The study is expected to give rise to a number of practical applications of disaster management. The project will have special relevance to the development of a stronger pro-active approach by local authorities, to natural disasters.

The investigation will be undertaken by the Department of Behavioural Science, in conjunction with the Centre for Disaster Studies. The project co-ordinators are Mr Patrick Foley, Lecturer in Behaviour Science, and Mr Eric Butterworth, Senior Lecturer in Behavioural Science.

VISITS

Mr Lisle Rudolf, Melbourne University Faculty of Architecture and Planning—Building Performance in Bushfires.

Mr Rudolf, a lecturer in the Faculty of Architecture and Planning at Melbourne University, visited ACDC on 9 July 1986. He provided staff with a presentation on the performance of buildings in bushfires and outlined the theory of what happens to buildings in bushfires. Mr Rudolf has undertaken a detailed examination of the multitude of research and writings on this topic and has produced a most coherent overview of the topic. A summary of his findings will be included in a future edition of TMD.

Air Vice-Marshal W Carter—Cyclone Namu, Solomon Islands, May 1986.

AVM Carter, former Director of the Australian Counter Disaster College (1969–78), visited the College on 7 July, 1986, to brief ACDC staff about his experiences in the Solomon Islands, in the aftermath of Cyclone Namu. AVM Carter, who has undertaken a number of recent counter-disaster consultancies in the Pacific area, was invited to the Solomons to advise the government during the emergency phase. He was also requested to work on a long-term recovery program, in conjunction with government agencies and international organisations.

He commented that the level of destruction was the worst he had encountered, with huge areas layed flat. The Cyclone, although not of a large scale, remained in the north-east of the Solomon Islands and became very concentrated. Winds of 100 mph were accompanied by very heavy rain, which brought flooding and land slides; severe wave action also resulted. 102 people were killed with many injured and missing. Areas of subsistence crop lands were badly affected and massive damage was caused to housing. This resulted in emergency feeding and housing of some 60,000 people. Cash crops like palm oil and copra also suffered, causing severe economic loss. The emergency phase lasted three weeks, but a feeding program is expected to continue until November.

On the organisational front, the Natural Disaster Council was activated immediately and an Emergency Operations Centre was opened. Following some early problems, assistance programs were implemented to cover problems like feeding, housing, health services, water supplies, essential services and community relocations.

As some of the remoter areas were cut off, assessment of requirements was difficult. Thus, with limited food stocks and transport, relief to some areas was restricted. Eventually with the use of civilian helicopters and later with RAAF support, the situation was eased.

It became apparent early that the scale of the disaster meant that substantial assistance was needed with supplies (food, clothing, shelter), specialist personnel, additional aircraft and ships, special equipment (eg water purification plants) and financial assistance. For instance, the total national food reserve was exhausted in 2 weeks and then reliance was place upon substantial support from Australia, New Zealand and other Pacific countries. Red Cross provided basic cooking and other domestic items.

On the medical side, many of the island clinics were destroyed, but assistance in the form of medical teams and supplies came from many countries including Australia, New Zealand, Japan and France. Australia and US provided water purification plants and other essential equipment like water tanks and purification tablets were provided.

AVM Carter commented that, after some problems encountered in the emergency phase, the relief effort was reasonably effective, considering the limited resources available. He is returning to the Solomons in August to examine the lessons to be learnt from the emergency phase and to carry out a planning and preparedness review. He suggested that the following problems need to be examined:

a. in some instances, counter-disaster concepts need to be reinforced;
b. the procedures for the co-ordination of information need to be examined;
c. a need to update the national disaster plan;
d. some organizational and management structures need review;
e. an improvement in warning systems;
f. additional utilization of overseas Defence Forces for survey and assessment;
g. inclusion in the national plan of specific arrangements for coordinating international assistance; and
h. need for improved public awareness training and general preparedness.

Professor Jeffrey Mitchell, Department of Emergency Health Services, University of Maryland U.S.A

Professor Mitchell was brought to Australia by the Social Biology Resources Centre. The highlight of his 3 week tour in August was the presentation of the keynote address at a National Seminar entitled "Dealing with Stress and Trauma in Emergency Services". He also spoke to numerous groups in Victoria, Tasmania and New South Wales including staff from ambulance, fire and police services as well as health/welfare workers involved in disaster planning and emergency work.

Professor Mitchell has developed a now internationally recognised 'debriefing' counselling procedure designed to assist emergency services staff who may encounter trauma, crisis and disaster in the course of their work. This procedure has both counselling and educational components. It has been used as a model throughout the United States of America and more recently in other parts of the world.

Professor Mitchell's address for any further information is Department of Emergency Health Services, University of Maryland, Catonsville, Maryland 21228, U.S.A.

PUBLICATIONS

What the general practitioner (MD) should know about medical handling of overexposed individuals

A technical document has been issued by the International Atomic Energy Agency, titled "What the general practitioner (MD) should know about medical handling of overexposed individuals" (IAEA-TECDOC-366).

It is aimed at the vast number of doctors, paramedics and nursing personnel who, especially in small communities in developing countries, can be faced with overexposures and have the first decisions about the victims. It has been designed to be simple and easy to understand, by all levels of medical services.

The IAEA in Vienna do not maintain stocks of reports in this series, however microfiche copies of these reports can be obtained from:

INIS Clearinghouse,
International Atomic Energy Agency,
Wagramerstrasse 5,
PO Box 100,
A-1400 Vienna,
AUSTRIA.

Orders should be accompanied by prepayment of 100 Austrian Schillings in the form of a cheque, or in the form of IAEA microfiche service coupons, which may be ordered separately from INIS Clearinghouse.

FEATURES

THE WARNING LEAD TIME FOR NATURAL HAZARDS

In this edition of TMD, Professor John Oliver of the University of Queensland concludes his paper on the warning lead time for natural hazards. In the June TMD, Professor Oliver covered the lead time associated with floods and windstorms; in this article he examines several other hazards.

Hailstorms Little can be done on a short-term basis to avoid severe hail damage, especially for cropped areas and buildings. With sufficient time, vehicles can be moved into shelter. However the warning lead time is similar to that for severe thunderstorms with the added uncertainty that destructive hail only accompanies a few thunderstorms.

Land management practices may reduce damage by excluding hail sensitive crops. In urban areas little mitigatory action is feasible. The potential threat from severe hail is demonstrated by the Brisbane storm of 18 January 1985, which resulted in insurance claims of $177 million. No anticipatory warning was possible. One requirement is to assess the hail risk for particular areas. Consideration must be given mainly to post-event disaster response.

Lightning: Lightning is also associated with thunderstorms. In total it is not a negligible threat to life, buildings or electricity supplies, but at any one point its impact is localised and limited. It is manageable by normal community services and does not need special counter-disaster plans. Standby plans can be drawn up so that personnel are ready to act if needed. The warning time is similar to that for thunderstorms.

Bushfires: In identifiable areas bushfires present a major challenge for disaster response. Once a large bushfire developes, it can behave in ways not easily anticipated and at a speed that allows little time for decisions and action. "Half an hour and a few kilometres can make all the difference" (Zillman 1985). The possibilities of different fire situations and the appropriate steps for dealing with them, need to be understood before the threat arises. During the emergency is too late.

The possibility of a bad fire season can be anticipated weeks or months ahead. If previous growing conditions have favoured the build-up of a large volume of ground vegetation and no reduction of this fuel store is undertaken, there is an obvious fire risk. The scene is set for a serious fire threat which may result from lightning or ill-considered or even intentional human actions. The warning for general fire risk may be given many hours ahead, but should many fires break out concurrently, the situation can rapidly become critical. The time available to warn local communities or to carry out evacuation, may then be reduced to tens of minutes. Sudden wind shifts may direct the fire with great speed into unanticipated areas. Such changes of wind direction, speed and gustiness in a few minutes to an hour, so often accompany frontal passage. The fire itself and the nature of the terrain also introduce additional complex local wind patterns. Spotting well ahead (perhaps 10–20 km) is another problem. Last minute changes in the fire situation cut the warning lead time drastically. Highly efficient inter-communication systems and a high level of fire-fighting expertise are essential.

Volcanic eruptions and earthquakes: These natural hazards tend to fall outside the ambit of immediate counter-disaster planning. Volcanic eruptions are not at present a threat in Australia, though there is ample evidence of lava flows or cinder cones in very recent geological times. While a possible threat, the relevant time scale is outside that in which counter-disaster organisations operate.

Earthquakes, on the other hand, are not an infrequent phenomenon in Australia, though few have attained very destructive intensity. Many have struck sparsely populated areas. Just over a hundred years' records, permits specific high risk areas to be identified. The continent is very large and the monitoring network limited, so the precise determination of the probabilities of the risk, let alone the provision of an effective warning, is hardly possible. At present no warning lead time is possible. Counter-disaster organisations cannot neglect the threat and where it is anticipated, they must be prepared to deal with it.

Tsunami: The tsunami poses a potential threat to coastal regions exposed to disturbances from distant, geophysically unstable ocean areas such as around Indonesia or the fringes of the Pacific. Provided the submarine disturbance, which initiates these rapidly travelling and dangerous tidal waves, is not close to the coast and the monitoring system is in place, several hours' warning can be anticipated. The Pacific-wide Seismic Sea Warning System provides cover for the eastern coast of Australia. So far no serious tsunami has affected the Australian coast, but other than on coasts protected by off-shore coral reefs, such as the northeast, the threat cannot be ignored, especially for the southeast and northwest.

Frost: Extensive air frost due to freezing winds,are not a problem in Australia, where the frost threat is the result of nocturnal radiative cooling in dry air, with clear skies and especially in topographical depressions. Frost is mainly of concern in cropping areas and tends to be localised in its impact. The cost of counter measures may well exceed the benefits. The solutions involve, insurance, government relief or a change to frost resistant crops. Weather forecasts can give several hours warning of the likelihood of frost (but far less guidance on probable severity). The response is in the hands of the farmer, not the counter-disaster organisation.

Conclusions: The emphasis in disaster planning for natural hazards must be adjusted to the nature of these threats. It is necessary to consider which of the phases, pre-disaster, emergency or post-disaster rehabilitation is most critical. Warning lead time and its reliability influence this consideration.

It may be the case that counter-disaster organizations attain a high level of search and rescue skills, while decision makers have an imperfect knowledge of the characteristics and behaviour of the natural hazards they have to deal with. There is a case for the preparation of readily understood explanatory manuals, relating operational possibilities to the nature of the threat. It would also be desirable to include in the membership of counter-disaster committees, professional experts, for example from the Bureau of Meteorology, so that due attention is paid in their deliberations to the causes, behaviour and impact of different natural hazards. Public response must likewise be based on a sound understanding of the nature of natural threats. The counter-disaster organization must, therefore include an education role in its programme. The other area in which an important contribution could be made, is the improvement and refinement of natural hazard forecasting on short, medium and long-range time scales.

Reference: Zillman, J W (1985) Surveillance and warning systems for fire, flood, storm and drought. 9th Invitation Symposium, Natural Disasters in Australia, Sydney, October 1985, Pre-print No. 5. *Australian Academy of Technological Sciences.*

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THE MYTHS OF HUMAN RESPONSE IN DISASTER

In the June edition of TMD, Ruth Wraith and Rob Gordon from the Department of Child and Family Psychiatry at the Melbourne Royal Children's Hospital, commenced a series on Human Responses to Natural Disasters. The second article in the series covers the myths of human response in disasters.

Comparatively few people experience a disaster directly, yet it is a highly emotional situation which occupies a place in the thoughts and daydreams of everyone. Both children and adults tend to ask themselves "how would I cope"? This is a way of finding out about oneself, of confronting fears and preparing for any eventuality.

The strong need to know how people react leads the media to present many accounts of people coping with disaster. The various character types and their responses can readily be predicted. These accounts rely on emotion for their popularity, but lead to grossly inaccurate descriptions of human behaviour.

Another source of distortion is the difficulty people have in

maintaining an accurate view of strongly emotionally charged situations. There is on the one hand, a tendency to minimise events and deny their effects, with the aim of showing they are not as threatening as they seem. The result is a failure to recognise real problems and needs. On the other hand, there is also a tendency to over-dramatise important events and show that no one can do anything about them, and things will never be the same again. This approach is one which takes satisfaction in the disaster, and leads to failure to recognise the endurance and resilience of people and communities in the face of extreme situations.

It is understandable, then, that myths should develop about disasters, but proper understanding and planning requires them to be identified and corrected.

A number of the most common myths are dealt with below.

Myth No. 1. People in danger, panic

The idea of panic involves two things. First, loss of control leading to unthinking, impulsive behaviours; second, selfish concern to save oneself even at the expense of others if necessary.

Experience and research show that *panic is very rare* in disasters. *Normal people react to danger by doing the best they can for themselves and those with them.* They may even make mistakes from lack of knowledge or confusion, which may even cost them or others their lives. But that is not panic.

The circumstances under which panic is most likely to occur are when:

a. people do not have adequate information about what is happening;
b. there is an immediate perceived threat of death or serious injury;
c. the people feel themselves to be trapped or a means of escape is blocked; and
d. there is a lack of leadership and direction.

Even in these circumstances only a small number are likely to panic; the majority will take whatever steps are available to protect and comfort themselves.

It is also important not to confuse the need for direction and information with panic. People who are uncertain, may behave inappropriately, but they make rational decisions based on the available information.

Myth No. 2. In the face of personal danger, people only think of themselves.

This is a popular theme in fictional disaster stories, where the selfish behaviour of most is a backdrop to the hero's generosity. However the majority of people in disasters, behave with responsibility and concern for their neighbours. Many stories have emerged from the recent bushfires, of people endangering their own lives to ensure others were safe, of men helping save a neighbour's house while their own burned.

There are always stories of self interest in all disasters, but although they tend to get the most publicity, they are far from representative. Disaster planning should take account of the fact that most people will think of others in an emergency.

Myth No. 3. Too much information is likely to scare people into behaving erratically.

It is sometimes thought that people are unable to handle information about a threat to themselves or their property, that it will cause panic or they will over-react. It is true that if information is incomplete, vague, or ambiguous, its effect on a group or community will be unpredictable and often unhelpful. However, on the other hand it has been found that people are reluctant to believe in the reality of a threat which is unexpected and outside their ordinary experience. Some people refuse to be evacuated even when urged to do so by Police.

The evidence is that the majority of people react responsibly to the information they are given. They usually check it and look to familiar people for guidance and leadership, such as friends and relatives, even if they are outside the threatened area. Sometimes, however the information is misleading or inaccurate. Information about an impending disaster should be provided by somebody known and trusted, or in an appropriate official position. It should be clear and concise about the nature of the threat, the likelihood of it occurring and the possible conditions which may affect it. It should also include suggested courses of action. Categorical statements such as 'there is no threat', should be avoided unless it is quite certain. It is better to be specific about the situation at a given time and provide later information on the altered situation, than to be vague or try to cover too many possibilities.

Myth No. 4. People do not react with severe emotional disturbance when there is no effect from the disaster on them.

This idea is based on the assumption that crisis situations cause people to break down and when they do so, they produce symptoms of mental illness. Where this does not happen, the expectation is that the person has "coped" and will not be affected by it, other than perhaps temporary reactions.

Serious mental disturbance occurs in only a very small number of cases. The majority of people employ the strengths and skills they have and meet the demands of the situation. At the same time, the stress of the disaster experience and the lengthy recovery process can be expected to have its effects on all of those involved. These problems are in the nature of *normal reactions to an abnormal situation.* However these reactions need to be understood. Most people will need extra help during the recovery period, even if only from family and friends. If these response—appropriate reactions are understood and recognised, they can be anticipated and dealt with before they develop into more serious problems, or cause major interferences to the ongoing events of regular life, such as child rearing and marriage.

Myth No. 5. Children are not affected by disasters.

This view is based on the fact that children may show initial obvious signs like nightmares, fears and immature behaviour, but then appear to go back to normal functioning. Children often appear to cope with extraordinary circumstances, without apparent changes in behaviour. Their awareness of events is closely related to the way their parents and other adults experience them. If the adults cope well, the children adapt readily; if not, children become frightened or confused, but often tend to keep their distress to themselves, especially if they sense the adults are unsure of how to handle it.

Children also 'postpone' their responses until they get the 'all clear'. This means they only feel safe to express their problems in their behaviour when things are getting back to normal, or when they sense their parents are ready to cope with them. Then they no longer express their concerns in terms of the disaster events, but in terms of everyday family or other problems. These often go unrecognised as disaster repercussions. Failing to see the connection between the disaster and later problems, leads parents and teachers to misunderstand the behaviour and treat it in ways that may make matters worse.

Myth No. 6. That a community affected by a disaster will fall apart or never recover.

This belief originates in a sensitivity to the far reaching social impact of a disaster. It recognises that such a traumatic event causes permanent changes to the community. If 'recovery' is taken to mean returning to how things were before the disaster, then the community will indeed never recover. What does happen however, is that communities that are not completely obliterated by the disaster, reconstruct themselves and gradually assimilate the disaster into their history, and continue a process of development. Communities, like healthy people, have a capacity to adapt to dramatic events and go on with life. What needs to be emphasized is *how* the community should alter its pre-disaster functioning plans, in order to take the disaster related changes into account.

Disasters stimulate great efforts on the part of community members. Often these result in mutual conflict. The real task is developing community processes which will coordinate these efforts. Otherwise the remaining bitterness and resentment do cause deep community disentions.

Myth No. 7. Workers in the disaster situation are not affected by the disaster.

There is a natural tendency to separate people in a disaster situation into two groups:

a. Those affected, the 'victims'; and

b. Those not affected, the relief workers.

However, anybody entering the disaster setting becomes involved in emotionally powerful experiences. Seeing the destruction, hearing people's stories, the stress and confusion of the situation, all place heavy demands on those whose role is to help. Sometimes these demands, if not recognised and dealt with, can result in health problems in workers or their families, some of which may not show up until a considerable time after the event.

Another hazard of neglecting the effect on the workers is that their performance is affected, and especially those with planning or administrative responsibilities, may have their judgement distorted by their own feelings. This may result in neglecting some needs, giving inappropriate assistance or creating more problems, by misunderstanding the requirements of the situation. The human error factor is responsible for waste inefficiency and needless distress in recovery operations and one way of reducing it, is to acknowledge and cater for the emotional and psychological impact on workers.

The following table summarises these myths:

Myth	Reality	Planning Implications
1. People panic	People behave rationally and responsibly except where there is a threat, no escape, no information, no leadership.	Plan for people to make responsible, reasonable decisions.
2 People look after themselves	People generally care for each other, helping those in need where possible.	Utilise people's wish to help each other.
3 Too much information is bad	People respond more appropriately to information and check it with those they know, before acting	Provide clear, accurate information readily from familiar people or recognised authorities
4 Children are too young to be effected	After immediate responses, children hold back needs until after the crisis. Needs then attach to other normal problems.	Children and families need to have long term support available.
5 If people don't crack up they are not affected	Few people crack up, everyone is affected and suffer stress in varying degrees.	Community and worker education on stress effects and support.
6 Communities never recover from disaster	Communities undergo permanent change which has to be integrated with past and future.	Integrate recovery with local structures, past and future
7 Workers are not affected	Workers are also victims of disaster related stress in varying degrees.	All services require debriefing and support for staff involved in disaster, along with appropriate adaption of administrative methods and techniques of working.

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

Continued in December TMD—"General principles of human response to crisis situations".

DISASTER RESPONSE

Cyclone Namu. Solomon Islands. May 1986

Tropical Cyclone Namu was probably the most severe cyclone to strike the Solomons this century. Namu swept across Southern Malaita and Guadalcanal, leaving a swath of destruction in its wake. Not only were the supplies of local building materials destroyed, severe damage was inflicted upon revenue-producing plantations and in the case of the Guadalcanal Plains area, flooding was the primary cause of the unprecedented destruction.

Uncharacteristically, Namu lingered over the Guadalcanal mountain areas for some hours. The resultant torrential rains in turn washed whole hillsides into rivers and in due course, mammoth quantities of timber swept kilometre-wide swaths across the island's primary agricultural areas.

The Chairman of the Solomon Islands National Disaster Council, Mr Wilson Ifunaoa, requested aid from Australia and New Zealand in the form of winch-fitted helicopters, food, shelter, and first aid.

The Australian Natural Disasters Organisation's National Emergency Operations Centre (NEOC) in Canberra, was immediately manned by permanent operations staff, augmented where necessary by Defence Force Panel personnel. In addition to the Department of Defence, the NEOC's subsequent response actions involved the Departments of Aviation, Foreign Affairs, Health, Housing & Construction, Industry & Commerce (Customs), Immigration and Social Security. Strong support from the Queensland State Emergency Service was also received. While the Australian Defence Force (ADF), provided most of the required response, very significant contributions were made by the Health Department and the Purchasing Section in the Australian Development Assistance Bureau.

Specifically, the following assistance was provided by the ADF. The RAAF flew nine C-130 Hercules sorties to the Solomons between 21 May and 4 June, the primary task being the uplift of disaster relief stores and items associated with the requests from the Solomon Islands Government.

Two UH-1H Iroquois helicopters operated in the Solomons from 21 May to 3 June. They performed invaluable service in the early stages, carrying out reconnaissance, medevac and emergency food re-supply missions. A CC0-8 Caribou aircraft was used for food and equipment drops, the establishment of food and fuel dumps and the evacuation of personnel. HMA Ships Betano, Brunei, Flinders and Stalwart operated in the Solomons from arrivals varying from 26 May to 1 June, until 8 June. Brunei and Stalwart delivered food supplies and reconstruction material and provided medical services, meals to evacuees and manpower to establish camps for evacuees and helicopter sorties. The Army inserted four water purification units and nine operators in Stalwart. The detachment remained in-country until 16 June, providing potable water in areas where the regular supplies had been contaminated or destroyed. On their withdrawal, they were replaced by a preventative medicine team, which provided advice on field hygiene, supervised water distribution points and assisted with the testing of drinking water.

INTERNATIONAL

New FEMA Associate Director

James P McNeill has been appointed FEMA Associate Director of Training and Fire Safety Programs. Mr McNeill will oversee the operations of FEMA's National Emergency Training Centre, which is the home of the National Fire Academy, the Emergency Management Institute and the US Fire Administration. The National Training Centre was established to train those who plan for and respond to natural and man made disasters and emergencies. Mr McNeill, 52, has spent more than 20 years working in the education and training field, including positions as a corporate training director in the chemical industry and as associate Superintendent for the National Fire Academy. He spent more than seven years in financial and employee relations management and five years in national and civil security matters with FEMA and the US Department of Defense. He has had extensive involvement in numerous educational programs, particularly in the areas of public policy, group dynamics and counter-terrorism.

Source: Hazard Monthly, January 1986, Vol. VI, No. 6

Fallout Shelter Space in Canada

F E Jewsbury, Chief of Plans, Directorate of Emergency Preparedness, Public Works Canada, provides the following information on fallout shelter space in Canada. In the Fallout Protection Survey of Canada, involving the analysis of existing buildings designed and constructed with no consideration for protection from gamma radiation, almost 9.3 million shelter spaces, with a protection factor of 100 or more, were located. More than 18 million additional spaces were found to have protective factors of between 25 and 100. Many other buildings would have provided reasonably good protection, except for certain nullifying weak points. If these weak points could have been detected during the initial design stage by an analyst competent in the area of radiation shielding, design changes could have been incorporated to maximise protection, without exceeding budget limitations and, in many instances, without additional cost.

Source: Emergency Planning Digest, October—December 1985.

MAJOR AUSTRALIAN DISASTERS

In terms of insurance loss (at 1986 Australian dollars), the following disasters have had the greatest impact on the Australian community, since June 1967.

Event	*Date*	*Insurance Loss* (1986 Dollars)
Cyclone 'Tracy', Darwin, NT	Dec 1974	$506 m
Cyclone 'Wanda' Brisbane Floods, QLD	Feb 1974	$197.75 m
'Ash Wednesday' Bushfires, Vic and SA	Feb 1983	$196 m
Storms, Brisbane, Qld	Jan 1985	$180 m
Cyclone 'Madge' QLD	Mar 1973	$90 m
Cyclone 'Althea' Townsville, QLD	Dec 1971	$88.5 m
Floods, NSW	Nov 1984	$80 m
Storm (Hail), NSW	Nov 1976	$79 m
Bushfires, Hobart, Tasmania	Feb 1967	$60.5 m
Floods, Sydney, NSW	April 1974	$59 m
Storm, Sydney, NSW	May 1974	$59 m
Cyclone 'Ada', QLD	Jan 1970	$47.5 m
Cyclone 'Joan' WA	Dec 1975	$45 m
Cyclone 'Winifred' North Qld coast	Jan 1986	$40 m

By way of comparison, the insurance losses for two recent Cyclones which struck Fiji (again expressed in 1986 Australian dollars) are as follows:

Cyclones 'Nigel' and 'Erica'	Jan 1985	$88 m
Cyclone 'Oscar'	Mar 1983	$55 m

Source: Insurance Council of Australia, 1 July 1986.

RESEARCH

House survival in Bushfires

A report released in December 1984, has helped to solve the puzzle of why a bushfire destroys some houses, but leaves others undamaged. The report by Andrew Wilson, a forestry researcher from the University of Melbourne, was based on a survey of 450 houses at Mount Macedon, which had survived or been destroyed in the Ash Wednesday fires. It concluded that six factors had a significant influence on house survival. These were fire intensity, attendance by residents, roof material/pitch, wall material, presence of flammable material and presence of plants.

Fire intensity, dependent on the fuel concentration on the ground, was found to be by far the most important factor. Mr Wilson said in his report, that reduction of ground fuels had the greatest potential for reducing house losses and was the major priority in fire protection. By reducing the fuel load 50% the fire intensity can be reduced 75%; by reducing the fuel load 90%, the fire intensity can be reduced 99%.

Another key finding in the report was that houses attended by residents during a bushfire, are far more likely to survive than those unattended. 80% of attended houses in Mount Macedon were saved, compared with a survival rate for unattended houses of only 30%. Mr Wilson emphasised that arrangements should always be made to ensure that young children and disabled people are never left alone during a fire.

WEATHER SATELLITES

A new generation of weather satellites, which will maintain a more precise watch over storm-brewing areas of the Atlantic and Pacific Oceans through the next decade, has been ordered by the U.S. government.

Each satellite, said the National Oceanic and Atmospheric Administration (NOAA), will be launched by the space shuttle and parked in stationary orbit 22,300 miles above earth to maintain a day-and-night vigil on cloud formation over one-third of the globe.

The new weather watchers will have twice the cloud resolution of current satellites, allowing the new craft to spot clouds less than a mile in size. NOAA said that this is designed to give forecasters a better idea of where storms are forming. The new satellites also will be able to perform atmospheric measurements simultaneously with picture-taking operations. The current satellites can only do one job at a time.

Designed to operate for five years, the new spacecraft also will carry radio equipment in order to participate in the international satellite search-and-rescue program carried out with Canada, France and the Soviet Union.

Source: Emergency Preparedness News, Vol. 9 No 25.

VIATEL

For those readers who either own, or have access to a Viatel terminal, you can now contact the College on frame number 22292. As well as being able to send messages to the College, users will be able to obtain information on:

a. college history, activities and location;

b. training courses;

c. publications; and

d. what to do in a disaster?

Besides sending messages and obtaining information, users will be able to use additional response frames, to obtain details on courses and order publications.

At present, the number of frames is being limited until an evaluation is completed into the effectiveness of Viatel as a public education and information medium. As part of the trial, we would welcome any comments from users on the applications of Viatel to public education and information.

The decision to conduct the trial, resulted from overseas experience with videotex, which included use by the Open University in the UK and for flood warnings in Holland. The Education Departments in both NSW and QLD are conducting trials on Viatel, to supplement their School of the Air.

For our readers who are not familiar with Viatel and its capabilities, we suggest you contact your nearest Telecom Business Office for more details.

TRAINING

ACDC

21–24 October NDO Civil Defence Symposium

30–31 October Media in Disaster Workshop

17–21 November Hazard Analysis Workshop

30 November–5 December Counter Disaster Planning

7–12 December Disaster Recovery Management.

Enrolment procedures vary according to the type of activity. Details are outlined in the 1986/7 College Handbook, or can be obtained by contacting the College direct on (054) 261 205.

Drought Workshop 25/30 May—Melbourne

The Royal Meteorological Society, in conjunction with the Bureau of Meteorology and CSIRO Division of Atmospheric Research, conducted an invited workshop on drought for one hundred participants.

The workshop consisted of a few selected papers given by leaders in various fields of drought interests. The workshop then broke into it's ten committees, ie five "fixed" and five "floating" committees. The fixed committees represented research and practitioner groups, whereas the floating groups represented user groups.

Over two days each of the fixed committee's met with each of the floating committees for one hour of information sharing and statements of needs. Each committee produced a report highlighting the major areas of interest and concern. The reports will be combined into a total workshop report, which is expected to be available shortly. Information can be obtained from Mrs Val Jemmeson, CSIRO Division of Atmospheric Research, Private Bag No. 1, Mordialloc, Victoria 3195. Telephone (03) 580 6333.

Many matters were raised as could be expected when such selected influential specialists and internal groups are gathered. The most noticeable were:

a. A feeling of agreement that the best drought relief measures were unemployment benefits and availability of loans at current interest rates.

b. Farm failure was regarded as a result of market forces, although the political realities were also recognised. Fodder and transport subsidies were not well regarded, as they encouraged non mitigation practices.

c. Most participants accepted either explicitely or implicitely that drought was a disaster, however, some particularly the economists, felt that drought was of very little significance. It was accepted that the major effect was to administer a short sharp shock to the economy.

d. Climatologists are able to forecast the probability of droughts occurring if their first decile definition is accepted.

REFLECTIONS

The 'Northern Argus' of Wednesday July 8, 1970 reported that Clare in South Australia, now has a total of six graduates from the Civil Defence School at Mount Macedon, ready to organise a Welfare Section of Civil Defence. Other comments about the Civil Defence School include the following:

> "The School works on the principles that the students are all volunteers and therefore should be well catered for. (They might not volunteer again!)."
>
> "Students are expected to return to their local base and to use the knowledge gained at Macedon to help them to recruit, train and prepare an efficient team ready for any emergency."

By 2 July, 1986, the 30th Anniversary of the College, more than 28,000 students had attended over 1,000 residential courses conducted at the College in its 30 year history. 1,500 of these students had come from 33 other countries, such as New Zealand, Papua New Guinea, and a number of South Pacific and Asian nations.

LIBRARY

The following publications have recently been added to the ACDC library collection. Items may be requested on inter-library loan, through your nearest library, using the approved AACOBS forms:

ADAMTHWAITE, Anthony P. The making of the Second World War. 1979; London, Geo. Allen and Unwin.

940.5311 ADA

AVOIDING NUCLEAR WAR: Common security as a strategy for the defence of the West. 1985; Brassey's Defence Publishers (Pergamon).

355.03354 AVO

BARRY, Bernard & DOWLING, Peter. Towards an Australian Management Style? A study of the personality characteristics and management style of Australian managers. Research Report No. 1. 1984; Melbourne, The Australian Institute of Management—Victoria.

P658.00994 BAR

BEVERIDGE, James M & VELTON, Edward J. Positioning to win: planning and executing the superior proposal. 1982; Chilton Book Co., Radnor, Penn.

658.453 BEV

DIRECTORY OF TERTIARY COURSES IN PUBLIC ADMINISTRATION. 1984: Sydney, Royal Australian Institute of Public Administration.

P351.00071194 DIR

EITINGTON, Julius E. The winning trainer: Winning ways to involve people in learning. 1984; Houston, Texas, Gulf Publishing Co.

658.312404 EIT

FOOD AT WORK: Planning employee food services. Occupational safety and health; working environment series 26. 1982; Commonwealth Dept of Science & Technology; Physical Working Environment Branch. Canberra, AGPS.

P642.5028 FOO

GAMES THAT TEACH: Classroom activitities on individual and community disaster preparedness for elementary and secondary school. MP—59. June, 1975; Washington, DC, Defense Civil Preparedness Agency.

P363.3507 GAM

HAMNETT, Michael P. Regional overview of disaster preparedness and disaster experience in the South Pacific. Pacific Islands development program. Sept, 1982; Honolulu, Hawaii, East-West Center.

P363.349099 HAM

HAZARDOUS MATERIALS, EMERGENCIES & DISASTERS. Conference notes for the third annual combined emergency services seminar, 7th & 8th Nov. 1981, Latrobe University, Bundoora, Vic.

P363.170994 COM

INTRODUCING COMPUTER BASED EQUIPMENT TO THE WORKPLACE. 1985; Canberra, Australian Information Industry Assn. Ltd.

P651.8 INT

KELEN, Stephen. I remember Hiroshima. 1983; Sydney, Hale & Iremonger.

940.5425 KEL

LOTHIAN, J A. Natural Hazards Management in South Australia: An environmental management perspective. 1985; Adelaide, South Australia Dept. of Environment & Planning.

P363.34099423 LOT

McKAY, J M. Community response to flood hazard information. AWRC Research Project 79/120. 1984; Canberra, Dept. of Resources & Energy.

F363.34930994231 MAC

NATIONAL LIBRARY OF AUSTRALIA. Guide to the National Union Catalogue of Australia. 6th Edition. 1985; Canberra, NLA.

F021.6420994 NAT

REGISTER OF FIRE RESEARCH IN QUEENSLAND. Edited by B R Roberts, Darling Downs Institute of Advanced Education, Toowoomba, April 1982.

SPILLANE, Robert. Achieving peak performance: a psychology of success in the organisation. 1985; Sydney, Harper & Row.

658.314 SPI

SWAN, Bernard. War, nuclear deterrence & the church. 1985; Armidale, NSW. University of New England, Dept.of Geography.

P261.873 SWA

THOROGOOD, Frank E. Report to the League of Red Cross Societies on Relief of Kingdom of Tonga following Cyclone Isaac, March 1982.

F363.3492099612 THO

THOROGOOD, Frank E. Report to the League of Red Cross Societies on Volcanic Eruption of Gunung Galunggung, Tasikmalaya West Java, June 1982.

P363.3495095982 THO

TREVETHICK, R A. Environmental & industrial health hazards A practical guide. 2nd updated reprint with supplement. 1980; London, Wm Heinemann Medical Books Ltd.

F615.902 TRE

WALKER, G R & LESTER, L R. Report to underwriters assn of Fiji on property damage in Fiji from Cyclones Eric & Nigel and its implications for insurance management. Part 1. Introduction, conclusions & recommendations. Feb 1985.

F363.1220099611 WAL

WEIL, Marsha & others. Personal models of teaching: expanding your teaching repertoire. 1978; Englewood Cliffs, New Jersey, Prentice-Hall, Inc.

371.102 WEI

Additional copies of TMD or changes of address; please complete and return the following to the College

NAME.....

ADDRESS.....

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Contributions are welcomed and should be addressed to:
The Editor, "The Macedon Digest", Australian Counter Disaster College, Mt. Macedon 3441, Victoria, Australia. They should reach the College at least 1 month prior to the date of publication which is the first day of each quarter.

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