

**AUSTRALIAN EMERGENCY  
MANUALS SERIES**

**PART III  
Emergency Management Practice  
Volume 2 – Specific Issues**

**Manual 2**

**SAFE AND HEALTHY MASS  
GATHERINGS**

**A Health, Medical and Safety Planning Manual for Public Events**

**EMERGENCY MANAGEMENT AUSTRALIA**

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# THE AUSTRALIAN EMERGENCY MANUALS SERIES

The first publication in the original AEM Series of mainly skills reference manuals was produced in 1989. In August 1996, on advice from the National Emergency Management Principles and Practice Advisory Group, EMA agreed to expand the AEM Series to include a more comprehensive range of emergency management principles and practice reference publications. The Series is now structured in five parts as set out below.

Parts I to III are issued as bound booklets to State and Territory emergency management organisations and appropriate government departments for further dissemination to approved users including local government. Parts IV and V (skills and training management topics) are issued in loose-leaf (amendable) form to all relevant State agencies through each State and Territory Emergency Service who maintain State distribution/amendment registers. All private and commercial enquiries are referred to EMA as noted at the end of the Foreword on page v.

## AUSTRALIAN EMERGENCY MANUALS SERIES STRUCTURE AND CONTENT

		Publishing Status—Jun'99
<b>PART I—THE FUNDAMENTALS</b>		
Manual 1	Emergency Management Concepts and Principles (3 <sup>rd</sup> edn)	A/R
Manual 2	Australian Emergency Management Arrangements (6 <sup>th</sup> edn)	R
Manual 3	Australian Emergency Management Glossary	A
Manual 4	Australian Emergency Management Terms Thesaurus	A
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Manual 1	Emergency Risk Management	D
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	Titles to be advised (covering PPRR)	P
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<b>PART III—EMERGENCY MANAGEMENT PRACTICE</b>		
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Manual 2	Disaster Medicine	A/R
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Manual 1	Evacuation Planning	D
Manual 2	Safe and Healthy Mass Gatherings	D
Manual	Civil Defence	D
Manual	Community Emergency Planning (3 <sup>rd</sup> edn)	A/R
Manual	Urban Search and Rescue (Management)	P
Manual	Lifelines	D
Manual	Land Use Planning	D
<b><i>Volume 3—Guidelines</i></b>		
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Guide 2	Community and Personal Support Services	A
Guide 3	Managing the Floodplain	A
Guide 4	Flood Preparedness	A
Guide 5	Flood Warning	A
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## AUSTRALIAN EMERGENCY MANUALS SERIES STRUCTURE AND CONTENT

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### PART IV—SKILLS FOR EMERGENCY SERVICES PERSONNEL

Manual 1	Storm Damage Operations (2 <sup>nd</sup> edn)	A
Manual 2	Operations Centre Management	A
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Manual	Vertical Rescue (2 <sup>nd</sup> edn)	A/R

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Manual 1	Small Group Training Management (2 <sup>nd</sup> edn)	R
Manual 2	Exercise Management	D

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Key to status: A = Available A/R = original version Available/under Review  
D = under Development; P= Planned; R = under Review/Revision

## FOREWORD

The purpose of this Manual is to provide a national reference for best practice Guidelines on flood warning in Australia. It has been prepared for use by individuals and agencies involved in developing and operating effective flood warning systems.

Details of the development of the Manual and other related publications in the Australian Emergency Manuals Series are noted in the Preface on page xi. This Manual was sponsored, edited and published by Emergency Management Australia.

Proposed changes to this Manual should be forwarded to the Director General, Emergency Management Australia, at the address shown below, through the relevant State/Territory emergency management organisation.

This publication is provided free of charge to approved Australian organisations. Copies are issued to relevant users automatically (and upon request) through their State/Territory emergency management organisations.

To support the International Decade for Natural Disaster Reduction, the Australian Government will allow approved overseas organisations to reproduce the publication with acknowledgment but without payment of copyright fees. Manuals may be supplied to other Australian or overseas requestors upon payment of cost recovery charges.

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Enquiries should be sent to the director general, emergency management Australia, PO Box 1020, Dickson, ACT 2602 Australia, (facsimile +61 (02) 6257 7665, e-mail: [ema@ema.gov.au](mailto:ema@ema.gov.au)).





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## PREFACE

This Manual has been prepared with a view to achieving the conduct of successful, enjoyable, incident-free mass gathering events. In using the Manual personnel need to be aware of the reasons behind the conduct of the event and understand that whatever the event there will be some risks just as there are in life. This Manual will assist in the management of these risks.

The Manual has been prepared primarily for use by emergency managers and health personnel including environmental health officers, first aiders, ambulance officers, nurses and medical officers. It is hoped that these people will become proactive in the planning for public events to ensure that adequate measures and systems are in place to prevent, reduce and provide care for injuries, illness and suffering which may occur.

There are many people, in addition to health personnel, who contribute significantly to healthy outcomes at public events. It is anticipated therefore that this Manual will be distributed to event promoters, managers, emergency service personnel, government bodies and any organisation or individual who contribute to the organisation of events. Wide distribution should be encouraged, providing it is understood that the detailed contents of the Manual are directed principally at managing the health and safety aspects for all participants, officials and spectators at an event.

It is not intended that the document override any existing legislation or local emergency management procedures. The Manual does not seek to address the preparation of emergency response plans, but rather identifies the elements which should be considered by those responsible for planning and conducting events which attract large numbers of people.

Local governments and emergency services should be approached for more detailed advice on other aspects of planning and for the necessary permits and licences required.

**Being involved in the planning will keep the suspense and surprises  
for the crowd only.**



# INTRODUCTION

## BACKGROUND

Throughout Australia on any given day events are conducted which attract crowds large and small, at varying types and styles of venue. The quality and quantity of planning and preparation for health and safety aspects of these events vary considerably. This may be due to many factors such as the number of spectators, the nature of the event, and the promoter's experience. Inadequate planning can increase risks associated with insufficient or ineffective spectator management or service provision. The evidence lies in the large number of public events where multiple injuries, illness and deaths have occurred. A review of the more catastrophic of such events can be found at Annex A and illustrates that the problem is a world-wide phenomenon.

Furthermore, in planning events, organisers may fail to consider 'what if a major emergency situation should occur during the event?' All of these risks pose a threat to the successful staging of events, and therefore need to be managed with appropriate planning and preparation.

Planning for public events requires cooperation between event organisers and relevant government, private and community organisations. Quite simply, the decisions of one party in the planning stage can have an impact on the preparedness of another, so a sharing of knowledge and information is imperative prior to the event.

While event promoters or managers have primary responsibility for planning and preparation, the involvement of health professionals and emergency managers in the pre-event planning phase may contribute to a safer, and therefore more successful, event.

Against this background, and as an initiative of the Commonwealth Department of Health and Aged Care, a representative group of Australian health professionals was convened under the aegis of Emergency Management Australia to prepare a Manual for health personnel in planning and preparing for mass gatherings.

The group prepared the paper as a first draft in readiness for the Mass Gathering Medicine Workshop conducted at the Australian Emergency Management Institute (AEMI), Mt. Macedon from 3 to 7 March 1997 with a view to incorporating any additional contribution in a final document for distribution Australia-wide.

By the sharing of information at the workshop, the awareness of the participants as to a greater need for proper involvement of all members of the health community in managing public events was raised. The comprehensive emergency management approach - Prevention, Preparedness, Response and Recovery - provided a sound basis for analysing the topic and developing strategies which could be utilised to manage health risks associated with these events.

Later, a Safe Crowd Management Workshop was conducted at AEMI from 8 to 12 September 1997 with a broader-based attendance, that included event managers and police, fire, security, State/Territory Emergency Services and health personnel. The output from this workshop, namely a checklist of elements to be covered in the planning process, has been included in Annex B to this document.

It was further hoped that the participants of both workshops would become the advocates of these planning principles, and encourage their adoption by event promoters, organisers, emergency service personnel and local government authorities. Ideally, all of these organisations should be consulted before permission is granted for events to proceed.

## **SCOPE**

The aim of this Manual is the prevention of injury, suffering or death that may occur as a result of poor planning or preventable misadventure at public events.

Whilst a number of sociological texts address the underlying causes of what might be termed crowd behaviour, little definitive effort has been applied to capturing the lessons learned from such incidents, and providing the experiences in a form that can be used as a Manual for planning such events in the future. It is toward this goal that this project was directed.

The Manual has been developed from a number of sources and is applicable to a wide range of mass gatherings. These sources have focused on youth audiences attending large rock concerts and competitive sporting events, due to the difficulties and major incidents historically associated with such events. Much of the guidance derived from such experiences is applicable to other events which present their own challenges.

Certain types of events have, by their nature, an inherent capacity for special management problems. While the general guidance given in this document remains applicable to these events, additional considerations are identified in Chapter 8: Special Plans for Specific High-Risk Events.

In certain situations, such as visits by high-profile political figures or controversial activists, intensive security arrangements are necessary. Such procedures are outside the scope of this Manual, and it would be inappropriate and counter-productive to provide details herein, given the wide and unrestricted distribution of this document. Where such events are planned, liaison between emergency service personnel, health professionals and appropriate security personnel is required to ensure health and safety and security issues are addressed in planning for the event.

## **SYNOPSIS**

This Manual focuses on a number of major areas which, either singularly or collectively, have historically contributed to problems at mass gathering events. These have included site selection, venues, structures, public access, spectator and crowd management, emergency service access/egress, public safety, security, public health and medical care.

Detailed assessment, planning and preparation before an event may never prove infallible, but with the involvement of appropriate personnel and the commitment of the right resources, the potential for injury, illness, death and disaster will at least be reduced.

**Public events should be enjoyed by all.**

## **ACKNOWLEDGMENTS**

Emergency Management Australia acknowledges, with thanks, the valuable contributions provided by a large number of health and other professionals and, in particular, the following people:

- Dr Ken Abraham, Director Group Adult Emergency Services, Prince of Wales Hospital.
- Mr Don Crosby, Manager Operations Planning, South Australia Ambulance Service.
- Chief Inspector Bob Graham, Special Events Planning Coordination Officer, Victorian Police.
- Ms Lyn McLennan, Senior Environmental Health Officer, Victorian Department of Human Services.
- Mr Don Withers, former Director, Counter Disaster Unit, Commonwealth Department of Health and Family Services.

The contribution of Jonathan Abrahams and Judy Parker from Emergency Management Australia to the preparation of this Manual is acknowledged.

Acknowledgment is also made of the paper 'Emergency Preparedness Guidelines for Mass, Crowd-Intensive Events', Prepared for Emergency Preparedness Canada, by James A. Hanna, M.Sc.





# CHAPTER 1

## PRE-EVENT PLANNING

### INTRODUCTION

1. Any public event begins as a concept proposed by an individual or organisation. The concept may not be more than the type of event, and when and where it will be held. During the planning process many issues will need to be considered and explored by organisers and authorities before an event proceeds. An extensive checklist of these elements is at Annex B.
2. Event organisers/promoters should be encouraged to form a 'management committee' including members of the emergency services, local authorities and health services. Sub-committees may be required to provide planning for particular aspects of the event. Health professionals should be involved in planning for all phases of the event, including pre-event preparation, conduct of the event and demounting of the facilities. The following are some of the key issues that should be addressed from a health and safety perspective.

### APPROVAL FOR EVENT

3. Event organisers usually must gain approval from local, and sometimes state, authorities to hold public events. Information on the approval process should be obtained, including:
  - details of the approving authority and any other authorities actively involved in the approval process;
  - information required to support their application; and
  - timetable including relevant deadlines for lodging of applications. (Lead time will be required for applications to be processed).
4. As a condition of approval being granted, after the event, organisers may be required to provide feedback on the approval process and an evaluation of the event. This may be done in the form of a debrief or a report to relevant authorities.

### LEGAL ISSUES

5. There is usually some form of legislation which governs or restricts public events or aspects thereof. In some cases, particularly for extremely large or high impact events, special State or local legislation for the event may be required.
6. Organisers should consider obtaining legal advice prior to the event. Items which warrant consideration include:
  - liability for injuries;

- liability for acts or omissions;
  - liability for financial obligations incurred in responding to major emergencies occasioned by the event; and
  - possible liability for the resultant effects of the event on normal emergency operations.
7. Permits will be required for parades, sale and consumption of alcohol, and fire safety. Permission may also be required should it be necessary to close certain adjacent or peripheral roads or streets.
8. Most public sector agencies have adopted a “User Pays” policy for services provided at sporting and entertainment events. The aim of this policy is to improve the allocation of statute resources in the general community, by providing a system of charging for services deployed to plan for, and respond to, sporting and entertainment events. Event organisers should consult local and state authorities for relevant fee structures and to determine any charges for services provided.
9. Organisers may be required to post a bond or provide liability insurance cover to meet costs of response to emergencies, subsequent venue clean-up, traffic, crowd, and other policing functions.

## **VENUE**

### **General**

10. It may be necessary to consider a number of alternative venues for the event. Emergency managers may be able to recommend appropriate venues based on health and safety considerations.
11. The following should be considered in selecting a suitable venue:
- Will multiple venues be required to stage the event?
  - Is the event normally conducted at a fixed facility?
  - Is it planned to use a fixed facility in other than its normal use?
  - Is the event regularly conducted at a temporary venue?
  - Is the event a ‘one off’ at a temporary venue?
  - What services/utilities are available at the venue?
  - What additional services and utilities will be required at the venue?
  - Is there a need for backup services?
  - What shelter facilities are available at the following?
    - Transport pick up and set down areas.
    - Spectator and official viewing areas.
    - Seated eating areas.
    - Pedestrian thoroughfares.
    - First aid and medical centres.
    - Competitor and officials marshalling areas.
  - What will be the duration of the event and will it go into the hours of darkness?

- Have the needs of people with disabilities been provided for?
- Does the date of the event clash with other events to be conducted in the area?
- Will the weather require any special considerations?

## **Hazards**

12. In selecting a site, especially for an outdoor event, an analysis should be made of any potential hazards in the area. Hazards may include:
- power lines which could be brought down by a severe storm;
  - waterways that may be prone to flooding;
  - bushfires;
  - high winds;
  - extremes of temperature; and
  - pests, large animals, pollens and poisonous plants.

## **Access and Egress of Health and Emergency Services**

13. The needs of health and emergency services for access to, and egress from, the venue, as well as movement around and within the site, must be taken into account in planning for the event. Official parking should also be made available for attending health and emergency services personnel.
14. Planning should ensure that emergency services personnel have access to all sub-sections of the venue, including performance, spectator and parking areas.
15. Transport management is essentially the domain of police, venue security, and transport and local government authorities. Planning should ensure that the venue has adequate access and egress for emergency service vehicles. Dedicated perimeter roads may be required for emergency services. In order to provide access and a buffer zone, adjacent streets on all sides of a venue may need to be closed, and parking banned, with access restricted to emergency, service and residents' vehicles. Emergency services need to be informed of any traffic alterations from the norm, such as the blocking off of public streets. Roadways and access routes should be clearly distinguished, signposted and kept clear.
16. The venue needs to have an adequate access and marshalling area for emergency vehicles. Considerations should include the following:
- Is there adequate access to and within the venue? Is there a road network, or would responders have to walk significant distances to the spectator or performer areas?
  - Is the venue served by a road which could be closed to the public and used only for access and egress of emergency service vehicles?
  - If access roads are unpaved, would emergency or service vehicles become bogged if heavy rains occurred during, or just prior to, the event?

- Once on-site, is there sufficient room for marshalling, manoeuvring, repositioning or redeployment of emergency vehicles?
- Would departing vehicles be prevented from leaving by congestion produced by other vehicles arriving ?
- Are adequate access and marshalling areas available for large numbers of emergency vehicles should a major incident occur?
- Is there a suitable site available for aeromedical evacuation?
- In the event of a mass casualty situation, does the venue layout provide, space for an on-site triage area to permit treatment prior to removal of patients? To eliminate the need to carry casualties and equipment over long distances, is such an area easily accessible?

## **Crowd Movement**

17. Aspects of managing crowd movement where there may be health and safety implications include the following:

- Public transport – congestion at road, rail, and water interchanges and, in some cases, at airports.
- Use of coaches and buses to reduce private vehicle usage and any potential problems which large vehicles may present, for example access difficulties, parking requirements, potential road blockages.
- Alterations to normal traffic arrangements and different patterns of road usage.
- Traffic control.
- The surrounding road network should be able to handle the anticipated spectator vehicular traffic, before, during and after the event.
- Public parking arrangements, overflow parking arrangements, signposting, segregation of pedestrian and vehicular traffic. If spectator parking areas overflow, will it cause congestion on surrounding roads? Are shuttle buses desirable, feasible, or necessary?
- Parking control.
- Communication between traffic management groups and other services.
- Access and egress routes including:
  - arrangements for people with disabilities;
  - pedestrian access including consideration of distance, terrain, surface and lighting; and
  - designated pick up/set down points.
- Signposting, including gate numbering, inside and outside of the venue.
- Communications inside and outside the venue to provide public announcements, marshalling instructions and evacuation orders.
- Systems to monitor crowd flow, for example the use of spotters.
- Emergency services access.
- Outdoor events, sometimes spread over large areas, require some further considerations such as:
  - toilet facilities outside gates and between disembarkation points and the venue;
  - shelter; and
  - telephone facilities.

18. The venue should allow adequate regulation of crowd movement, for example: existing ticketed seating areas, sectoring and flow barriers including separation of vehicles from pedestrians.
19. Spectator overflow areas should be available to prevent crushing. Contingency plans are required in case spectator turnout significantly exceeds expectations. This phenomenon is common at rock concerts.

## **SPECTATORS**

20. Different kinds of events may attract certain types of spectators which require special considerations such as:
  - rock concerts may have a higher incidence of problems with drug and alcohol abuse, underage drinking and possession of weapons;
  - religious/'faith healing' events may attract a significant number of ill and infirm people, which may increase the need for on-site medical care;
  - events for senior citizens may also require higher levels of health services;
  - certain sports events may attract over-reactive and violent supporters; and
  - cultural events may require special arrangements, including the provision of interpreter services, special food services and multilingual signposting, brochures and announcements.
21. Where possible, spectators should be informed prior to the event, through advertisements or in leaflets accompanying tickets, of any special conditions or arrangements for the event such as public transport, traffic and parking, clothing, food and drink, sunscreen, shelter and alcohol restrictions.
22. For further information on spectator control, please see Chapter 4

## **PUBLIC HEALTH**

23. Relevant health authorities must be consulted on:
  - safe and adequate water supply;
  - food safety;
  - sanitation requirements and waste management;
  - water and swimming pool safety;
  - pest/vector control;
  - infectious diseases prevention and investigation;
  - standards for activities involving skin penetration, such as tattooing and body piercing;
  - building safety;
  - noise and other nuisance issues; and
  - public health emergency management/planning.
24. Environmental Health Officers should be available on-site during the event to deal with any public health issue and to monitor public health aspects of the event.

25. Health authorities need to have legal authority to enforce 'cease operation' orders upon any on-site food providers who are found to be in contravention of food safety standards or otherwise operating contrary to the public interest.
26. For further information on public health, please see Chapter 5.

## **MEDICAL CARE**

### **General**

27. General medical issues to be considered include the following:
  - What level of on-site medical care, if any, is expected to be required given the nature of the event?
  - What mix of medical personnel will be required on-site, for example, first aiders, paramedics, nurses, doctors?
  - Who will provide the personnel? How will they be funded?
  - Are they the health service providers for the local area? If not, how will their services be integrated with the local services?
  - Are the selected personnel appropriately skilled for the event? Additional training may be required.
  - Will there be a need for any special credentialling to allow medical personnel and/or vehicles access to all parts of the venue, especially to any restricted areas?
  - How will medical supplies be obtained and resupplied? Who will do this?
  - How will drugs be stored securely on-site?

### **Facilities**

28. Suitable medical facilities, such as a first aid room, tent, or vehicle, should be on-site. It should be clearly identified and easily accessible.

### **Ambulances**

29. The relevant ambulance service must be consulted to determine ambulance requirements for the event. Some considerations are as follows:
  - Will ambulances be pre-positioned on-site, or will they have to be called to the venue on an as-required basis?
  - If ambulances are on-site for participants, (for example at sporting events) are these ambulances exclusively for participants, or will they be available for injured spectators?

### **Logistics**

30. There are many medical logistic issues to be considered in the planning of an event including:

- Will medical staff operate in a facility to which the injured must make their way, or will clearly identified medical teams patrol spectator areas?
- Will there be vehicles to transport spectators to the medical facility?
- Will medical vehicles be appropriate to the terrain? For example, four-wheel-drive vehicles may be required for off-road areas, and golf carts or similar vehicles for high-density spectator areas.
- Where an ambulance is not required, will a 'chauffeur system' be provided to transport persons from the medical facility to their own transport?
- How will medical staff be notified of or summoned to spectators requiring assistance in widespread spectator areas?
- What means of communication will be available for attending medical personnel to communicate with off-site medical staff, event organisers, security and other support staff?
- Are there any sponsorship conflicts between the event sponsor and any medical service sponsors?

31. For further information on medical care, please see Chapter 6.

## **POLICE AND SECURITY**

### **General**

32. The provision of security services and the stewarding function are vital in relation to public safety, particularly within the venue. There are essentially three types of security that can be provided at large public events. These are:

- peer security;
- police officers in uniform; and
- private security guards in uniform.

33. The composition of security services will vary according to the event, with different events better served by one or a combination of the three categories.

34. Roles and responsibilities of security personnel must be clearly established prior to the event. Decisions and actions taken by security personnel may impact upon the way in which emergency services and health personnel respond to a given situation. In planning and throughout all stages of the event a close working relationship should be maintained between:

- security personnel;
- health and medical services;
- other police and emergency services; and
- other security services, for example, those responsible for the performers.

### **Responsibilities and Functions**

35. The responsibilities and roles of security personnel should be clearly defined before the event. These may include:

- crowd management, including measures to prevent crushing;
- control of access to stage or performance areas;
- security control at entrances and exits;
- minimise risk of fire by patrolling area;
- control of vehicle traffic and marshalling;
- searches for alcohol, drugs, weapons;
- security of large sums of money and confiscated goods;
- assist emergency services if necessary.

36. Key security considerations are as follows:

- Will the event organiser/promoter use police officers for on-site security, or will private security officers be engaged?
- If private security officers are to be used, what will their role and functions be, and how will their services integrate with the police? Are they permitted to work outside the venue?
- What policies will be enforced in relation to minor offences on-site, so that discretion is exercised consistently during the event?
- Will there be areas on-site for the collection and storage of significant sums of money, and what security will be in place to protect these areas and off-site transfer/banking? Are these areas positioned near road access to avoid carriage of large sums of money on foot through spectator areas?
- What arrangements have been made for the movement of high profile persons through crowded areas?
- What arrangements have been made for lost or stolen property?
- What arrangements have been made for detection of forged credentials?

### **Pre-event Briefing of Security Personnel**

37. To enable security personnel to perform these duties effectively, it is vital that they be appropriately briefed prior to the event. This briefing should provide security personnel with:

- details of the venue layout, including entrances, exits, first-aid points and any potential hazards;
- clear direction on the management of unacceptable behaviour;
- details of emergency and evacuation plans, such as raising alarms, protocols for requesting assistance and evacuation procedures; and
- instructions for the operation, deactivation and isolation of any on-site machinery and utility supply in case of emergency.

38. The attitude of security personnel is a major factor in crowd compliance. Security personnel are charged with not only controlling a crowd, but also with making them feel welcome. Every individual staff member who comes into contact with the spectators plays a role in crowd controller. The dress, demeanour, and actions of staff may set behavioural expectation levels, and these factors should be considered in planning and pre-event briefing of staff.



## Deployment

39. It is important that strategic deployment of security staff be considered. All venues will have areas particularly suited to crowd monitoring and problem areas where particular attention is required. Deployment considerations include:
- identification of key points such as entrances and exits, barriers, and general thoroughfares; and
  - establishment of strategic observation points to monitor crowd movements and behaviour. (A central control room with video surveillance may be required).

## Peer Security

40. Experience has shown that, in general, security for events attracting youth audiences is better and more simply achieved by what is termed 'peer security' - security personnel of the approximate age of the spectators who can relate to and be accepted by the youthful patron. Usually wearing brightly coloured T-shirts plainly marked SECURITY (or at one event, 'SECURITY - Please Feel Secure'), peer security personnel provide a less confrontational security presence by avoiding the posture of rigid authority and the force that often accompanies it. As one concert organiser commented on his experience with peer security:

"They do not carry weapons and do not attempt to fill a police function. They serve as crowd monitors, people movers, and troubleshooters. Such personnel are not there to reform or catch the alcohol or drug user... They concentrate on maintaining orderly crowd flow for the safety of the patrons".

41. Appropriate Guidelines for peer security personnel should be provided, and limits to their authority stipulated. Duties for security at the historic Woodstock concert in 1969, which attracted 500,000 spectators, were:

*"... keeping the peace, helping people in distress, assisting the staff of doctors and nurses, clearing paths for ambulances, seeing that areas were cleared for helicopter take-offs and landings, and guarding the stage, the performers, and all the land we hadn't rented. They did not include busting people, whether for drug offences, nudity, obscene gestures, or sex acts. People on bad drug trips were to be handled gently until someone with experience could be found to assist."*

## Private Uniformed Security

42. Private uniformed security are probably better suited to events which attract more docile spectators, such as religious rallies, charitable dinners and art shows, and usually will be less costly than a police presence. At events attracting crowds of more youthful exuberance, or volatile sports spectators they are probably more appropriately utilised in non-confrontational roles, such as ticket-taking.
43. Care needs to be taken to ensure that private uniformed security is only recruited from reputable sources with competent and suitably trained personnel. Special requirements for the event should be carefully addressed.

44. In certain circumstances, private uniformed security can lead to problems. A uniform gives an authoritative appearance that is often not supported either by adequate training or authority in law. As a result private uniformed security provide neither the power of police, nor the rapport of peer security.

### **Police**

45. In many events, uniformed police perform functions such as traffic control, leaving internal event security to private personnel employed by the organisers.
46. Certain spectator groups may not, however, be amenable to either peer or private uniformed security, such as crowds who have historically seen violence as part of the event 'culture'. While various defusing techniques are available and should be employed, often nothing less than a contingent of uniformed police will dissuade a spectator group which enters with the expectation and intent of violence. This is in marked contrast to rock concert audiences who enter in a peaceful frame of mind, but may be induced to rowdiness by alcohol, shortcomings in the event, or other catalysts.

### **EMERGENCY RESPONSE PLANS**

47. The development of emergency response plans requires a comprehensive hazard and vulnerability analysis, and consultation between all parties that may be required to respond should an emergency situation develop during the event.
48. Some important matters to address are as follows:
- Are there additional security personnel, including police, on stand-by or available for call-up should the event require immediate increase in these services?
  - Have ambulance services and local hospitals been advised of the nature of the event, expected spectator profile, and possible medical problems?
  - Have fire and rescue services been notified as to the nature of the event, and what services might be required?
  - Have the necessary types of heavy equipment that could be required in a catastrophe (for example, grandstand collapse) been identified? Have plans been made to obtain that equipment at any time, including out of business hours?
  - Have counselling services been advised of the nature of the event, and what services might be required?
  - If the event is particularly dangerous, and deaths are a real possibility (for example, automobile or power boat races, airshows), has a framework been laid for any required coronial investigation?
  - In order that the exact location of an emergency can be identified quickly; the following questions need to be asked:
    - Will a grid-type venue plan, common to all services, including access roads, pathways, major landmarks, spectator, performer and vendor areas, be available?
    - Will vendor locations or booths be numbered and be included on the venue plan?

- Where helicopter flights are contemplated for spectators or media to view the event from the air; the following questions need to be asked:
  - Will flights be prohibited directly over the event and spectators, or confined to circular paths around the perimeter?
  - Will staging areas or helipads be confined to areas away from spectators?
  - Does the proposed staging area or helipad comply with Air Service Australia requirements governing such usage?
  - Will the helicopters be available for medical evacuation should a major incident occur?

### **Event Cancellation or Postponement**

49. From time to time, events may need to be cancelled, postponed or interrupted. This action has the potential to create dangerous situations, especially when a crowd has already gathered. Plans should be in place to appropriately manage such a situation and should address the possible readmission of patrons to the venue.

### **Further Information**

50. For further information on emergency response plans, please refer to Chapter 2.

### **SPECIAL EVENTS**

51. Some events, for example motor racing, may have specific health and safety requirements stipulated by international governing body regulations which must be addressed. These can include the qualifications of personnel, the numbers required to officiate at the event, or physical safety measures. It is therefore necessary for discussions to take place as early as possible in the planning phase to ensure the requirements can be met.
52. Events occurring in remote areas, such as the Outback Opera, demand additional planning as the resources normally available in those areas are well below those that will be required for the event. Special considerations include temporary accommodation for personnel, different clothing requirements, special communication facilities (for example, satellite), support resources (for example, Royal Flying Doctor Service aircraft and rescue helicopters if casualties require special evacuation) and additional costs likely to be incurred due to the remote location.
53. Events involving animals, or at which animals are permitted, have their own special requirements. There have been numerous incidents where a frightened animal has broken loose and created havoc and injuries. Whilst owners and handlers say they are able to keep their animals under control, arrangements should be in place to respond to any loss of control.
54. Multi-cultural events may also have special requirements, especially in respect to communication. To overcome communication difficulties, internationally recognised symbols rather than numerous language signs should be used, and

interpreters for service providers, spectators and emergency personnel, should be provided.

55. Please see Chapter 8 for further information regarding special events.

## **DEFENCE ASSISTANCE**

56. While it is unlikely that the Australian Defence Force (ADF) would be involved in normal event planning and provision of service, it should be understood that, particularly at very large events, ADF assistance could be provided to the civilian services if a major incident/disaster were to occur.
57. Of course, where the Defence Force is the promoter of the event, such as at an airshow, their planning should be in consultation with the civilian services. A great deal of the content has been covered elsewhere in this Manual will need to be addressed, taking into account that the event is being staged on Commonwealth land.
58. Under Defence Assistance to the Civil Community (DACC) policy, the ADF may provide assistance to the emergency services if a major emergency/disaster were to occur at mass gatherings. Emergency assistance may be provided if immediate action is necessary to save human life, to alleviate suffering, to prevent extensive loss of animal life, or to prevent widespread loss of or damage to property.
59. Although ADF resources are intended for Defence purposes only, on rare occasions ADF assistance may also be available for the planning and conduct of public events. Requests for such non-emergency DACC will be considered if it can be demonstrated that no suitable alternative source of assistance is available and/or worthwhile training or public relations benefits will accrue to Defence as a result of the provision of assistance. Non-emergency ADF assistance may range from the provision of tentage, accommodation stores, kitchen stores, lighting, generators, static displays, through to advanced assistance including RAAF aerial displays. ADF assistance may also extend to provision of health support. Defence may require full cost recovery if such assistance is provided.
60. For further information on ADF assistance, contact the Defence offices in each State or Territory.



# CHAPTER 2

## SAFETY ISSUES

### INTRODUCTION

1. Safety issues are an integral component of staging mass gathering events. This section is concerned with the key safety considerations.

### EMERGENCY RESPONSE PLAN

2. All public events should have a formal, written emergency response plan which should be developed in consultation with the appropriate authorities. The plan should:
  - detail arrangements for on-site emergencies not requiring outside help;
  - specify arrangements to request further police and other emergency services assistance;
  - specify arrangements to hand over control to police and emergency services as required;
  - identify personnel who can authorise evacuation;
  - identify how the event will be interrupted;
  - provide a grid plan of the venue and all services;
  - identify access and evacuation routes;
  - identify evacuation areas for performers, employees and the audience;
  - establish an incident control centre, which should have back up power and lighting;
  - provide details of coded messages to alert and stand down emergency service and security personnel;
  - identify the role event staff will take in supporting civilian services;
  - identify meeting points for emergency services;
  - identify triage and ambulance loading areas;
  - include details of hospitals prepared for a major incident
  - identify access and egress routes and the security of these routes; and
  - provide details of a temporary mortuary facility.

**Note:** In any major incident, for the purposes of the law, the venue is considered a crime scene and thus under total control of the police.

3. Emergency services and other public authorities that are required by law to maintain their own coordinated plans for any contingency should contribute to the development of plans and therefore, be informed of any implications for their agency.
4. Emergency services should develop a Management Plan/Operation Order for each major public event or adapt existing plans/orders for more routine events. Management Plans/Operation Orders are usually planned and drafted by

supervisory personnel, or a group of supervisory personnel, and submitted to the appropriate senior officer to whom authority has been delegated for approval and signature. The Plan/Order should:

- be based on a risk management process which provides a means of anticipating and managing safety risks associated with the event;
- detail the overall objective, roles, responsibilities/tasks and procedures for managing emergencies at the event;
- convey promoters' and emergency services commanders' intentions in relation to the event;
- enable subordinate personnel to identify the overall objective and evaluate the contribution of their own particular tasks;
- be clear and concise, and free from ambiguity;
- follow a consistent format;
- be set out in a logical sequence;
- cover elements including:
  - situation;
  - mission;
  - execution;
  - administration and logistics; and
  - communications;
- be numbered consecutively with the progressive number of the Plan/Order and the year of issue identifying:
  - the authority which issued the Plan/Order;
  - the date of issue;
  - the distribution list; and
- be issued in sufficient time to allow subordinate personnel to frame and issue their own plans/orders, and carry out the action required of them.

## **STAGES, PLATFORMS, AND OTHER PERFORMANCE FACILITIES**

5. One of the factors determining stage configuration will be the expected behaviour of the crowd. While classical music and ballet performances usually attract a mature and reserved audience, teenage and sub-teen fans at rock concerts have been known to storm the stage in order to touch their idols. Such incidents, apart from being disruptive, have caused injuries. It is therefore necessary for event planners to obtain a 'feel' for the audience that a particular performance will attract.
6. There are two principal ways in which this intelligence about the crowd can be gathered. These are:
  - by a review of press reports from, and contact with officials at, previous performances; and
  - with respect to adolescent entertainment (for example, rock concerts) by speaking with spectators. (In the past, they have provided valuable insights into what behaviour authorities might expect from audiences for different entertainers).

7. Stages are usually elevated above the floor or ground, to provide a better view of the performance, especially for spectators farther back. This, in itself, impedes those who would rush the stage in an attempt to touch a performer. However, a stage or a platform alone is usually insufficient to deter determined and agile spectators, and an additional physical deterrent is needed.
8. In addition, this increased height can create an area free of spectators at the base of the stage. The audience will position themselves back from the stage, as anyone too close will not be able to see all the performers as their line of sight will be impeded.
9. At some venues First Aid personnel are located under the stage to accept injuries occasioned at the front of the spectator area.

### **Indoor Events**

10. During indoor concerts, an effective practice is to erect a 'V' shaped barrier in front of the stage to deflect patrons to the outside of the stage should any surge come from behind. It also provides an additional barrier to prevent spectators from reaching the stage. Security staff can be positioned in this spectator-free zone, or should be able to gain access to it quickly either end if necessary.
11. Barrier posts must be securely anchored to the floor, not merely mounted to free-standing bases. They should also have some padded protection. Such a fence construction usually provides a certain amount of 'give' upon impact, reducing the potential for crush injuries as occasioned in the 1989 Sheffield (England) stadium tragedy.

### **Outdoor Events**

12. A fence similar to that described for indoor concerts can be utilised in an outdoor setting. However, board fences are often erected instead. Board fences have the added benefit of providing a walk space on the spectator side of the fence as well as behind. As most outdoor concerts do not have seating, spectators in the front rows seated on the ground have to take a position several metres back from the fence, to allow for a sight-line over the top of the fence to the stage. This area permits emergency access to the front rows of spectators.
13. Any stage protection barrier must be capable of a certain amount of flex in order to prevent the crushing of spectators in the front by a crowd surge from behind. At the same time it must be sufficiently solid to prevent collapse and the associated injuries. Fences installed often fail to address this two-fold requirement.

### **Break-Away Stage Skirts**

14. The front skirt around the base of a stage can be constructed so as to break-away under the pressure of a crowd surge, thus allowing spectators to be pushed under the stage rather than being crushed against its base. It is important to note



that this idea is not practical where there is less than two metres clearance beneath the stage, due to the potential for head injuries should a spectator collide with the stage.

15. It should be stressed that use of a break-away stage skirt does not remove the requirement for a barrier in front of the stage, and should be seen only as a back-up should the barriers fail.

## **TEMPORARY STRUCTURES**

16. Due to their transitory nature, many events require easily-constructed temporary structures. This includes the stage platform itself, as well as towers to house speakers and floodlights, temporary seating (i.e. bleachers), dance platforms, roofs, towers and masts, viewing platforms, marquees and large tents, and artistic or appearance items such as archways, overhead signage and even sideshows.
17. It is essential that all such temporary structures be designed and erected with a margin for safety and a view to potential hazards. This should be done under the supervision of a local government inspector, and must conform to local government building and/or engineering specifications.
18. Temporary structures are often hurriedly erected as access to the venue may only be permitted a short time before opening, and they are usually designed for rapid removal at the conclusion of the event. In addition, these temporary structures are frequently neither designed nor erected to withstand other than intended use, therefore little or no safety margin is incorporated. High winds or spectators climbing for a better vantage point can overstress the structure. A number of accidents have occurred in the past when such structures have been poorly designed or constructed.
20. Temporary structures should also be inspected periodically during events of longer duration. Any that may be used for other than their intended purpose should be signposted and/or secured to prevent inappropriate use or access.

## **Load Capacity**

20. There is a limit to the load capacity of any structure, and precautions should be in place to prevent overloading. Any viewing platform or vantage point, such as a building verandah or balcony, can be the source of a major incident if spectator numbers are not properly controlled.
21. The bases of temporary structures must be protected from damage by vehicular traffic or have buffer zones designated around them.

## **SEATING ANCHORAGE**

21. Seating in a community centre, arena, or similar location often combines the standard fixed perimeter seating, with additional foldable or stackable seating on the central floor.

## **Temporary Seating**

23. Temporary seats are often not secured to the floor or to one another. While this may not present any problems with sedate audiences, more enthusiastic spectators may pose the following difficulties:
- Persons standing on the seats for a better view are prone to injury if balance is lost or they are jostled. In such instances, other spectators can be affected, sometimes caused by a 'domino effect' in closely spaced chairs. There is potential for a significant number of injuries; and
  - If an audience becomes hostile, portable chairs can be used as dangerous missiles. At a concert in August 1980, 18 people were injured, including five police officers, when fans, angered at a performer's last minute cancellation, turned aggressive.
24. Portable, folding, or stacking chairs should be secured to the floor. Where this is not possible, attachment of the legs of each row of chairs to two long planks, one running under the front legs, and one running under the back, is an alternative solution.

## **GAS CYLINDER ANCHORAGE**

25. At many public events, portable pressurised gas cylinders are used to inflate children's balloons, carbonate beverages, provide cooking fuel, etc. Frequently, such cylinders are not secured, or are merely fastened to a two-wheeled hand trolley used to move them, which itself is not independently secured.
26. If such cylinders fall over and the cylinder neck or valve is cracked, the uncontrolled release of the stored pressurised gas can turn the cylinder into a deadly projectile. For this reason, all portable gas cylinders must be secured both top and bottom, by ropes or chains to a structural post, wall, or similar anchor point.

## **LIGHTING AND POWER REQUIREMENTS**

27. Even in venues darkened for the performance, lighting should always be adequate to identify exits as well as corridors and aisles leading to them.
28. Auxiliary battery power or generators should be installed to provide light in a power outage and to power the public address system. The latter may permit directions to be given to spectators in a power failure, thereby alleviating panic.
29. As many concerts are performed with only stage lighting, access to the main lighting or house lights is essential in case of an emergency. The location of the controls for these lights, and the operation of the controls, must be known to those on-site responsible for emergencies.

## **FIRE SAFETY**

30. All states and territories have legislation governing fire safety. The local fire authority should monitor fire prevention and preparedness measures to ensure

relevant standards are met. Organisers and health personnel should consider potential fire hazards in the planning process and discuss any concerns they may have with the fire authority.

## **EMERGENCY TOOLS**

31. There have been incidents that, in hindsight, could have been reduced in severity if only basic forcible entry tools had been available. It is strongly recommended that, at strategic locations in the venue, forcible entry kits are available for the use of emergency personnel. These kits should contain a:

- fire axe with prong;
- pry or crow bar; and
- pair of heavy duty bolt cutters.

## **COMMUNICATION SYSTEMS**

32. A means of communicating with the crowd is essential at all events. Ideally, multiple systems should be established to enable messages to be directed at different sections of the crowd including crowds massed outside the venue.

33. While the sound system used by the performers may appear to serve the internal requirement, there have been occasions when those responsible for it have refused to allow its use except during the change of performers. This has resulted in the delay of public announcements such as requests for next of kin of injured spectators.

34. Appropriate arrangements for communications in an emergency should be established before the event. If a separate sound system is to be utilised, some means of muting or silencing the stage sound system is required.

35. As public announcements are an important element of the safety plan for an event, consideration should be given to the style and content of announcements:

- What volume is required for announcements to be heard over spectator noise?
- Will announcements be easily understood by the audience?
- Are multiple language announcements required?
- What wording will lend credibility to the instructions?

36. If public address systems cannot be put in place outside the venue, the public address systems that form part of the electronic siren in most emergency vehicles can be used.

37. Another option available for organisers is the use of closed circuit television to provide visual information to the public.

## **Two-Way Communication**

38. While it goes without saying that the various emergency services (police, health, etc.) must be able to communicate with their own staff, experience has shown that different services must be able to:
- communicate with each other;
  - communicate between staff outside and inside the venue to get a proper overview of the total situation; and
  - communicate with senior event organisers, including security who may be the first to identify an incipient problem.
39. A central communications area (room, trailer, etc.) with a representative from each major agency may facilitate the provision of vital information by centralised monitoring of relevant radio communications.
40. The communication system should be multi-modal and not rely on one single system. It should also have its own backup power supply.

## **OCCUPATIONAL HEALTH AND SAFETY**

41. The promoter and authorities should be familiar with their respective State or Territory occupational health and safety legislation, as there is an obligation to provide for the safety of the audience, and appropriate care, safety and training of all personnel working at the event.
42. At events where noise levels are high, such as rock concerts, air shows and motor racing, employees who will be exposed to high noise levels for prolonged periods must be provided with adequate ear protection. The audience should also be warned of the dangers posed and advised of measures to protect their hearing.
43. Noise pollution from events probably cause the majority of complaints to authorities from the surrounding community, and some means of monitoring and reducing noise levels should, if possible, be implemented.

## **EXAMPLES**

44. The following incidents from around the world exemplify some of the concerns expressed above:
- In 1960, in Indianapolis, two people were killed and 60 injured when the supporting guy wires came loose from their anchorage causing a grand stand to topple over.
  - Also in the 1960s, a high-wire performer was severely injured when the guy wires supporting the towers came loose, causing the structure to collapse.
  - At an exhibition, a young girl was killed when an overhead decorative archway fell on her. The archway was blown over when a sudden and severe wind came up.
  - At the same venue that year a skating competitor suffered head injuries and was rendered unconscious when a scenic archway fell and struck her.

- In 1996, in Cleve, South Australia, the wooden seating holding 200 people at a circus collapsed injuring 48, including five seriously.
- At the 1998 Australian Formula One Grand Prix, in Melbourne, a giant screen collapsed narrowly missing two workmen.

## **CHAPTER 3**

### **ADDITIONAL CONSIDERATIONS**

#### **INTRODUCTION**

1. There are other aspects of public event planning that may have health and safety implications.

#### **INDUSTRIAL ISSUES**

2. Industrial issues can cause major problems for the successful conduct of an event. In planning for an event, consideration needs to be given as to possible impact of any industrial actions on the ability of a Service to meet their obligations in providing for the event, or the effects of an external industrial groups actions on what is planned.
3. Any threatened industrial unrest or suspected actions should be addressed by the organisation prior to the event, or plans put in place to appropriately handle any such situation, should it arise during the event, so that no one is placed at risk.
4. Any possible actions that could be taken by external industrial bodies should be addressed during the hazard analysis for the event. This should include the possibility of the need to cancel an event that has the potential to create an angry and aggressive crowd.

#### **PROTESTORS**

5. It should be anticipated that some events may attract protestors both prior to and during an event. While the protestors actions are generally not the concern of the health personnel, it is possible that the protest can result in injuries to both the protestors and the public. It is therefore preferable that prior warning is given to the health care providers if any protests are expected so that suitable preparation can be made.

#### **INFORMATION CENTRE**

6. A well-identified, appropriately located, well-publicised information centre on-site, staffed with knowledgeable staff, can reduce pressures on security, health, and other event staff, by providing a full range of information services to patrons. Reduction of uncertainty in spectators reduces the tension that can lead to behavioural problems.

#### **MAINTENANCE STAFF**

7. The immediate availability, preferably on-site, of maintenance staff, can reduce the possibility of a problem escalating to a level that may effect public health or safety.

## CHAPTER 4

# SPECTATOR MANAGEMENT AND CROWD CONTROL

### INTRODUCTION

1. The aim of spectator management and crowd control is to maintain order, prevent deviation from desired behaviour, and reestablish order should it break down, thereby ensuring maximal enjoyment and value for the assembled gathering. In the first instance this is the responsibility of event organisers, however this function will pass to local authorities, such as police, fire and ambulance, when the situation is beyond the resources and capability of the organisers.
2. Spectator management refers to planning and preparation issues such as ticket sales and collection, ushering, seating, parking, public announcements, toilets, washrooms, etc.
3. Crowd control refers to mechanisms used to reinstate order, such as limited access control, admission control, and arrests.
4. A crowd is defined as any number of people coming together in any place for any reason. Crowds occur in shopping centres, railway stations and stadia on a daily basis, and occasionally in places not designed specifically for large numbers of people, for example green field sites or the main street where crowds in excess of one million people may gather for celebrations.
5. In the planning process it is important to have an understanding of both individual and crowd dynamics and how these factors interrelate. The following is in no way the complete detail required, rather it is a Manual to issues most frequently encountered. The issues need expansion for each particular crowd and venue. The additional information can be sought from other literature, press reports, the promoter, private security organisations, police, fire, and ambulance authorities, and, for visiting dignitaries, from personal security services. All this information will assist in predicting potential problems that can then be addressed in the planning process.

### GENERAL ISSUES FOR CONSIDERATION

6. Key crowd issues to be addressed are as follows:
  - **Size** – Maximum numbers permitted are often established by regulation for safety reasons.
  - **Demographics** – Composition of the audience, including age and gender mix. If it is identified in advance that a high proportion of the audience will be young children, additional facilities such as child minding, feeding rooms and prams can be considered. For medical staff, audiences of young



children or elderly people tend to require additional medical facilities and children are more susceptible to crush injury.

- **Types** (see Annex C)
- **Assessment** (see Annex D)
- **Catalysts** (see Annex E)
- **Behaviour** (see Annex F,G and H)
- **Densities** (see Annex I)
- **Metering** — Control procedures used to prevent critical crowd densities from developing in specific areas. Especially useful in managing potential "bottlenecks" (see Annex J).
- **Throughput Capacities** (see Annex J)
- **Outdoor Concerts** — additional considerations:
  - Control and distribution of spectators in the field;
  - Suggested minimum space allocation of 0.46 square metres per person on grounds with no seats; and
  - Some form of sectoring and barrier management by security is important.

## ENTRANCES AND EXITS

7. Important considerations for the entry and exit of spectators are as follows:

- **Entrances**—These provide:
  - for supervision, marshalling and directing crowds;
  - access for emergency services; and
  - egress and evacuation routes.
- **Entrances**—These should:
  - be clearly sign posted;
  - be in working order;
  - have access for wheelchairs; and
  - have separation of pedestrian and vehicular traffic.
- **Entrance Management**—This should:
  - allow flexible opening and closing times, however advertised times are preferred;
  - stagger entry times by providing supporting activities;
  - keep entrances clear of all other activities;
  - keep queues away from entrances;
  - ensure there are sufficient numbers of suitable barriers, fences, gates and turnstiles;
  - locate ticket sales and pick-up points in line with, but separate from entrances;
  - arrange to have a public address system or alternative system to provide information to the crowd;
  - provide sufficient staff that are appropriately trained.
  - ensure that control points for searches to detect prohibited items, such as alcohol, social drugs, glass, metal containers and weapons, are in place and do not affect movement;
  - provide a secure area for the storage of confiscated goods;
  - provide toilets, if queues are expected to be long; and

- apply metering techniques as appropriate.
- **Exit Management** —This should:
  - ensure fire/exit doors are not locked. If there are concerns about illegal entry then doors could be fitted with alarms;
  - ensure exit doors open in the direction of escape and are confirmed operational;
  - check placement, function and signposting of exits;
  - ensure that doors that do not lead to an exit are so marked to prevent 'dead end' entrapment and the potential for panic;
  - ensure all exit corridors are free of all impediments to crowd movement;
  - ensure turnstiles are freewheeling or can operate in reverse; and
  - ensure exit corridors are not crossed by cables which can create trip hazards. (If this is unavoidable, the cord should be marked and insulated to prevent damage and potential electrical risks).
- **Escalator Management** —This should provide for:
  - staff control at top and bottom, including an emergency stop button; and
  - metering of flow at both ends.
- **Stairway/Corridor Management** —This should provide for:
  - control of both ends if crowd is large; and
  - metering may again be required.

## TICKETING

8. Ticketing can be seen as the first measure in achieving crowd control. The following issues need to be considered:
  - Is advanced ticketing possible? Advanced ticketing is preferred as it allows organisers to anticipate audience numbers and plan accordingly, and enables information about services and their location to be passed on to ticket-holders before the event, for example, first aid, water sources, toilets and personal needs.
  - Are there multiple entrances to the venue? Directing spectators to arrive via specific entrances can reduce congestion at entrances.
  - Is it feasible to stagger crowd arrival by specifying entry times? Again, this allows for reduced congestion at entrances.

## BARRIER TYPES

9. Effective use of barriers can avoid many problems, including congestion in thoroughfares. Issues to be considered in the planning phase include the following:
  - What types of barriers are required? Is a solid physical barrier required, or would a psychological barrier such as barrier tape suffice? The use of psychological barriers is only suitable for orderly crowds. Any physical barrier must be able to withstand crowd surges.
  - What will be the response if the barrier is breached?

- Can barriers be used to section the crowd and create passages for emergency personnel to evacuate ill or injured spectators?
- Will there be barriers to create a 'pit' between crowd and stage which can be used to facilitate the evacuation of injured spectators?

## **SEATING**

10. Ideally, all seating should be reserved, however this may be difficult at outdoor events.
11. If the crowd is predominantly less than around 16 years of age, seating should be provided as a form of control of surges and crushing at the front of the stage. A security presence to ensure no standing on seats is another recommendation. Seating should be adequately secured to prevent movement.

## **RESTRICTED VIEWING LOCATIONS**

12. Clear lines of vision for spectators are important to reduce the likelihood of crowds moving to get a better view of the stage. Also, a wide angle of view helps to reduce crowd densities in front of the stage.

## **VIDEO SCREENS**

13. Video or projection screens aid in management as they can provide:
  - entertainment before and between acts;
  - information regarding facilities and important messages; and
  - close-up vision of on-stage action for spectators as a means of reducing crowd movement toward the stage.

## **ALCOHOL, DRUGS, AND WEAPONS**

14. Alcohol and drugs can be a catalyst for, and can exacerbate, unruly behaviour and hooliganism in a crowd.
15. There are a number of strategies listed below that have been implemented with varying degrees of success in reducing the problem:
  - The prohibition of the sale of alcoholic beverages at events where unruly audiences are expected, or where a significant number of the patrons will be under the legal drinking age.
  - If alcohol is to be sold, then a low alcohol content beverage can be made available. Alcohol sale times can be controlled and beverages dispensed only in disposable cups.
  - If lawful within the State, advance tickets and display advertising should contain the message that alcohol, drugs, weapons and fireworks will not be permitted into the event, and that purchase of tickets is deemed as consent to a search of persons and property for prohibited material prior to admission.

- Searches of personal belongings (jackets, purses, bags, etc.) and confiscation of any alcohol, drugs and weapons, further reduces related problems.
  - Signs in event parking areas and at admission gates should also display the same warning as above, to discourage patrons from bringing alcohol or drugs into the event. There are, however, possible negative consequences to such signage. Some patrons may attempt to consume a quantity of alcohol intended for the entire event prior to admission, ultimately causing problems for the event medical staff. Alternatively, it could also have the effect of spectators leaving the alcohol in their car, only to be consumed in the parking lot at the end of the event prior to departure. The most desirable approach is to discourage patrons from bringing alcohol to the event in the first place.
16. If it has been decided to confiscate prohibited goods, arrangements for the storage and disposal of these goods are required. Different approaches to seized alcohol have been used. In some cases the alcohol has been opened by security personnel and dumped into large drums in front of the patron. This has created a hostile audience and conflict with security and event management before the event has commenced.
17. Two strategies that can be applied to all prohibited material (not just alcohol) are as follows:
- Giving the spectator the option of returning it to his/her car, with a subsequent loss of place in line.
  - Tagging it with “peel and stick” numbered stickers for return after the event. Such an approach can also be applied to any potential weapons found, if confiscation, for whatever reason, is deemed inappropriate.



# CHAPTER 5

## PUBLIC HEALTH

### INTRODUCTION

1. Public health interventions are designed to prevent or minimise injury or ill health. Mass gatherings present particular challenges for prevention and harm minimisation, especially when the event is held at a temporary venue. Familiarity of the stakeholders with each other's roles and responsibilities, and knowledge of the potential and actual public health issues, present a common challenge.
2. This chapter provides guidance on the main public health issues likely to arise in the organisation of a mass gathering event. It should be understood that if state or local legislation is in place, that legislation takes precedence over advice contained in this Manual.

### PRE-EVENT SURVEY

3. A pre-event public health survey is recommended for any venue intended for a mass spectator event.
4. A pre-event survey is found in Annexes K and L. This survey should be used to identify the risks resulting from the following:
  - **Environmental Hazards**—These include:
    - rodents;
    - insects - ants, caterpillars, wasps, bees, mosquitoes;
    - snakes;
    - spiders;
    - dogs;
    - noxious weeds;
    - marshes;
    - water courses, depth of water, water currents, water temperature, water clarity;
    - pollution, dust, noise;
    - weather, extremes of temperature, wind;
    - water quality (bacteriological), blue green algae;
    - darkness;
    - chemicals; and
    - neighbouring land use.
  - **Physical and Technological Hazards**—These include:
    - quarries, pits;
    - scrap piles;
    - swamps;
    - cliffs and steep inclines;
    - old underground tanks;

- ex-council tips;
- alcohol, drugs, potential weapons, broken glass;
- use of lasers; and
- UV radiation.
- **Sources, Locations, Backup and Maintenance**—These must be considered regarding:
  - potable water;
  - waste water disposal;
  - toilet facilities;
  - collection, storage, and disposal of garbage, particularly scrap foodstuffs; and
  - maintenance and servicing of essential services.
- **Accommodation**—If overnight camping is to be permitted, proposed camping areas should be surveyed to ascertain their safety with particular attention to:
  - fire risks;
  - low lying areas;
  - areas adjacent to creeks or rivers;
  - areas near power lines; and
  - trees that may drop branches, especially during a severe storm.
- **Vehicle Access and Egress Routes**—These should be considered for:
  - portable toilet pump-out;
  - garbage removal;
  - water tankers;
  - car parking;
  - ambulances; and
  - other essential service vehicles.
- **Pedestrian Access** —This should:
  - preferably be separate to that of vehicles; and
  - allow for the needs of the physically impaired.
- **Infectious Diseases and Other Health Issues**

5. Following the process of hazard identification and risk assessment, the risks should be prioritised and strategies developed to deal with each hazard.

## MONITORING OF HEALTH RISKS

6. First aid posts and security personnel can provide information to help assess health and safety risks as follows.

- First aid posts can provide data by collecting gastrointestinal illness surveillance questionnaires (see Annex M) or maintaining records of injuries, incidents involving water courses, alcohol and drug issues.
- Security agencies can provide information on safety hazards and alcohol and drug issues.

## FOOD SAFETY

7. Food safety is a vital aspect of public health planning for public events. Unless proper sanitary measures are applied to food storage, preparation and distribution at mass gatherings, food may become contaminated and present a danger to public health. Special one-off outdoor events in warm weather pose additional risks as they tend to have less than ideal circumstances for food handling, transport and storage.
8. To ensure adequate standards are met, an environmental health officer should initially assess food service proposals, including the proper authorisation of vendors, as part of the pre-event planning outlined in Chapter 1. Any proposal assessment should be based on current food hygiene legislation and food safety codes. This assessment should be followed up with a pre-event audit as well as periodical monitoring of food safety throughout the event.
9. This assessment should form part of an overall food safety plan for the event including:
  - quantities and types of food;
  - lines of supply;
  - premises;
  - preparation techniques;
  - means of distribution;
  - licensing/permit process and authorisation of vendors; and
  - food safety documentation, including the Hazard Analysis Critical Control Point (HACCP) approach and surveillance.
10. Appropriate licensing and registration requirements of the responsible health authority must be met, including an 'off-premises' food catering licence as appropriate. During the event, on-site environmental health officers must have the authority to close down any vendor who is contravening food hygiene legislation and public health requirements. In some cases, this may require a particular local council law to be passed.
11. A sample Food Vendor Information Sheet appears at Annex N.

## **FOOD PREMISES**

12. Fit out and construction of the premises must be in accordance with State regulation and codes of practice. The premises or area to be used for food storage, preparation and service must be easily cleaned and not allow the harbouring of rodents and insects nor the build up of dirt and food particles.

## **Equipment**

13. Equipment must be in a safe working order and easily cleaned.

## **Safety**



14. The safety of both staff and the public is an important consideration, and occupational health and safety standards must be met. Some of the hazards to be avoided include loose power leads, trip hazards, inadequate refuse disposal, inappropriate positioning of equipment (especially hot equipment), poor ventilation and extreme temperature in the work environment, badly stacked supplies and unguarded equipment .

### **Refuse Disposal**

15. A regular disposal system should be put in place. Putrescible refuse, in particular, can cause problems from odour, insects, rodents or animals. Adequate disposal facilities must be easily accessible to food handlers as well as removal contractors.
16. A separate refuse collection should be organised for food premises and should be continually monitored to ensure the frequency of collection is appropriate.
17. Where possible the separation of refuse into dry, wet and hazardous disposal units should be encouraged. (For more information on refuse disposal refer to Waste Management below).

### **Water Supply**

18. Provision of a supply of potable water for sinks and hand basins is essential. Those operators using water stored in their own tanks must have access to facilities to refill diminished supplies. It is important to ensure this access is organised before the event. (For more specific details on water supply refer to Water).

### **Hand Washing**

19. Hand washing facilities for the exclusive use of food handlers must be provided. Potable water must be used for hand washing, the water must be running and, where possible, hot water should be available. Soap and disposable handtowels should be provided in the hand washing area.

### **Sinks**

20. Potable water must be supplied to all sink areas. Hot water should be used where possible. An appropriate detergent and sanitiser should be used to adequately clean all sinks and hand basins.

### **Food Supplies**

21. It is important that foods used are only sourced from registered outlets and are not prepared in domestic kitchens. Food proprietors must ensure that food supplies have been prepared and transported in accordance with relevant standards.

## Transporting Food

22. The length of time food is transported should be kept to a minimum. Temperature requirements should be maintained and the food should be protected from contamination at all times.
23. Food transport vehicles should be clearly identified and subject to surveillance and monitoring.

## Food—Handling

24. Vital aspects are as follows:

- **Cross-Contamination**—The following points apply:
  - Every effort should be made to minimise the risk of cross contamination during the food handling process. Food utensils and surfaces used for the preparation of raw and ready to eat food should be clearly distinguished. In cramped circumstances this becomes more difficult. Adequate cleaning and sanitising between uses play an important role.
  - Gloves should be worn and changed frequently. There is a temptation to continue to wear the same gloves even though the work being undertaken has changed. Frequent hand washing should be encouraged.
  - Appropriate food storage is critical to ensure there is no contamination between raw and cooked or ready to eat foods. Raw foods should be stored separately if possible, or at a minimum, stored below cooked or ready to eat foods.
  - Equipment must be adequately cleaned and sanitised between each separate process. This is particularly critical where equipment is used for preparing different food types.
- **Thawing, Cooking, Heating and Cooling**—The goal in temperature control is to minimise the time potentially hazardous foods are in the danger zone of 5°C to 60°C. Key points to remember are as follows:
  - Thaw food under refrigeration or cold running water.;
  - Cook food thoroughly to achieve a core temperature of 70°C.
  - Reheating of food should be minimised. Where reheating is required the food should be heated thoroughly and stored above 60°C.
  - Cooling of food should be carried out quickly under refrigeration.
  - Food should be portioned into trays not more than 100 mm deep.
- **Cleaning and Sanitising**—The following points apply:
  - Regardless of the type of facility in which the food is prepared, all food contact surfaces must be regularly cleaned and sanitised using an appropriate sanitiser (sodium hypochlorite (100 - 200 ppm) is considered to be appropriate).
  - All other surfaces should be cleaned to minimise the risk of contamination to food products. Pest infestation and occupational hazards such as slippery floor surfaces should also be considered.

- Consider the provision of a designated washup area for food outlets to reduce sullage waste storage and pump out at each food outlet.
- **Chemical Storage**—Chemicals must be stored in separate areas to foods and all chemical storage containers must be clearly marked as to their contents. Food containers must never be used for the storage of chemicals.

## Food Storage

25. Essential matters to be addressed include:

- **Storage Facilities** —Facilities of adequate size and appropriate for the purpose must be provided.
- **Temperature Control**—The following points apply:
  - Refrigerated or heated storage areas require continuous power supply. Potentially hazardous food must be stored at temperatures below 5°C or above 60°C at all times.
  - Refrigeration can become a problem in particularly hot weather when refrigeration units struggle to cope. All proprietors should indicate alternative refrigeration suppliers or the organiser or authority could identify alternative suppliers in the public health emergency management plan in case of refrigeration failure.
- **Cross-Contamination**—The following problems must be overcome:
  - The less than ideal conditions that confront food handlers working in temporary facilities may lead to a compromise in food-handling.
  - Space is often a major problem. Ensure that, at a minimum, raw and cooked or ready-to-eat-foods are stored appropriately. Food handling staff must be aware of the requirements for strict hand washing and cleaning and sanitising of equipment between handling raw and ready to eat foods.
- **Dry Goods**—There should be sufficient storage conditions available to ensure adequate protection of food from the elements and pests.
- **Food Protection**—Exposed food available on display must be protected from insect pests, dust and human contact.

## Food Handling Staff Considerations

26. Important matters to be addressed include the following:

- **Training**—Proprietors should be encouraged to select staff with food handler training to work in temporary facilities.
- **Personal Hygiene** —Selection of staff should include issues such as high personal hygiene standards. Food proprietors should ensure a non-smoking policy is implemented in the workplace.
- **Communications**—Proprietors should be able to demonstrate that they have a good reporting and communication system so that issues can be identified and dealt with promptly.
- **Supervision**—Proprietors should be encouraged to provide appropriate supervision to ensure a good team approach to the provision of a safe food supply.

## Other Considerations

27. These include the following:

- Food handlers dress should be appropriate to the task they are performing, and include some form of hair covering.
- Infectious diseases:
  - Proprietors should be reminded that food handlers should not work whilst they are in an acute stage of any gastrointestinal illness or cold.
  - Food handlers who have open wounds should ensure all wounds are appropriately dressed with a waterproof dressing and the dressing should be changed regularly.
- Separate toilet facilities should be provided for food handlers.
- Facilities should be monitored for any signs of pest or rodent infestation.
- Food proprietors should be encouraged to keep a register of any complaints that they may receive.

28. A sample 'Checklist for Food Vendors' appears at Annex O.

## WATER

29. An adequate supply of safe drinking water must be available. One Manualline is 20 litres of potable water per person per day, of which 4 litres is the drinking water component. Event duration and location and the expected ambient temperature should be considered in deciding the quantity of drinking water required.
30. In areas where non-reticulated water is the only source then consideration should be given to the clarification and disinfection of the water supply to achieve greater than 1 ppm residual chlorine.
31. An appropriate means of access to drinking water for spectators must be considered in a field or outdoor venue or events such as 'raves' where the activity produces an extreme heat environment.
32. Water pressure must be adequate to provide for all uses and peak demands. Alternate water supplies should be available should existing supplies fail to meet demand or be rendered unsafe or unusable.

## TOILETS

33. Where existing toilet facilities are judged inadequate, additional portable units must be made available. Important matters to consider include:
- Toilet locations should be:
    - well-marked;
    - well-lit (including surrounding area) if night usage is expected;

- serviced (including pump-out of portables) on a 24-hour basis during the event (vehicle access is obviously necessary); and
  - located away from food storage and food service areas.
- Other considerations in the provision of toilets are:
    - provision for the safe disposal of needles, syringes and other sharps away from the reach of children; and
    - if appropriate, provision of condoms at some events.

34. In determining the number of toilets to be provided for particular events, the following criteria should be considered:

- The duration of the event.
- The type of crowd.
- Whether the event is pre-ticketed and numbers known or unticketed.
- Staggering finishing times where there are multi functions.
- The weather.
- Whether alcohol will be consumed.

35. Calculating the number of toilets required for an event is a matter for conjecture and there is no uniform Australian Standard. Where local laws or regulations do exist these must be applied. Better management of events can be achieved by providing additional facilities. Assume 50/50 male/female split unless otherwise advised. The following tables should only be taken as a Manual.

**Toilet facilities for events where alcohol is not available**

Patrons	Males			Females	
	WC	Urinals	Hand Basins	WC	Hand Basins
<500	1	2	2	6	2
<1000	2	4	4	9	4
<2000	4	8	6	12	6
<3000	6	15	10	18	10
<5000	8	25	17	30	17

### Toilet facilities for events where alcohol is available

Patrons	Males			Females	
	WC	Urinals	Hand Basins	WC	Hand Basins
<500	3	8	2	13	2
<1000	5	10	4	16	4
<2000	9	15	7	18	7
<3000	10	20	14	22	14
<5000	12	30	20	40	20

36. The above figures may be reduced for shorter duration events as follows:

Duration of event	Quantity required
8 hrs plus	100%
6-8 hrs	80%
4-6 hrs	75%
Less than 4 hrs	70%

### Toilets for the Disabled

37. At least one unisex toilet for the disabled is required.

### Food Vendors' Toilets

38. Separate toilet and hand washing facilities should be made available for food handlers.

### General Considerations

39. In an outdoor setting, it is a relatively simple matter to provide additional toilets by hiring temporary, portable toilets. This solution may not be suitable for indoor settings, for which provision of additional toilets may be more difficult. One possible solution is to convert some men's washrooms to women's for events where a predominantly female audience is anticipated or vice versa.

40. As a means to overcome long line-ups, particularly at female toilets, some organisers have provided additional, unisex toilets to be used by either males or females.

41. Maintenance and cleaning schedule for toilets and hand-basins should ensure:

- an adequate supply of toilet paper and soap;
- cleaning of toilets to a suitable timetable;
- provision for disposal and removal of sanitary napkins; and
- availability of plumber or appropriate maintenance person to repair or remove blockages.

42. Organisers should ensure that adequate cleaning supplies are available for cleaning staff.

## **WASTE MANAGEMENT**

43. Major considerations are as follows:

- **Food Waste**
  - Food waste should be deposited in covered containers placed strategically around the venue. Covers are essential, especially in outdoor settings or if high temperatures are expected.
  - Spectator density may prohibit access by garbage removal vehicles. To prevent containers from overflowing, containers should be emptied regularly, and waste moved to a temporary, properly prepared holding area, until bulk removal at designated times or after the event.
- **Empty Containers**
  - Arrangements should be made for the appropriate storage or disposal of empty containers, for example cardboard boxes.
- **Hazardous Wastes**
  - Special arrangements must be in place for the collection and disposal of various forms of hazardous waste, including waste from food preparation areas, 'sharps' and other hazardous materials.
- **Clinical Waste**
  - Ensure there is provision for the storage, collection and disposal of clinical waste generated from on-site medical and first aid facilities.
- **Sewage and Sullage**
  - Adequate facilities should be provided and maintained for the ongoing storage and disposal of sewage and sullage.
- **Recycling**
  - Where possible, specific containers for recyclable materials should be considered.

## **ANIMALS, RODENTS AND VEGETATION**

44. In outdoor settings, control of rodents, snakes, spiders, mosquitoes, and insects of significance to public health must be addressed. If particular hazardous species are known to inhabit the area, or if vectors of particular diseases are endemic in the area, the attending first aid and medical personnel should be alerted.
45. Medical and first aid personnel should also be alerted to the presence of potentially poisonous and noxious plants and trees.
46. A decision needs to be made about the control of domestic animals if they are to be permitted into the venue.
47. Consideration needs to be given to the potential effect of the event on nearby domestic or farm animals and native fauna.

## SWIMMING AND WATER AREAS

48. Purpose-built swimming areas must comply with State requirements for water quality and other requirements such as fencing. Other water courses in the vicinity of the venue which may be used for water recreation or washing should be assessed for suitability against the National Health and Medical Research Council's Australian Guidelines for Recreational Use of Water or the State standard where available. Where these water courses are considered unsuitable they should be fenced off and warning signs should be erected.
49. Water quality must be addressed in both designated swimming areas and water that could be utilised for swimming in hot weather. Experience has shown that where audiences attend an outdoor concert in hot weather, particularly in overnight situations without washing facilities, any nearby water area will be employed as a makeshift swimming/bathing/washing area.
50. Some form of trained supervision should be considered for:
- families with small children;
  - spectator groups for which alcohol consumption, with subsequent judgment impairment, is anticipated; and
  - water that has additional hazards such as steep, slippery sides, submerged snags or unusually variable depths.

## INFECTION CONTROL AND PERSONAL HYGIENE ISSUES

51. Infectious disease transmission through unsafe sexual practices or drug use may be a health risk at some events, particularly those that involve spectators camping at the venue overnight. As a means of reducing these risks, consideration should be given to provision or availability of condoms and a properly licensed needle exchange/disposal mechanism. While these are sensitive and controversial issues, they are nevertheless important public health concerns in contemporary society and must be addressed.
52. At events where the duration is overnight or longer, hygienic washing facilities should be provided. Suggested minimum requirements for facilities for camp grounds based on 2 - 3 nights camping are as follows:

Sex	WC	Urinal	Hand Basins	Shower
M	1 per 50	1 per 100	1 per 75	1 per 100
F	1 per 25	N/A	1 per 75	1 per 100

## TATTOOING AND BODY PIERCING

53. With a return in popularity of tattoos, body piercing and branding, mobile operators have begun to appear at certain types of public gatherings, such as carnivals, motorcycle races and auto swap meets. Where this is likely to occur, checks should be made as to the need for proper licensing or registration of such service providers and their compliance with any health legislation.



54. Due to the potential of cross-infection, particularly of blood-borne diseases, any such operations should be inspected to ensure (as a minimum):
- disposable, single-use items are utilised;
  - proper sterilisation equipment and techniques are employed; and
  - clinical sharps containers are utilised for used needle disposal, and these containers are located safely away from children.
55. No skin penetration procedures should be allowed to occur if the minimum infection control procedures are not followed.

## HEALTH PROMOTION

56. It is important to consider the opportunities to promote health messages at public events and to encourage event organisers and service providers, such as food vendors, to participate. Examples include:
- **Sunsmart**—Encourage provision and use of shade areas. Encourage the use of sunscreen creams, hats etc. and make them available for purchase by spectators.
  - **No Smoking**—Encourage the provision of non-smoking areas and a ban on sale of cigarettes at the event.
  - **Nutrition**—Encourage food proprietors to participate in the provision of nutritious foods. Encourage event organisers to select food vendors that provide nutritious food varieties.
  - **Safe Sex**—At certain events promotion of safe sex messages can be conveyed and provision of free condoms should be considered.
  - **Alcohol**—Consider the designation of alcohol-free areas and/or restrictions on the sale of alcohol. Glass-free policies should also be considered.
  - **Drugs**—Consider opportunities to spread harm minimisation messages.
  - **Hearing Protection**—Consider providing advice about hearing protection, and possibly free ear plugs, to spectators and participants. This is applicable to venues such as rock concerts and car races.

## MAINTAINING COMPLIANCE

57. To ensure compliance with public health requirements, a public health audit should be carried out just prior to the commencement of the event. Subsequent periodic surveillance should be undertaken at appropriate times during the event. These are particularly important for outdoor events in hot weather with transient food vendors who may not have sufficient sanitary or refrigeration mechanisms available.
58. It is preferable that environmental health officers should have access to resources to assist in overcoming any problem noted (for example, toilet servicing, unsafe areas, fencing repairs, water testing) rather than using their powers to stop the event or particular operation.

## **POST- EVENT SURVEY**

59. A post-event survey should be conducted to ensure a proper clean up has been undertaken, particularly from a public health perspective (for example, all scrap foodstuffs and discarded needles are properly disposed of). The venue should be returned to its pre-event condition.
60. When fireworks have been used, a diligent search should be carried out for any unexploded fireworks. They should be safely collected and removed before the public is allowed access to the area.
61. As an additional precaution, appropriate records should be retained of all service providers at the event so that they may be traced should some subsequent outbreak of a notifiable disease occur, or a claim be made for an injury or illness.
62. Health personnel should also be conscious of the need to introduce a monitoring/surveillance system should they become aware of any particular health problem arising from an event.
63. There should be a formal public health debrief following the event, and a public health representative should participate in the all agency debrief.

## **PUBLIC HEALTH CONTINGENCY ARRANGEMENTS**

64. The arrangements outlined in this chapter are designed to prevent or minimise the risk of an adverse event occurring. However, there is always a risk of unforeseen circumstances potentially or actually creating a public health risk. It is important that some basic thought is given to contingency arrangements and these should be documented in the public health emergency management plan.
65. The plan should include the following details as a minimum:
  - Contact details, including after hours details, for key event personnel (eg event organisers, environmental health officers, trades persons, emergency services including health services).
  - Contact details for additional staff.
  - 24 hour contact details of the food proprietors.
  - Arrangements for alternative suppliers of equipment in event of a failure or loss of water or power.
  - Arrangements for food handlers who become ill.
  - Alternative water suppliers.
  - Arrangements in case of product recall.
  - Procedures for the handling of complaints.
  - A debriefing process.



# CHAPTER 6

## MEDICAL CARE

### INTRODUCTION

1. Spectators and participants at mass gatherings may require medical care in the event of illness or injury. The incidence of illness will be greater than that expected to occur naturally in a population of comparable size.
2. The number of spectators who require, or avail themselves of, on-site medical care, and the types of problems they present, will vary significantly depending on the nature of the event. While incidents such as the Bradford Stadium fire or the Ramstein air show crash have caused significant loss of life, statistically, rock concerts have generated large numbers of casualties with less severe injuries and illness. It has been identified that between 0.5% to 1.5% of concert goers will require some form of medical assistance, regardless of the character, locale, physical layout, and size of the concert.
3. Alcohol and drug use is common at most festivals and is the primary diagnosis in greater than 10 per cent of the patients. Other common complaints include lacerations, fractures and sprains, burns, sunburn, heat stroke, seizures, asthma, and exposure.

### MEDICAL CARE PROVISION

4. Planning for the provision of medical care for both spectators and participants is essential, for both humanitarian and legal reasons. In addition, the provision of on-site first aid or medical care will significantly reduce the demand on the emergency departments at local hospitals in the area of the event.
5. Event organisers may choose to contract a health service provider which may not be the normal local service. Checks should be made to ensure that the service provider meets the local emergency standard. They must liaise with the local health and emergency services to plan their response to any emergency or significant medical problems requiring further assistance. Local health authorities will need to be notified of details of the event and provided with emergency plans for a major incident.

### Key Issues

6. Key issues to be addressed in medical care planning are as follows:
  - **Management and Planning** (see Annexes K and L for checklists):
    - Determine which other organisations will be involved. Who will be the lead agency?
    - Conduct planning meetings involving health personnel, emergency services and event organisers.

- Determine what is expected of each organisation involved in the provision of medical care.
- Determine likely levels of care that will be required.
- Determine the budget for the provision of medical care services.
- Establish liaison with other emergency services (police, ambulance, security etc.)
- Identify equipment required and potential suppliers. Will the equipment be purchased, hired, or on loan?
- Will volunteers be used? What accreditation will they require? What inducements will be offered?
- Ensure security of medical stations and safety of staff.
- **Planning Information**
  - Obtain background information to assist with planning from:
    - \* reports from previous events (medical and other specialist literature); and
    - \* lay literature (press).
  - consult the Ambulance Service and other health authorities at the beginning of the planning process.
- **Event Details**
  - Event duration.
  - Venue and its layout (see Chapter 5 Public Health, Pre-Event Survey).
  - Number and type of attendees including expected demographics of the crowd (eg. age and sex).
  - Any special requirements, for example, visits from heads of state, attendance by people with disabilities, requirements mandated by sports governing bodies.
  - Predictions of possible crowd misbehaviour ie likelihood of alcohol/drug problems (rock concert), violence (political protests, riots).
  - Ticketing arrangements.
  - Will the crowd be seated or not (the latter may produce more musculoskeletal problems).
  - Availability of food and beverages, especially access to water.
- **Venue Access**
  - It is important that medical teams can easily locate individuals in need of attention. The use of a common reference map or grid system should be agreed.
  - How will medical teams reach or rescue individuals in distress, for example in crowded areas or through fixed seating.
  - How will patients be transported on-site?
  - Will a dedicated access route, or emergency service lane, be provided to allow rapid access to and from the venue for ambulances and other emergency vehicles?
  - Will the event itself pose a barrier, for example, community runs or a parade?
  - Will there be a need for aeromedical services and, if so, what are the associated regulations regarding their operation?
- **Types of Problems**
  - Consult medical literature for information on risks and types of injury sustained at similar events in the past.

- Consider effects of weather conditions eg. hypothermia, heat stroke.
- Consider risks associated with venue, eg. water in the vicinity.
- **Numbers of Patients**
  - Consult medical literature for information on numbers of casualties from similar events in the past. See table below for expected percentage of patients against triage categories.
  - Consider variables that affect numbers, for example, alcohol consumption, psychosocial behaviour and type of event.

#### Expected percentages of patients in triage categories

Categories <sup>1</sup>	Description	Vital Signs	Mental State	Percentage <sup>2</sup> %
1	Critical	Unstable	Abnormal	0.02
2	Serious	Potentially Unstable	Potentially Abnormal	1.1
3	Moderate	Usually Stable	Normal	12
4	Minor	Stable	Normal	87

Notes: 1 Categories modified from disaster triage Guidelines.  
2 Percentages aggregated from events listed in the references.

- **Medical Requirements**
    - Prepare for the most critical injury/illness foreseeable (for example cardiac arrest).
    - Is there a need for a mobile team, which may require pre-packed medical kits?
    - Determine who will provide care for the audience, any VIPs and performers.
    - Define boundaries of care, eg. inside venue and parking areas.
  - **Level of Care**
    - Categorised as follows:
      - \* *Basic* first aid (see Annex P).
      - \* *Intermediate* first aid plus IV therapy and oxygen.
      - \* *Advanced* care and life support and early management of severe trauma.
      - \* *Site Hospital* with full monitoring and ventilation. A surgical facility may be required depending on the level/type of event.
    - Medical personnel with experience of similar events should be consulted to determine appropriate levels of care to be provided.
    - Consider the distance to, and accessibility of, nearest hospital and its capability.
7. Further guidance on the establishment of medical care facilities and their equipment requirements is available in the references and from local or regional disaster and health functional plans.

## MEDICAL AID POSTS

8. Important considerations in the establishment of medical aid posts are as follows:
- They should be within 5 minutes of all sections of crowd;
  - There should be a mode of transport to the aid post;
  - Medical aid posts should be clearly sign-posted from all directions;
  - They should be clearly identified;
  - They should be clearly marked on maps of layout;
  - The position should be known by security and other event personnel;
  - They should be stocked and staffed for the duration of the event and for spectator arrival and departure periods ;
  - Facilities should be provided for injured or sick patients to lie down;
  - Privacy in clinical areas must be ensured;
  - There should be some means of communication with the primary medical control point, venue control, and with mobile medical teams in the venue;
  - Posts should be located in as quiet a place as possible.

## SITE HOSPITAL

9. Depending on the nature of the event a site or field hospital may be required to provide care for the number of casualties expected. Contingency plans should also be made in case of a major incident, for which the resources of the field hospital may not be sufficient. Failure to plan for large numbers of, or severely injured, casualties can result in long delays in providing medical treatment. It is important to provide a communication link between the site hospital and the local hospitals.
10. Site hospitals will require:
- clean water;
  - electricity for medical appliances and adequate lighting in tent hospitals at night. This should, if possible, include a back-up power system;
  - washroom/rest facilities for the exclusive use of staff and patients;
  - meals for medical staff;
  - flooring. Tents for hospital usage must have flooring as part of the structure to contain the service and to prevent ingress of water and/or insects;
  - a landline telephone service for ordering of additional staff or supplies and for notifying hospitals of patient transfers. Note that cellular telephones should be seen as a back up device only;
  - reserved access roads for emergency vehicle usage; and
  - dedicated disposal containers for ablutions, hazardous wastes and sharps.

## **MEDICAL TEAMS**

11. When deploying medical teams the following should be considered:
- How many teams are needed? For example, is one ambulance per 10,000 people and 1-2 doctors/50,000 too much or not enough?
  - Who can see, treat and discharge patients?
  - Will there be peak periods or special circumstances requiring additional staff?
  - How will medical staff be fed, watered, rested and protected from the elements?
  - Work safety - occupational health and safety, protection from violence/crushes etc..
  - Medical teams should be provided with maps of the venue.
  - What arrangements are in place for movement of medical teams onto and off the site.
  - Medical team members need to be appropriately dressed for the conditions.
  - Medical team members' dress should make them easily identifiable.
  - Are interpreters required?
  - Medical teams should understand the command structure and their role within it, and the emergency activation system.

## **MOBILE TEAMS**

12. In tightly packed areas, particularly near the stage, First Aiders on foot may be the only viable approach. Experience has shown that uniformed First Aiders on foot circulating in dense spectator areas are quite effective, and will be readily summoned by patrons in an emergency, even if the person requiring care is a stranger to them. Even if a clearly marked field hospital is visible, spectators are often unwilling to make the sometimes long trek to request assistance (as they may lose their seating position), particularly for a fellow spectator whom they may not know or if they fail to appreciate the seriousness of the patient's condition.
13. Identification of mobile teams, where ambulance or clinical uniforms are unsuitable, can be successfully accomplished by special 'event uniforms'.

(NOTE: The Red Cross symbol is registered by the International Red Cross and its National Societies and should not be used.)

## **DOCUMENTATION**

14. Documentation should facilitate:
- post-event review of activities; and
  - tracking of biological, chemical and infectious disease exposures should they occur.
15. Medico-legal issues which must be addressed prior to the preparation of any documents are as follows:



- Who has access to records?
- Who keeps the data and for how long? and
- Who can give consent?

## **AMBULANCE VEHICLES**

16. While conventional ambulances are appropriate for patient transfers to off-site medical facilities over good roads, such vehicles may be unsuitable for off-road usage. Ad hoc roadways and cross-country terrain may require four-wheel drive vehicles, particularly if grounds are saturated by recent rainfall. As four-wheel-drive ambulances are not available in most areas, other four-wheel drive vehicles, equipped with appropriate medical equipment (including, but not limited to, resuscitation equipment, trauma kit, and spinal board) can serve as ambulances over the short distances between spectator areas and medical care facilities.
17. In denser spectator areas, any vehicle can have access problems. Consideration should be given to utilising golf carts, either designed or modified to accept stretcher cases from these areas.
18. For these reasons the ambulance network may have to consist of a mix of First Aiders on foot, golf-carts, four-wheel drive vehicles, and conventional ambulances, to best facilitate the patient transport requirement. A magnetic-based beacon, portable radio, and appropriate marking for these vehicles should be provided.
19. A communication network, to provide a coordinated response to requests for assistance, is essential. This may be based on existing service networks or may need to be provided by event organisers.

## **MEDICAL EQUIPMENT**

20. The requirement for basic life support/advanced life support equipment is dependent on the type of event and the assessed risk of illness/injury. While standard lists of equipment will cover most requirements, there is a need to review literature, previous experiences and current practices.
21. Further equipment considerations include:
  - mobile versus fixed requirements;
  - arrangements to resupply aid posts as required; and
  - compatibility of on-site equipment with ambulance and other health care providers.

## **OTHER CONSIDERATIONS**

22. Further considerations include:

- ensuring sufficient water supplies;
- provision of sprinkler systems for crowds in hot open areas if suitable for the event;
- provision of welfare and information services (the helping and caring role);
- assistance with forgotten medications;
- provision of baby changing and caring facility; and
- containment and disposal of clinical waste.



# CHAPTER 7

## THE PSYCHOLOGICAL DIMENSION

### INTRODUCTION

1. Managing the public health implications of mass gatherings requires a wide range of psychological issues to be considered. Although some of these issues are addressed to a degree in other sections of this Manual, a more in-depth discussion of these issues is required.
2. The psychological issues can be divided into those relating to staff, to performers or participants, and to spectators. These three groups also need consideration in each of two conditions: in normal functioning and in response to an emergency.
3. Specialist consultation is required for a more detailed analysis of the many factors involved in some of these areas, as well as for the most suitable training and response options.

### STAFF

4. When staff are trained to see a response to emergencies as part of their normal role, they are more likely to notice cues earlier, and respond more quickly and appropriately.

### Reducing Psychological Problems

5. The incidence of psychological problems among staff may be reduced by considering the following points:
  - **Staff Selection**—Staff selected for an event should, where possible, have experience with similar events. Staff previously exposed to similar situations and conditions are more likely to respond appropriately in emergency situations.
  - **Training**—Training can provide staff with skills necessary to cope in an emergency situation as well as in their normal functions. This training may include:
    - drills, exercises and simulations to familiarise staff with emergency plans;
    - training in stress management; and
    - stress inoculation training and mental rehearsal.
  - **Staff Support**—Organisers should promote the development of peer, team, supervisor and other supports among their staff.
  - **Setting Performance Standards**—Organisers should maintain realistic expectations of task performance and emotional responses.
  - **Pre-event Briefings.**
6. When required to respond in an emergency, staff may benefit from:

- regular briefings;
- situation evaluation and appraisal;
- setting priorities;
- allocation of resources;
- unfreezing;
- self-talk and pacing;
- communication with team-mates/colleagues;
- monitoring of effects;
- taking spells/rotating;
- management styles providing information, feedback, and role clarity;
- physical needs, food, refreshment and sleep;
- hazard/stressor reduction;
- media handling;
- demobilisation and stand-down; and
- defusing/informal debriefing.

7. Staff, in their recovery, may benefit from:

- defusing/informal debriefing;
- operational debriefing;
- peer debriefer programs;
- peer support programs;
- formal critical incident debriefing;
- follow-up debriefing/individual counselling;
- desensitisation;
- individual debriefing;
- referral to mental health professionals;
- assistance in dealing with return-to-work issues;
- spouse and family support; and
- support during: coronial hearings, investigations, operational debriefings etc.

## **PERFORMERS AND PARTICIPANTS**

8. Performers and participants require special consideration. Already in a stressful situation, their vulnerability is increased by features of the mass gathering that endanger their security, their performance or both.
9. Performers and participants often have a considerable investment in their being able to perform to a high standard. If arrangements go awry or are disrupted, they may be more traumatised than staff or spectators.
10. There are many psychological issues and strategies involved in performers and participants being able to overcome performance anxiety, avoid 'choking' under pressure, and in improving their results. These are outside the scope of this Manual, however directors, coaches, managers and sports psychologists may prove a valuable resource in addressing the psychological needs of performers and participants.

## **SPECTATORS**

11. Psychological issues related to spectators can be grouped into the following areas:
  - The effects on individuals of event hazards, crowding, moshing and physical stressors.
  - Crowd behaviour, before, during and after an event. This includes the prediction, prevention and management of potentially hazardous behaviours.
  - The psychological environment, expectations of conflict, delays, confusion, or vulnerability, for example, at memorial services.
  - Crowd and individual behaviour in emergency situations, for example, a fire. Considerations include best methods of instruction, types of instruction, predicting and responding to hazardous behaviours eg. re-entry or disorderly evacuation.
  - The longer term effects of an emergency on the spectators - group and individual approaches to assisting the psychological recovery. This includes means of identifying, contacting and providing services for those affected.

## **RECOVERY ISSUES**

12. Emergency management plans should identify the agency responsible for disaster counselling in the area and their contact details for both business hours and after-hours.
13. There should be a means of identifying and registering those affected including staff, performers, responders, audience, passers-by, and communications and administration personnel.
14. Psychological recovery may require a wide range of activities for groups, families, communities, organisations and individuals.
15. Services must be appropriate to the needs of those affected, accessible both physically and by culture and language. Such support must be appropriate to the age, gender, religion and other aspects of the survivors.
16. Services should be available for as long as they are required. They should cover a wide range of media, eg. hotlines and survivor newsletters, and be available out of normal hours. Assistance should also be available for Coroner's inquests, anniversaries, inquiries, and memorial services and other events that may be distressing for the survivors.
17. Defusing, debriefing and individual counselling for emergency services personnel is best done by practitioners familiar with those services, their role, language and culture.
18. The event organisers and the management of the facility should assist in the identification of those affected, in the provision of necessary services, and in any subsequent activities related to the emergency that has occurred. Memorial services, commemorative activities, the construction of a memorial or the raising of a memorial plaque at the site of an incident may assist survivors in their recovery.

19. Further details on Event Briefing and Debriefing appear at Annex Q.

### **RECOVERY: A CASE STUDY**

20. On Anzac Day 1995, the platform of Sydney's St James Station was crowded with people returning home after watching the parade through the city. Among the crowd were the members of a drum and pipe band that had been playing on the march. As the train drew in an elderly man jumped from the platform in front of the train. The train hit the man and he fell between the tracks. Although he went under the train, he sustained only a minor head injury.
21. In this incident there was only one minor physical injury. However, the psychological impact was considerable. The effect was most obvious among the members of the band. When they attempted a scheduled performance later in the day, they found they couldn't play. Both rhythm and melody disintegrated and several band members broke into tears. Band members were soon given debriefing and some individual support.

## CHAPTER 8

# SPECIAL PLANNING FOR HIGH-RISK EVENTS

### INTRODUCTION

1. Special plans should be developed for high-risk events. This chapter provides some examples of what might be termed high-risk events, together with an array of suggested preparedness measures.

### POWER BOAT RACES AND SIMILAR ON-WATER EVENTS

#### Medical Support for Participants

2. Water events, particularly those involving motorised water craft, require careful planning. A dedicated medical response boat should be available in the water with appropriately trained personnel and equipment including spinal board and resuscitation equipment on the vessel. The medical boat should be linked by two-way radio to the rescue boats and ambulance/medical services. For off-shore boat racing there may be a need for a helicopter with rescue capabilities.
3. A rescue boat should be in attendance with experienced divers equipped with scuba gear, and trained to effect inverted, below-surface releases as well as under-water extrications.
4. Landing locations appropriate for the transfer of stretcher patients from boats to land ambulances must be identified.

#### Spectator Areas

5. Appropriate buffer walls or 'run off' areas should be in place to prevent out-of-control vessels from entering spectator and pit areas.
6. Where spectators are permitted to line piers and breakwaters along areas of deep water, the following is suggested:
  - In the absence of provision of some physical barrier, a line should be marked to warn spectators away from the edges fronting deep water.
  - A dedicated boat should be in attendance to constantly patrol the area and be equipped with a loud-hailer to direct spectators who venture too close to the edge. The vessel should also be suitably equipped to provide water rescue and resuscitation of casualties. This vessel should be in addition to any vessel committed to the event participants.
7. All boats intended for rescue or medical attention should be clearly marked and have some form of hazard lighting to warn other vessels. Any vessels used for participant or spectator control should be staffed with personnel with appropriate lifesaving and emergency medical training, including CPR.



8. Any vessel intended for medical assistance and/or water rescue should contain sufficient clear space to resuscitate the prone human form, and be equipped, as a minimum, with the following:
- A spinal board for full body immobilisation, including necessary cervical collars and restraint strips.
  - Ventilation equipment, which should desirably be a positive pressure oxygen ventilator, and as a minimum, a bag-valve-mask unit, preferably with an oxygen assist. Oropharyngeal airways and suction should also be included.
  - A supply of large pressure dressings.
  - Personnel trained and experienced in the use of the equipment identified above.
  - Personnel trained and attired to enter the water to effect a rescue and removal.

## **AUTOMOBILE AND SIMILAR RACES**

9. Organised auto races conducted by professional racing bodies at permanent facilities normally meet the guidance on safety of participants as outlined in this document. Similarly, professional racing bodies using temporary facilities follow very strict Guidelines for the conduct of races. These race safety Guidelines do not necessarily cover the health and safety of the general public. Rallies conducted on public roads are a source of great concern due to the very limited control over spectators. Spectators invariably position themselves in remote, almost inaccessible, areas where the action is spectacular. The entire track should be monitored as well as possible, and a suitable communication system should be in place.

## **Medical Support**

10. An ambulance and trained staff should be immediately available in the event of a crash. The training for these personnel must include knowledge of the racing rules and the various flags used by race marshals. Most importantly, knowledge of how soon another racing vehicle will arrive at the scene, whether the crashed vehicle is on the track or not, is essential.
11. At smaller club events the financial arrangements may prohibit the cost of having an ambulance on stand-by and other suitable arrangements must be made. In such circumstances a dedicated vehicle with appropriate equipment and trained personnel should be made available to serve as the ambulance. It should not be merely a van with basic equipment provided as an ad hoc measure.
12. The ambulance should be positioned for controlled, rapid access to the track. An appropriate communications system and procedures should be in place to activate an immediate ambulance response to a track emergency, while racing is modified by track marshals.
13. Guidelines should be established in advance to determine whether:

- the race will continue if the ambulance leaves (i.e. to transport a patient), and the availability of a back-up ambulance to take its place; and
  - the ambulance will be dedicated strictly to the participants, and if so, what means are available to assist with medical emergencies among the spectators.
14. While some races continue to run under caution and other flags when an ambulance or other emergency vehicle is on the track, it is preferable that the race be stopped if at all possible.
  15. Suitable 'first attack' fire fighting and rescue equipment should be available at the track. If on-site resources are not able to readily cope with the emergency, then there must be procedures to obtain a rapid fire and rescue service response.
  16. The provision of a site hospital should be considered in view of risk of injury to participants and spectators, the expected number of spectators, distance to the nearest hospital, etc.

### **Spectator Areas**

17. Barriers should be in place to isolate spectators from out-of-control vehicles. Safety should be further enhanced by a compulsory 'no mans land' to keep spectators away from the barrier fence. Experience has shown that these barriers can be moved or broken by vehicles, resulting in injuries to spectators leaning against the barriers.
18. The design of barrier height and strength should take into account the possibility of one vehicle mounting another or somersaulting end over end. A barrier to retard penetration by a single impacting vehicle will be insufficient.
19. In addition, parts of automobiles involved in collisions can become projectiles, and wheels can come loose and bounce into spectator areas. A strong wire mesh debris fence may be affixed to barrier fencing and the top of retaining walls as an additional protective mechanism, permitting spectator visibility while serving as a trap for projectiles.
20. Spectator access to the track and pit areas at any time, including after the race has concluded, should be carefully monitored if permitted at all. Participants often test vehicles after the event, with neither drivers nor spectators anticipating each other's presence on the track.
21. Track invasion by spectators after the winner has passed the finish line and while other competitors are still racing has caused major problems and injury at a number of events. All officials should be briefed on ways to control this behaviour and how to respond should those control measures fail.

### **Pit Areas**

22. In-race refuelling of cars in pit areas creates a potential for fire if fuel inadvertently contacts hot parts or is ignited by a spark. To combat this threat, appropriate and sufficiently-large fire extinguishers, or some other suitable means of extinguishment, must be available to be used by trained personnel at refuelling sites. Personnel should be reminded that some racing fuels burn with an invisible flame.
23. The combination of vehicles entering the pit lane at high speed and drivers' vision may be impeded by trackside barriers increases the risk to both drivers and personnel in the pits. Organisers should consider introducing speed limits in pit lanes, and enforce suitable penalties for transgressions by drivers. Ideally, a system of notifying pit personnel of vehicles entering the pits, such as a siren or horn, should also be implemented.
24. As spectators are generally unfamiliar with pit environs and procedures, access to the pits should be restricted to officials and members of the race crews. If spectators are to be permitted in the pit area, they must be properly controlled, taking into consideration protection from moving vehicles, hot engine parts, sharp metal, and other pit hazards.
25. Spectators should not be allowed to cross the race track if at all possible. If this cannot be done then all spectator crossings should be at designated crossing points which are strictly controlled by race officials. Officials should be equipped with an efficient communication system to the race control area, which can provide information on upcoming race traffic.

## **AIR SHOWS AND DISPLAYS**

26. Although air shows are usually staged in accordance with aviation standards, certain factors to reduce the risk of a serious incident should be considered by event organisers, emergency managers and health personnel.

### **Acrobatic Areas**

27. Acrobatic manoeuvres should not take place over built-up areas, but over fields, water, airstrips, or other uninhabited areas. Aircraft should not fly over spectator areas. Where aircraft exit a manoeuvre laterally (parallel to the ground) the direction of exit should be away from, or parallel to, the spectators, not towards or over them.

### **Safety**

28. On-site fire services should be capable of delivering foam onto a crashed or burning aircraft. Should the air show not take place at an airport with foam-equipped trucks, alternate arrangements for their provision should be considered, as water-delivering fire apparatus will be unsatisfactory.
29. In the event of a mishap, organisers should have a clear idea as to the requirements of the coroner and air crash investigators.

### **Parachute Jumps**

30. Parachute jumps should have landing zones safely away from spectators, or hazards to the jumpers. There are a number of recorded cases where parachutists have been blown off course and suffered injury or death as a result. Spectators can also be injured in the scramble to avoid a descending jumper.

## **FIREWORKS/PYROTECHNICS**

31. Whenever public displays of fireworks are going to take place the local authorities, including police, fire and ambulance services, should be notified, and consulted, prior to the event.

### **Placement/Launch Site**

32. Most major incidents involving fireworks can be avoided through careful planning of the launch site.
33. In establishing a launch site, close attention should be paid to the anticipated wind direction and strength, both of which may affect the flight path of fireworks and the area in which debris may fall. In addition, the possibility of having to abandon the display should be a consideration in site placement and design.
34. Where possible the launch site should be on water, for example on a barge or pier as they can be readily abandoned should an accident occur and the supply ignites.
35. There must be a barrier between the crowd and the launch site, in order to protect the crowd in the event of a tip over after ignition resulting in a lateral, rather than vertical, projection.
36. Fireworks must not be projected over the heads of spectators, as debris, often hot, from overhead fireworks can fall into spectators eyes, onto their heads, etc.
37. Fireworks should not be projected over flammables, trees, bush areas, buildings, or boats (if the fireworks are to be launched over water).
38. Unused fireworks should be stored in covered metal containers to prevent inadvertent ignition, either by staff, or by descending hot particles from previously deployed overhead fireworks.
39. Firefighting equipment, commensurate with location, should be on immediate stand-by including fire extinguishers and trained firefighters at the launch site.
40. Protective clothing, including face shields, helmets and heavy gloves should be worn by those deploying and igniting fireworks in case of explosion, or premature, or delayed ignition.
41. The launch site and surrounding area should be carefully inspected after the event to ensure no incipient or rekindled fires are possible. All used fireworks

should be soaked in water and removed from the site, along with any securing spikes, wires or other potentially hazardous objects.

## **Lasers**

42. Laser light shows are now frequently included as a form of entertainment at many special events. Health care personnel on duty at such events need to be aware of any potential hazards in the use of lasers or accidents that can occur involving laser light equipment.
43. Lasers should only be operated by properly licensed personnel. The National Health and Medical Research Council Code of Practice to be followed for safety at laser light shows together with compliance with Australian Standard 2211-1991, Laser Safety, should obviate any problems occurring. Local authorities requested to authorise the use of laser lights should be aware that laser operators are required to maintain a "Display Safety Record" log book for their particular equipment. This log includes internationally recognised design features and safety calculations and will provide valuable information in making the decision on permitting the display and, if permitted, some warning of potential problems.

## **EVENTS INVOLVING PRE-TEEN AND EARLY TEEN AUDIENCES**

44. Concerts that attract younger audiences (for example, pre- and early teens) can create a number of difficulties, including individuals who become lost or separated from friends, miss scheduled return transportation, or lack sufficient funds for alternate transportation.
45. Parents will often take young spectators to the event, but have difficulty in finding them at the conclusion. If parents are using their cars to pick up children, traffic jams may prevent close access to the venue. Prior to entering the venue, parents and their children should identify a specific place to meet at the conclusion of the event.
46. One concept to alleviate difficulties is to implement a 'Parents' Oasis' adjacent to the venue to provide parents with a waiting area during the concert. Coffee, soft drinks, nibbles and newspapers can be provided to pass any time spent waiting.
47. The concept of a 'Parents' Oasis' is one that is particularly suited to concert-type events aimed at younger audiences, where parents would not want, nor be wanted by their children, to be in attendance at the actual performance. The efforts in providing such a facility are more than offset by the reduction in effort needed to deal with the young audiences at the conclusion of the event.
48. Information booths with access to the public address system and clearly identified event staff can assist lost children and their parents.
49. Consideration should also be given to the effects created by a major incident which may be compounded by the problems of parents attempting to gain access to the area to be re-united with their children or, in the worse case scenario, trying to find out where their child has been taken if injured



**ANNEX A  
TO CHAPTER 8**

## CHRONOLOGY OF MAJOR CROWD-RELATED EVENTS AND INCIDENTS

<b>Year</b>	<b>Location</b>	<b>Event</b>	<b>Cause</b>	<b>Deaths</b>	<b>Injuries</b>
1845	Canton, China	Theatre	Fire	1670	Unknown
1883	Sunderland, U.K.	Entertainment in Hall	Fire	183	Unknown
1902	Glasgow, U.K.	Soccer Game	Crowd Pressure	25	500
1903	Chicago, U.S.A.	Theatre	Fire	587	'100s'
1922	Washington DC, U.S.A.	Cinema	Roof Collapse	122	300
1923	Wembley, U.K.	Soccer Game	Crowd Ingress		1000
1927	Glasgow, U.K.	Cinema	Fire	70	Unknown
1943	Bethnal Green, U.K.	Underground Shelter	Crowd Ingress	173	69
1946	Bolton, U.S.A.	Sport	Crowd Pressure	33	'100s'
1955	Le Mans, France	Car Race	Crash	83	100
1956	Brooklyn, U.S.A.	Entertainment in Hall	Fire	11	250
1960	Indianapolis, U.S.A.	Auto Race	Grandstand Collapse	2	60
1961	Nuneaton	Dance	Crowd Egress	16	Unknown
1963	Indiana	Ice Skating	Explosion	60	300
1964	Lima, Peru	Soccer Game	Riot and Panic	300	500
1969	Bethel, U.S.A.	Rock Festival (500,000)		3	4000
1969	Altamont, U.S.A.	Rock Festival (300,000)		4	Unknown
1971	Glasgow, U.K.	Soccer Game	Crowd Pressure	66	'100s'
1973	Watkins Glen, U.S.A.	Rock Festival (600,000)		6	108
1975	Hamilton, Canada	Rock Concert (60,000)		0	150
1978	Mosport Park, Canada	Rock Concert (85,000)		0	450
1979	St. Clairsville, U.S.A.	Music Festival (40,000)		0	3000
1979	Cincinnati, U.S.A.	Rock Concert	Crowd Craze	11	11
1980	Toronto, Canada	Rock Festival	Riot	0	18
1980	Mosport Park, Canada	Rock Festival (30,000)		0	50
1980	Devore, U.S.A.	Rock Festival (410,000)		0	2,621,982
1980	Fontelga, Brazil	Pope's Visit	Crowd Surge	7	Unknown
1980	Kinshasa, Zaire	Pope's Visit	Crowd Surge	7	Unknown
1981	Dublin, Ireland	Disco	Fire	48	128
1985	Glasgow, U.K.	Soccer Game	Crowd Crush	66	Unknown
1985	Bradford, U.K.	Soccer Game	Stadium Fire	56	200
1985	Mexico City, Mexico	Stadium	Crowd Panic	10	29
1985	Brussels, Belgium	Soccer Game	Crowd Panic	39	375

Year	Location	Event	Cause	Deaths	Injuries
1985	Philadelphia, U.S.A.	Rock Concert (1,000,000)		0	700
1985	Philadelphia, U.S.A.	Rock Concert (90,000)		0	515
1985	Handsworth, U.K.	Outdoor Gathering	Riot	2	Unknown
1985	Bristol, U.K.	Outdoor Gathering	Riot		50+
1985	Tottenham, U.K.	Outdoor Gathering	Riot	1	255
1985	Birmingham, U.K.	Soccer Game	Riot	1	250
1985	Heysel, Belgium	Soccer Game	Riot	38	Unknown
1987	Tripoli, Libya	Soccer Game	Crowd Panic	20	Unknown
1987	Enniskillen, Ireland	Outdoor Gathering	Bomb	11	60
1988	Katmandu, Nepal	Soccer Game	Crowd Surge	90	700
1988	Ramstein, Germany	Air Show	Crash into Spectators	70	500
1988	Castle Donington, U.K.	Outdoor Gathering	Crowd Pressure	2	Unknown
1988	Ramstein USAF Base	Outdoor Gathering	Impact/Fire	45	345
1988	Omagh, Ireland		Bombing	8	29
1989	Hillsborough, U.K.	Soccer Game (50,000)	Crowd Craze	95	400
1989	Teheran	Ayatollah's Funeral	Crowd Violence	10	500
1990	Mecca, Saudi Arabia	Religious Festival	Crowd Surge	1426	'1000s'
1991	Toronto, Canada	Post-exhibition (300)	Street Riot	0	3
1991	New York City, U.S.A.	Basketball Game (1,000)	Crowd Craze	8	28
1991	Salt Lake City, U.S.A.	Rock Concert	Crowd surge	3	Unknown
1992	Toronto, Canada	School Party (2,500)	Riot	0	8
1992	Hong Kong	Street Festival (20,000)	Crowd Surge	20	89
1992	South Korea	Rock Concert	Crowd Pressure	1	50
1993	Rio de Janeiro, Brazil	Concert (3,000,000)		Unknown	Unknown
1993	Madison, U.S.A.	Football Game (12,000)	Crowd Crush	0	69
1994	Athlone, South Africa	Political Rally (20 000)	Crowd Surge	3	21
1994	Mecca, Saudi Arabia	Religious Festival (2,500,000)	Crowd Surge	270	Unknown
1994	Baytown, U.S.A.	Sports Event	Grandstand Collapse	1	17
1994	Saugerties, U.S.A.	Rock Festival (350,000)		2	7500
1995	Rio de Janeiro, Brazil	Rock Concert (3,500,000)		Unknown	Unknown
1996	Cleve, Australia	Circus	Stand collapse	0	48



<b>Year</b>	<b>Location</b>	<b>Event</b>	<b>Cause</b>	<b>Deaths</b>	<b>Injuries</b>
1997	Mecca, Saudi Arabia	Religious Festival	Fire	343	2000
1997	Tel Aviv, Israel	Sports Event	Bridge collapse	4	Unknown
1997	Ciudad del Este, Paraguay	Political Rally	Structural collapse	38	100+
1998	Mecca, Saudi Arabia	Religious Festival	Crowd surge	118	Unknown

Table modified from: Wyllie R, "Setting the Scene; Lessons Learned from Crowd Related Disasters", Easingwold Papers No 4., Home Office, Emergency Planning College (1992).

**Notes:**

1. Attendance figures, if available, are shown in parentheses in the 'Event' column.
2. Casualty figures are as provided to the media by official sources. It should be noted that casualty figures for rock festivals traditionally have included all persons presenting for medical care, including such minor complaints as blisters, bruises, etc.
3. The column 'Deaths' also includes those who died of natural causes during the event.



## **PLANNING CHECKLIST FOR SAFE AND HEALTHY MASS GATHERINGS**

Management of the safety and health aspects of mass gatherings involves the integration of a variety of responsibilities and activities performed by various statutory and private organisations.

The following list has been prepared as a Manual to the vast number of elements which need to be addressed in the preparation for an event and for which in the most part require documentation based on local rules and regulations.

### **PLANNING CHECKLIST**

#### **1. Preface**

- 1.1. Who is the Plan For?
  - 1.1.1. Executive Summary
  - 1.1.2. Historical Perspective
  - 1.1.3. Possible Users
  - 1.1.4. Sources of Assistance (Network List)
- 1.2. What is it About?
  - 1.2.1. Set the Context.
- 1.3. How to Use It?
  - 1.3.1. Educational Section
  - 1.3.2. Operational Section

#### **2. Concept of the Event**

- 2.1. Aim
  - 2.1.1. Why? (viability and marketability)
  - 2.1.2. How?
- 2.2. Scope
  - 2.2.1. What Type?
  - 2.2.2. When?
  - 2.2.3. Where?
- 2.3. Parameters
  - 2.3.1. Duration
  - 2.3.2. Crowd Size
  - 2.3.3. Crowd Type
  - 2.3.4. Day/Night
  - 2.3.5. Alcohol/Drugs
  - 2.3.6. Pyrotechnics
  - 2.3.7. Sound Amplification
  - 2.3.8. Traffic/Road Closures
  - 2.3.9. Boundaries of Site (if any)
  - 2.3.10. Others
- 2.4. CV Promoter - Organisation
- 2.5. Financial
  - 2.5.1. Ticketing
  - 2.5.2. Budget Guidelines/Classification

- 2.5.3. Cost Recovery (Y/N)
- 2.5.4. Charged
- 2.5.5. No Charge
- 2.6. Sponsorship
  - 2.6.1. Choice of Sponsor
  - 2.6.2. Obligation/Responsibilities of Sponsor
  - 2.6.3. Rights of Sponsor
- 2.7. Concept Acceptance

### **3. Pre-event Planning**

- 3.1. Application
- 3.2. Agreement
- 3.3. Draft Management Plan
  - 3.3.1. User Pays (Y/N)
  - 3.3.2. Risk/Threat Assessment
  - 3.3.3. Gantt Charts - Time Line
  - 3.3.4. Communications - Types/Strategy
  - 3.3.5. Emergency Management Plan
  - 3.3.6. Traffic/Transport Plan
  - 3.3.7. Parking
  - 3.3.8. Accommodation
  - 3.3.9. Alcohol Management
  - 3.3.10. Crowd Management
  - 3.3.11. EPA
    - 3.3.11.1. Noise
    - 3.3.11.2. Waste Management
  - 3.3.12. OH&S
  - 3.3.13. Disability Management
  - 3.3.14. Health
    - 3.3.14.1. Public: Food; Water; Rubbish
    - 3.3.14.2. Psychological
    - 3.3.14.3. Medical/Ambulance
  - 3.3.15. Venue: Suitability/Normal Use
  - 3.3.16. Security
  - 3.3.17. Safety
  - 3.3.18. Contingency Plan
  - 3.3.19. Publicity
    - 3.3.19.1. Media
    - 3.3.19.2. Advertising/Promotion
    - 3.3.19.3. Public Relations
    - 3.3.19.4. Community Involvement
    - 3.3.19.5. Complaints Procedures
  - 3.3.20. Tickets/Accreditations
  - 3.3.21. Cultural Issues
  - 3.3.22. Cash Management
  - 3.3.23. Volunteers/Staff
  - 3.3.24. Insurance/Duty of Care
  - 3.3.25. Budget Strategy
- 3.4. Authorities
  - 3.4.1. Stakeholders
- 3.5. Licenses
- 3.6. Permits

- 3.7. Relevant Legislation
- 3.8. Acceptance
  - 3.8.1. Formal Document
  - 3.8.2. Attached or Part of Risk Assessment
- 3.9. Working Committees
  - 3.9.1. Police/Fire/Ambulance
  - 3.9.2. Community/Council Local Traders
  - 3.9.3. Consumer Representative
  - 3.9.4. Event Management
  - 3.9.5. Crowd Management
- 3.10. Modifications
- 3.11. Consultative Structure
- 3.12. Outcomes - Plans
- 3.13. Acceptance in Principle
  - 3.13.1. Subject to Satisfying Permits
  - 3.13.2. Documents to be Prepared for Sign Off

#### **4. Detailed Planning**

- 4.1. Planning Team
  - 4.1.1. Identify Stakeholders
  - 4.1.2. Identify Legislation and Permits Required
  - 4.1.3. Building Codes & Health Regulations
  - 4.1.4. Opposition to Venue
  - 4.1.5. Public Services/Utilities Coordinator
- 4.2. Venue Suitability
  - 4.2.1. Essential Services
    - 4.2.1.1. Fire Fighting Equipment
    - 4.2.1.2. Smoke Hazard Management
    - 4.2.1.3. Lift Installations
    - 4.2.1.4. Emergency Lighting, Exit Signs & Warning Systems
    - 4.2.1.5. Provision for Escape
    - 4.2.1.6. Construction of Exits
    - 4.2.1.7. Access for People with Disabilities
    - 4.2.1.8. Fire Resistance and Stability
    - 4.2.1.9. Fire Protection of Theatres, Stages and Public Halls
  - 4.2.2. Maintenance of Essential Services
  - 4.2.3. Objections
  - 4.2.4. Alternatives
  - 4.2.5. Staffing
  - 4.2.6. Noise
  - 4.2.7. Crowd Size & Type
  - 4.2.8. Facilities Required
  - 4.2.9. Access/Egress
  - 4.2.10. Seating Design
  - 4.2.11. Fencing & Barricades
  - 4.2.12. Site Plan
    - 4.2.12.1. Common Zonation for All Agencies
    - 4.2.12.2. Grid Overlay
- 4.3. Administration
  - 4.3.1. Budget
  - 4.3.2. Finance
  - 4.3.3. Contracts

- 4.3.4. Insurance/Liability
- 4.3.5. Time Line
- 4.3.6. Roles & Responsibilities
- 4.3.7. Contingency Planning
- 4.3.8. Cash Management
- 4.3.9. Asset Management
- 4.4. Publicity
  - 4.4.1. Media
    - 4.4.1.1. Direct or Delayed
    - 4.4.1.2. Build and Dismantle
    - 4.4.1.3. Liaison
    - 4.4.1.4. Accreditation
    - 4.4.1.5. Advertising & Promotion
    - 4.4.1.6. Public Relations
    - 4.4.1.7. Community Consultation
    - 4.4.1.8. Complaints Procedures
    - 4.4.1.9. Promotional Samples
- 4.5. Ticketing
  - 4.5.1. Will it be a Ticketed Event?
  - 4.5.2. Will it be Reserved Seats or General Admission?
  - 4.5.3. Conditions of Entry
  - 4.5.4. Integrated Ticketing
  - 4.5.5. Price Structure
  - 4.5.6. VIPs
  - 4.5.7. Pass-Outs
  - 4.5.8. Accreditation
- 4.6. Operational
  - 4.6.1. Transport
    - 4.6.1.1. What Type will be Used? Public or Private.
    - 4.6.1.2. Parking
    - 4.6.1.3. Disabled/VIP/Staff/Contractor
    - 4.6.1.4. Emergency
    - 4.6.1.5. Service Vehicles
    - 4.6.1.6. Road Closures
    - 4.6.1.7. Traffic Management
    - 4.6.1.8. How to Get To & From
  - 4.6.2. Security
    - 4.6.2.1. Type of Security
    - 4.6.2.2. CCTV
    - 4.6.2.3. Perimeter
    - 4.6.2.4. Searches
    - 4.6.2.5. Apprehension
    - 4.6.2.6. Technology
    - 4.6.2.7. Intelligence
    - 4.6.2.8. Lock Up & Patrol
    - 4.6.2.9. Asset Register
      - 4.6.2.9.1. Pre & Post-Event Stock Take
  - 4.6.3. Staffing
    - 4.6.3.1. Paid/Volunteer, Career or Casual
    - 4.6.3.2. Training
    - 4.6.3.3. Numbers
    - 4.6.3.4. Uniform or Not

- 4.6.3.5. OH&S
- 4.6.4. Media/TV
  - 4.6.4.1. Direct or Delayed
  - 4.6.4.2. Bump In/Out
  - 4.6.4.3. Liaison
  - 4.6.4.4. Accreditation
- 4.6.5. Emergency Management Planning
  - 4.6.5.1. Hazard Analysis
    - 4.6.5.1.1. Hazard Identification
    - 4.6.5.1.2. Risk Assessment
    - 4.6.5.1.3. Treatment Options
  - 4.6.5.2. Health
  - 4.6.5.3. Evacuation
  - 4.6.5.4. Recovery
  - 4.6.5.5. Loss of Utilities
  - 4.6.5.6. Alliance to Local/Regional/State Plans
  - 4.6.5.7. Objectives
  - 4.6.5.8. Roles & Responsibilities
- 4.6.6. Communications
  - 4.6.6.1. Methods
    - 4.6.6.1.1. Public Address/Megaphones
    - 4.6.6.1.2. Signage
    - 4.6.6.1.3. Wands
    - 4.6.6.1.4. Phone
    - 4.6.6.1.5. Clothing (Tabards)
    - 4.6.6.1.6. Radios
  - 4.6.6.2. On-Site Directory
- 4.6.7. Coordination, Command and Control
  - 4.6.7.1. Who?
  - 4.6.7.2. Which Service?
  - 4.6.7.3. Location of Command Centre
- 4.6.8. Entertainment
  - 4.6.8.1. Quality
  - 4.6.8.2. Type
  - 4.6.8.3. Suitability
  - 4.6.8.4. Requirements
  - 4.6.8.5. Staging
  - 4.6.8.6. Change Rooms
  - 4.6.8.7. Rehearsals
  - 4.6.8.8. Duration
  - 4.6.8.9. Running Sheet
- 4.6.9. Utility Services
  - 4.6.9.1. Cleaning
  - 4.6.9.2. Water
  - 4.6.9.3. Electricity
  - 4.6.9.4. Sewerage
  - 4.6.9.5. Maintenance
- 4.6.10. Crowd Management
  - 4.6.10.1. Disability
  - 4.6.10.2. Social/Cultural
  - 4.6.10.3. Trends
  - 4.6.10.4. Searches/Property

- 4.6.10.5. Pedestrian Flow
- 4.6.10.6. Desire Lines
- 4.6.10.7. Devices
- 4.6.10.8. Apprehension
- 4.6.10.9. Access & Assembly
- 4.6.11. Food & Beverage
  - 4.6.11.1. Management of Alcohol
  - 4.6.11.2. Staff & Training
  - 4.6.11.3. Legislation
- 4.6.12. Merchandising
- 4.6.13. Exercising

## 5. Event

- 5.1. Preamble: Prior to the commencement of the event, there will be a variable time period of preparation and construction of the site facilities.
- 5.2. Review
  - 5.2.1. Daily (AM/PM) Briefing
  - 5.2.2. Inter/Intra Agency
  - 5.2.3. Review Running Sheet
  - 5.2.4. Response
  - 5.2.5. Site Inspection
    - 5.2.5.1. Damage
    - 5.2.5.2. Cleanliness
    - 5.2.5.3. Barriers
    - 5.2.5.4. Report Back
    - 5.2.5.5. Integrity
    - 5.2.5.6. Complete Check List
    - 5.2.5.7. Emergency Services/Police/Fire/Ambulance
    - 5.2.5.8. First Aid/Medical Facilities
    - 5.2.5.9. Security Issues
    - 5.2.5.10. Utilities
    - 5.2.5.11. Event
      - 5.2.5.11.1. Lighting
      - 5.2.5.11.2. Generators
      - 5.2.5.11.3. Light Temporary Structures
    - 5.2.5.12. Signs
    - 5.2.5.13. Ticket Facilities
    - 5.2.5.14. Staff Amenities
    - 5.2.5.15. Other
    - 5.2.5.16. Test Equipment
    - 5.2.5.17. First Aid/Medical
      - 5.2.5.17.1. Personnel
      - 5.2.5.17.2. Vehicles
      - 5.2.5.17.3. Mobile/Fixed Services
  - 5.2.6. Event Coordination Centre
    - 5.2.6.1. Staff from each Agency Involved
    - 5.2.6.2. Resources to Function
    - 5.2.6.3. Communications
      - 5.2.6.3.1. Issue of Equipment
      - 5.2.6.3.2. Systems
    - 5.2.6.4. Problem Resolution & Communication (between agencies)
    - 5.2.6.5. Event Log



- 5.2.6.6. Emergency Access/Egress Routes
- 5.2.6.7. Monitor Need for Activation of Contingency Plans
- 5.2.6.8. Staff Issues
  - 5.2.6.8.1. Rostering/Relief/Sign On
  - 5.2.6.8.2. Unions
  - 5.2.6.8.3. Absentees
  - 5.2.6.8.4. Employment Agreements
  - 5.2.6.8.5. Issue & Maintenance of Uniform & Equipment
  - 5.2.6.8.6. Duty Statements
  - 5.2.6.8.7. Reporting Mechanisms
  - 5.2.6.8.8. Amenities
  - 5.2.6.8.9. Credentials

## **6. Execute Plan**

- 6.1. Entertainment
  - 6.1.1. Schedules
  - 6.1.2. Back Stage
    - 6.1.2.1. Artist Management
    - 6.1.2.2. Performer Rest Area
      - 6.1.2.2.1. Secure Areas
      - 6.1.2.2.2. Support Staff
- 6.2. Merchandising
  - 6.2.1. Stock Take
  - 6.2.2. Vendors
- 6.3. Media
  - 6.3.1. Facilities
  - 6.3.2. Liaison
  - 6.3.3. Press Releases
- 6.4. Cash Management Plan
- 6.5. Sponsor Management
  - 6.5.1. Courtesy Facility
  - 6.5.2. Public Relations
  - 6.5.3. Signage
  - 6.5.4. Promotions
- 6.6. Maintenance
  - 6.6.1. Clean Up Site
  - 6.6.2. Roving Repair Crews
- 6.7. Secure Compound
  - 6.7.1. Contraband
- 6.8. Hazardous Material Management
- 6.9. On-Site Transport
  - 6.9.1. Motorcycles
  - 6.9.2. Bicycles
  - 6.9.3. Golf Buggies
  - 6.9.4. Cars/etc
- 6.10. Off-Site Transport Coordination
  - 6.10.1. VIPs
  - 6.10.2. Patrons
- 6.11. Monitor
  - 6.11.1. Health Regulation Checks
  - 6.11.2. Ticketing
    - 6.11.2.1. Gate Control
    - 6.11.2.2. Searching

- 6.11.2.3. Confiscation
- 6.11.2.4. Crowd Flow
- 6.11.2.5. Accreditation
- 6.11.3. Traffic Management
- 6.11.4. Environmental Impact
- 6.11.5. Alcohol
  - 6.11.5.1. Bar Management
  - 6.11.5.2. Chill Out Zone (sober space)
  - 6.11.5.3. Access Control (banding)
- 6.11.6. Situation Reports
- 6.11.7. CCTV & Other Modes
- 6.11.8. Cash Management
- 6.11.9. Cleaning
- 6.11.10 Maintenance
- 6.12. Respond
  - 6.12.1. Contingency Plans
    - 6.12.1.1. Crime Scene
    - 6.12.1.2. Sell Out/Over-Crowding
    - 6.12.1.3. Weather
    - 6.12.1.4. Air Traffic Control
    - 6.12.1.5. Incident Investigation/Management/Medical
    - 6.12.1.6. Insurance Claims
    - 6.12.1.7. Traffic
    - 6.12.1.8. Crowd Movement
    - 6.12.1.9. Services & Utilities
- 6.13. Debrief
  - 6.13.1. Daily Debrief (two types)
    - 6.13.1.1. Incident Requiring Investigation and Reports
    - 6.13.1.2. Operational Debrief
    - 6.13.1.3. Security
    - 6.13.1.4. Traffic
    - 6.13.1.5. Emergency Services
    - 6.13.1.6. Organisers
    - 6.13.1.7. Record and Recommend
- 7. Post Event Planning**
  - 7.1. Drug Testing/Alcohol
  - 7.2. Exiting Crowds
    - 7.2.1. Management of Pedestrians
    - 7.2.2. Vehicles
    - 7.2.3. Venue Exit
    - 7.2.4. Car Park
    - 7.2.5. Separation of Vehicles/Crowds
    - 7.2.6. Effect on Local Residents
    - 7.2.7. Amenity (noise etc.)
    - 7.2.8. Crowd Behaviour
      - 7.2.8.1. Hostile
      - 7.2.8.2. Opposing Crowds
      - 7.2.8.3. Ethnic Groups
    - 7.2.9. Public Transport
      - 7.2.10. People with Disabilities
  - 7.3. Dismantling of Site
    - 7.3.1. Consider New Shift

- 7.3.2. Vendors
  - 7.3.3. Resumption of Site to Pre-event State
  - 7.3.4. EPA Inspection
  - 7.3.5. Satisfaction of Permit Requirements
  - 7.4. Asset Protection
    - 7.4.1. Property
    - 7.4.2. Participants
    - 7.4.3. Officials
    - 7.4.4. VIP
    - 7.4.5. Post Event Inspection
    - 7.4.6. Damage Liability
  - 7.5. Finance/Settlement
    - 7.5.1. Cash Control
    - 7.5.2. Financial Analysis
    - 7.5.3. Payments
    - 7.5.4. Legal Claims
  - 7.6. Equipment Return
    - 7.6.1. Radios
    - 7.6.2. Uniforms
    - 7.6.3. Other Equipment
  - 7.7. Debrief
    - 7.7.1. Counselling
    - 7.7.2. Equipment Failure
    - 7.7.3. Inter/Intra Agency
    - 7.7.4. Collate Incident Reports
    - 7.7.5. Recommendations for Future Planning
  - 7.8. Acknowledgments
    - 7.8.1. Thank Yous
    - 7.8.2. Party
- 8. Glossary**



**CROWD TYPES**

<b>CROWD TYPE</b>	<b>COMMENT</b>
AMBULATORY	Walking, usually calm.
DISABILITY/LIMITED MOVEMENT	Crowd has limited or restricted movement. Requires additional planning.
COHESIVE/SPECTATOR	Watching specific activity.
EXPRESSIVE/REVELOUS	Emotional release, for example, cheering movement in unison.
PARTICIPATORY	Involved in actual event, for example, community fun runs.
AGGRESSIVE/HOSTILE	Initially verbal, open to lawlessness.
DEMONSTRATOR	Organised to some degree, for example, pickets, marches.
ESCAPE/TRAMPLING	Danger may be real or imaginary.
DENSE/SUFFOCATING	Reduction of individual physical movement.
RUSHING/LOOTING	Attempt to acquire/obtain/steal something, for example, tickets.
VIOLENT	Attacking/terrorising.

From Alexander E. Berlogngi, MS, *Understanding And Planning For Different Spectator Crowds, Engineering for Crowd Safety*, R.A. Smith and J.F. Dickie (Editors). Elsevier Science Publications B.V. (1993)

One crowd may exhibit all or part of the above types, planning must therefore consider each or at the least the most likely categories.



**CROWD DECONSTRUCTION**

<b>ASSESSMENT</b>	<b>COMMENT</b>
HOW ORGANISED	For example, walking to venue versus demonstrators.
LEADERSHIP	Normal crowd has no leadership, they are spontaneous.
COHESIVENESS	Degree of bonding.
UNITY OF PURPOSE	Some may be focused, others have own agenda for example, moshing, slam dancing.
COMMON MOTIVE FOR ACTION	Note distinction between performing same action for example, cheering v motive for same action for example, leaving the venue.
PSYCHOLOGICAL UNITY	Crowds at benefits are psychologically united for good, however, demonstrators could pose problems if antagonised.
EMOTIONAL INTENSITY	Much of this depends on the event and or special effects taking place.
VOLATILITY	To what degree has crowd reached an explosive point.
INDIVIDUAL BEHAVIOUR	How much individual control and responsibility is being exercised. The more this is evident the more restrained the crowd.
GROUP BEHAVIOUR	To what degree are individuals dominated by the group. The more this is evident the closer to 'mob mentality'.
DEGREE OF LAWLESSNESS	How much criminal behaviour is taking place.
LEVEL OF VIOLENCE	Can be assessed historically and/or current observations.
LEVEL OF PROPERTY DAMAGE	How much is likely to occur and where for example, parking area, toilets, walk-ways etc. Assessment is historical for venue, event and crowd plus current assessment.
LIKELIHOOD OF INJURY OR DEATH	Certain places at certain times for example, major sporting event and certain events for example, motor races.
NEED FOR CROWD CONTROL	How important is a detailed plan? Must be discussed with Experts, and the experienced, as the more detailed and complex the plan the more expensive and resource intense the commitment.

From Alexander E. Berlogngi, MS, *Understanding And Planning For Different Spectator Crowds, Engineering for Crowd Safety*, R.A. Smith and J.F. Dickie (Editors). Elsevier Science Publications B.V. (1993)

When it is understood what you are dealing with then ALL personnel must be briefed on what to look for, and how they should respond whilst they are performing their duties.





**CROWD CATALYSTS**

<b>CATALYST</b>	<b>EXAMPLE</b>
OPERATIONAL	Parking, no show performers, cancellations.
EVENT ACTIVITIES	Smoke, fire, lasers, noise.
PERFORMER(S) ACTIONS	Sexual/violent gestures, challenges.
SPECTATOR FACTORS	Drugs, alcohol, rush for seats.
SECURITY FACTORS	Excessive or unreasonable force, abuse of authority.
SOCIAL FACTORS	Racial tensions, team rivalries.
WEATHER	Heat, humidity, rain, lack of ventilation.
NATURAL DISASTER	Earthquake, deluge of rain, flash flood.
MAN MADE DISASTER	Structural failure, toxic substance.

From Alexander E. Berlognghi, MS, *Understanding And Planning For Different Spectator Crowds, Engineering for Crowd Safety*, R.A. Smith and J.F. Dickie (Editors). Elsevier Science Publications B.V. (1993)



**ANNEX F  
TO CHAPTER 8****NOTES ON HUMAN BEHAVIOUR**

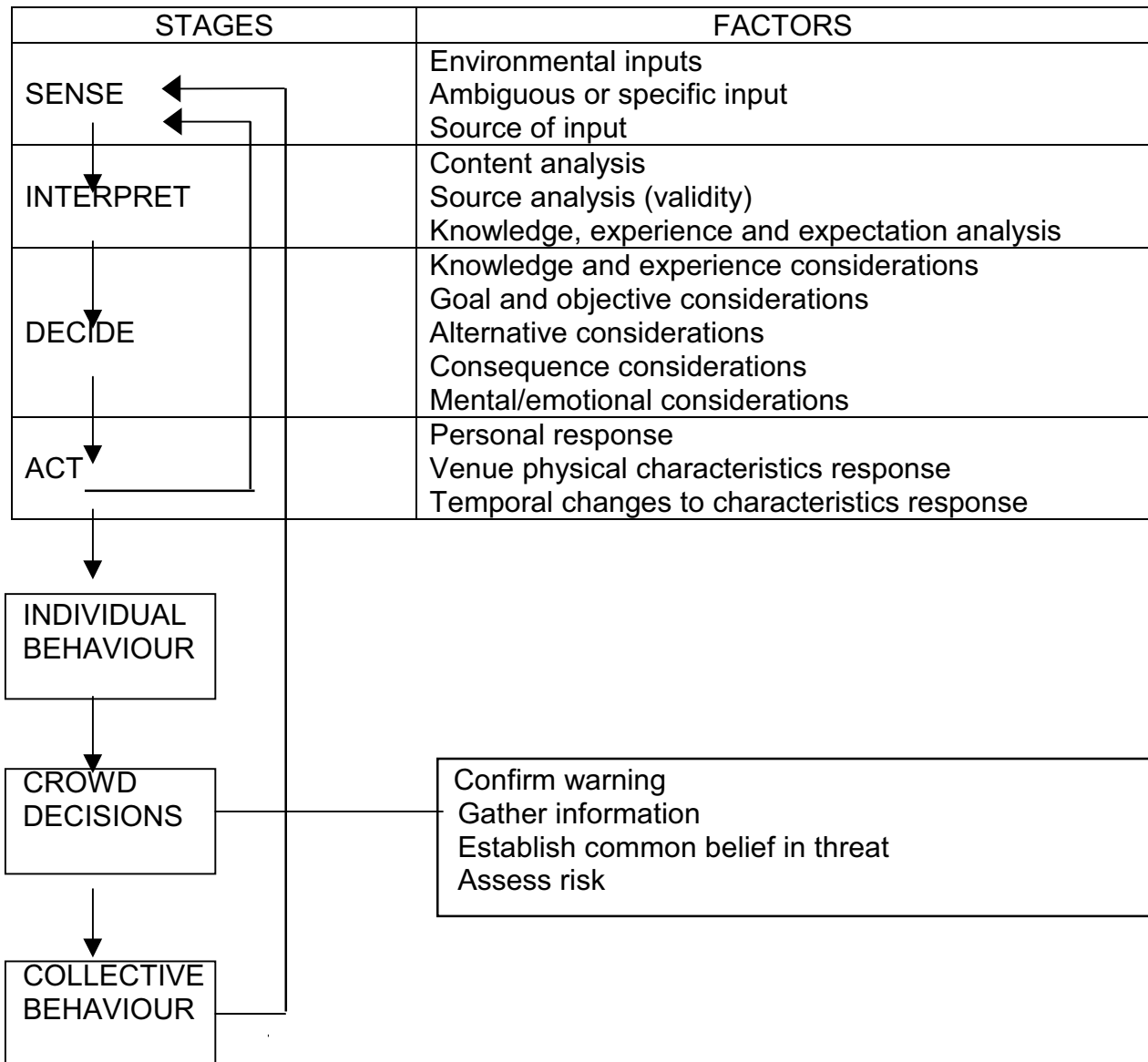
1. People are action or goal orientated. The reason for being there Manuals behaviour.
2. Behaviour takes place within existing roles. These roles may be part of the crowd or that of ticket collector or security guard.
3. Role related rules Manual behaviour. The rules Manual behaviour of the person in the role and also how people will react to them.
4. People actively interpret their surroundings. Behaviour is based on this interpretation.
5. Behaviour is 'setting defined'. The nature and purpose of the place influence what goes on and what is deemed appropriate behaviour.
6. Behaviour is Manuald by expectations and understanding. The understanding of the usual behaviour for that place, and expectations about people in particular roles is used to interpret what is going on about them and to Manual their actions. For example, running in an underground railway does not signify a fire.
7. Behaviour is Manuald by its organised context. Simply this relates to how the system functions normally. If it is unable to cope, then during a disaster it will not cope.
8. Behaviour is Manuald by its historical context. Over time, people establish a view of the place and relationships with people found there. These relationships and experiences play a role in shaping action and interaction.
9. Stages of behaviour. (see Annex G)

From Ian Donald, *Crowd Behaviour at the King's Cross Underground Disaster, Lessons Learned from Crowd Related Disasters*, Easingwold Papers No. 4, Home Office Emergency Planning College (1992).



## STAGES OF BEHAVIOUR (INDIVIDUAL)

For ease of understanding, individual behaviour is divided into four stages. With each input there is an analysis of the information that leads to a consideration as to the response which is to be made. This process is a feedback loop that is in action continuously.



Crowd responses are thus sequences of individual and collective behaviour where individuals communicate with one another to: affiliate (family, friendship, etc. groups); reduce confusion; and evaluate emotional responses.



## CROWD NOTES

### 1. Crowds are complex social structures.

- Social ROLE is the behaviour set we carry out in a given context.
- Social NORM is the Manualline set used to deal with others in their role.
- Crowd Roles:
  - Active Core: carry out action of crowd.
  - Cheerleaders: verbal support for leaders.
  - Observers: follow actions but rarely take part.
- Gatherings are organised into roles that have differing behaviours and are spatially distributed.
- Phases in Culture Development -- Vocalisation -- Verbalisation -- Gesticulation.
- Significance of crowds:
  - Increases probability of a dangerous occurrence.
  - Increases potential number of victims.
  - Makes communication slower and more difficult.
  - Makes changes in action slower and more difficult.
  - Diffusion of responsibility (someone else will do it).

### 2. Panics and crazes

**Panic** in a group is the flight from a real or perceived threat in which escape appears to be the only effective response. What appears to be panic is usually the result of poor inputs (especially communications or the lack of) and previous knowledge and experience. See notes on Individuals Annex G.

**Craze** in a group is the temporary, short-lived competitive rush by a group toward some attractive object. Tends to occur on entering, exacerbated by the lack of information.

### 3. Deindividuation

Is defined as a loss of self-awareness and evaluation apprehension in group situations that foster anonymity. Whilst obviously related to individual behaviour it must be considered closely with Crowd Deconstruction (see Annex D). Behaviour may be:

- mild lessening of restraint for example, screaming during a concert;
- impulsive self-gratification for example, theft, vandalism, molestation; and
- destructive social explosions, for example, group violence, rioting and torturing.

### 4. Defusing

The tedium created by waiting and/or the perception that other gates are being opened first or later arrivals are being admitted first can create problems. Such things as appropriate music, use of humour, food and beverage services moving through the group, cheerful security staff moving through the group and good communication including a public address system, can help defuse the situation.



## **CRITICAL CROWD DENSITIES**

The objective should be to prevent the build-up of large accumulations of patrons particularly within short time periods in confined spaces especially if they are frustrated by the inability to see what is happening.

### **CRITICAL CROWD DENSITIES**

A study by Fruin (1981) identifies critical crowd densities as a common characteristic of crowd disasters. Critical crowd densities are approached when the floor space per standing person is reduced to about 0.5 sq.m.

Considering the various movements or positions spectators will occupy, approximate minimal mobility requirements have been empirically identified by Fruin (1981) as follows:

- Pedestrians moving in a stream require average areas of 2.3 sq.m per person to attain normal walking speed, and to pass and avoid others.
- At 0.93 sq.m per person, walking becomes significantly restricted, and speeds noticeably reduced.
- At 0.46 sq.m per person, the maximum capacity of a corridor or walkway is attained with movement at a shuffling gait and movement possible only as a group. This would be characteristic of a group exiting a stadium or theatre.
- At less than 0.46 sq.m per person average, individual pedestrian mobility becomes increasingly restricted.
- At approximately 0.28 sq.m per person, involuntary contact and brushing against others occurs. This is a behavioural threshold generally avoided by the public, except in crowded elevators and buses.
- Below 0.19 sq.m per person, potentially dangerous crowd forces and psychological pressures begin to develop.

Fruin (1981) contended that "The combined pressure of massed pedestrians and shock-wave effects that run through crowds at critical density levels produce forces which are impossible for individuals, even small groups of individuals, to resist".

It can be seen from the above that it may be necessary for the provision of a monitoring system such as closed circuit television monitoring of crowd movements that will provide the services with warning that some action is necessary to prevent a major incident.



## **CROWD THROUGHPUT CAPACITIES**

In his writings on crowd disasters, Fruin (1981) identifies several areas regarding spectator throughput in entry to a performance. For planning purposes, he suggests:

### **Ticket Collectors**

- Ticket-collectors faced with a constant line can throughput a maximum of one patron per second per portal in a simple pass-through situation.
- Two seconds per patron if the ticket must be torn and stub handed to patron; and
- More complicated ticketing procedures (and/or answering the occasional question) will protract time per patron.

### **2. Doorways**

Free-swinging door, open portal, or gate can accommodate up to one person per second with a constant queue.

Revolving doors and turnstiles would be half this rate of throughput, or less.

### **3. Corridors, Walkways, Ramps**

Have a maximum pedestrian traffic capacity of approximately 25 persons per minute per 0.3 metre of clear width, in dense crowds.

### **4. Stairs**

Have a maximum practical traffic capacity of approximately 16 persons per minute in the upward direction. Narrow stairs (less than 1 .53m) will lower the maximum flow.

### **5. Escalators and Moving Walkways**

A standard 1.2m wide escalator or moving walkway, operating at 36 metres per minute can carry 100 persons per minute under a constant queue.



# PROMOTER CHECKLIST

## EVENT DETAILS

Name of event: \_\_\_\_\_

Day(s) of event      From: / \_\_\_\_ / \_\_\_\_                      to:    \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Event time:              Start: \_\_\_\_\_                      Finish: \_\_\_\_\_

Site: \_\_\_\_\_

Site address: \_\_\_\_\_

Promoter: \_\_\_\_\_

Event manager: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Contact:      Phone:    \_\_\_\_\_              Fax:    \_\_\_\_\_

A/Hours:    \_\_\_\_\_

Site preparation start date:      \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Site vacated date: / \_\_\_\_ / \_\_\_\_

Brief details of function (including entertainment and main attractions):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sponsorship details (including any restrictions) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**WHAT LEGISLATIVE, REGULATIVE AND LEGAL ISSUES NEED TO BE ADDRESSED?**

State legislative/regulative requirements: \_\_\_\_\_

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Local legislative/regulative requirements: \_\_\_\_\_

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Permits required: (for example, liquor, pyrotechnics, fire, laser, food, etc) \_

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Engineering approvals: \_\_\_\_\_

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Insurance required: \_\_\_\_\_

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(NOTE: It is recommended that \$5 million is the minimum acceptable public liability cover).

**SITE DETAILS**

Note: Include detail such as - indoor/outdoor, normal use, permanent structure, temporary site, multiple sites, site boundaries, temporary structures, natural features, likely hazards [including weather], historic sites, environmental issues, parking arrangements, access and egress, and facilities, for example, water, toilets, food preparation, waste removal

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Estimated total attendance: \_\_\_\_\_

Estimated age composition of audience:

- 0 - 12 years: \_\_\_\_\_ % of total audience
- 12 - 18 years: \_\_\_\_\_ % of total audience
- 18 - 25 years: \_\_\_\_\_ % of total audience
- 25 - 40 years: \_\_\_\_\_ % of total audience
- 40 - 55 years: \_\_\_\_\_ % of total audience
- 55 years and above \_\_\_\_\_ % of total audience

Admission will be by:      pre-sold ticket      free      other: (Please specify)

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Has this event been conducted previously? YES / NO

If yes, when ? \_\_\_\_\_

Where ? \_\_\_\_\_

Event Manager:

Contact phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Is the proposed event to be the same? YES / NO

If no, please detail the changes. \_\_\_\_\_

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What effects will the changes have? \_\_\_\_\_

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Will alcohol be served/consumed? YES / NO

**KEY STAKEHOLDERS**

	<b>NAME</b>	<b>PHONE</b>
State Government Dept(s):	_____	_____
Local Council(s):	_____	_____
	_____	_____
	_____	_____
Neighbouring Councils:	_____	_____
	_____	_____
Police:	_____	_____
Ambulance Service:	_____	_____
First Aid Service:	_____	_____
Fire Service:	_____	_____
Hospital/Medical Services:	_____	_____
State Emergency Service:	_____	_____
Security Personnel:	_____	_____
Liquor Licensing:	_____	_____
Local Hotel and Businesses:	_____	_____
	_____	_____
Transport Authority:	_____	_____
	_____	_____
Neighbours:	_____	_____
	_____	_____
Other:	_____	_____
Other:	_____	_____

Time frame necessary for contact with stakeholders

\_\_\_\_\_

\_\_\_\_\_

A full briefing of all the above stakeholders is planned for \_\_\_\_\_ (date)

at \_\_\_\_\_ (venue)



**EVENT COMMUNICATIONS**

During the event what form of communication systems will be available/provided/required for

- Event management: \_\_\_\_\_
- Public address (internal): \_\_\_\_\_
- Public address (external): \_\_\_\_\_
- Emergency services: \_\_\_\_\_
- Coordination requirements: \_\_\_\_\_

**EVENT PROMOTION AND MEDIA MANAGEMENT**

Can the promotion ticketing and publicity for the event include messages that clarify the focus of the event (for example, family fun, sporting contest, musical entertainment)?

The focus of the event is \_\_\_\_\_

The event promotion and publicity will promote:

- Safe drinking practices YES / NO
- Don't drink and drive YES / NO
- Intoxicated and underage persons will not be served alcohol YES / NO
- Bags and eskies may be searched or restricted YES / NO
- Glass containers are not permitted YES / NO
- Water will be freely available YES / NO
- Availability of 'wet' and 'dry' areas YES / NO
- Location of facilities included on ticketing YES / NO
- Health care advice included on ticketing YES / NO
- Smoke free environment YES / NO

**SECURITY**

Which type of security will be appropriate for the event? \_\_\_\_\_

Who will be the appropriate security firm to be contracted? \_\_\_\_\_

Event security would commence on \_\_\_ / \_\_\_ / \_\_\_ and conclude on \_\_\_ / \_\_\_ / \_\_\_

What will be the role of security? \_\_\_\_\_

\_\_\_\_\_  
Have Police been contacted in relation to security? YES / NO

If yes, what will be required of the Police \_\_\_\_\_  
\_\_\_\_\_

When would a briefing/debriefing be held involving Police, Security, Bar Staff and Licensing personnel?

\_\_\_\_\_ (Date before Event) \_\_\_\_\_ (Date after Event)

Will a briefing of all staff and officials be provided regarding helping patrons with amenities and services? YES / NO

**SIGNAGE**

What signage including those required under the provisions of the Liquor Act, will need to be developed and obtained?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Will there be signage in languages other than English? YES / NO

**TRANSPORT**

Does a transport strategy need to be developed? YES / NO

List the departments, councils and/or agencies that are likely to be involved in developing this strategy.

Name: \_\_\_\_\_ Organisation: \_\_\_\_\_

Name: \_\_\_\_\_ Organisation: \_\_\_\_\_

Name: \_\_\_\_\_ Organisation: \_\_\_\_\_

Name: \_\_\_\_\_ Organisation: \_\_\_\_\_

**ACCESS AND EGRESS FOR PATRONS**

What provisions can be made for patrons to access, move around and leave the event venue without excessive queuing, or crushes (for example, gate control, pathways, free space)

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Will patrons be able to access toilets, food and bar areas, and entertainment sites without difficulty? YES / NO

In an emergency, will patrons be able to leave the venue or move to other areas within the venue in reasonable safety? YES / NO

Comment: \_\_\_\_\_

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**ACCESS FOR PERSONS WITH DISABILITY**

What provisions need to be made for persons with a disability to access and move around the event venue?

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Will persons with a disability be able to access toilets, food and bar areas, and entertainment sites without difficulty? YES / NO

In an emergency, will persons with a disability be able to leave the venue without significantly impeding the movement of other patrons? YES / NO

Comment: \_\_\_\_\_

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**NOISE**

What provisions can be made to minimise the level of noise at and around the event?

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_
- e) \_\_\_\_\_

**MANAGEMENT OF ALCOHOL**

Are there any standard conditions of the Licensing permit? YES / NO

If YES, what are they?

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How will event personnel, specifically bar and security staff, be trained and informed of the Responsible Service of Alcohol legislation and made aware of the responsibilities and penalties?

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What types of alcohol (ie. light/mid/heavy beer, wine and spirits) and other drinks will be available at the event?

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In what type of containers will alcohol and other drinks be available? For example, glass, can or plastic containers?

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What provisions will be made for the collection of drink containers during and after the event?

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What will be the pricing structure for heavy alcohol, low alcohol and non-alcoholic drinks?

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Is it anticipated that the pricing structure will discourage patrons from becoming unduly intoxicated? YES / NO

Can the event publicity, ticketing and signage for the event inform patrons of the restrictions on alcohol including that alcohol will not be served to minors and intoxicated people? YES / NO

Can some, if not all, bars be shut prior to the end of the entertainment? YES / NO

If the event **is** **BYO**, what provisions can be made to prevent glass related injuries, underage drinking and excessive intoxication?

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If the event **is not** **BYO**, what provisions can be made to prevent alcohol from being brought into the venue?

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If there are to be designated drinking areas will they be adequate in size and number and supported by toilet facilities to cope with the expected size of the crowd? YES / NO

Will there be dry areas for families, entertainment and food? YES / NO

Will the event provide the following facilities to encourage responsible drinking by patrons?

Free drinking water YES / NO

Cheap non-alcoholic drinks	YES / NO
Range of quality food	YES / NO
Shade or cover	YES / NO
Safe drinking information	YES / NO
Quality entertainment	YES / NO
'Wet' and 'Dry' areas	YES / NO

**OTHER DRUG USE**

Is it possible that drugs including marijuana and amphetamines may be available and used at this event? YES / NO

List any drugs and related information known from previous experience:

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What provisions can be made to address this drug use?

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**MEDICAL**

What level of medical service is considered necessary and for what duration?

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Who can provide this service? \_\_\_\_\_

What will be the cost of the service? \_\_\_\_\_

If it is not a local provider, what arrangements have been made to liaise with the local Ambulance Service?

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What facilities will the medical service require (including helipad)? \_\_\_\_\_

\_\_\_\_\_

How can these be provided? \_\_\_\_\_

\_\_\_\_\_

**ANIMALS**

If the event involves animals, what arrangements will be necessary for their management, care and well being?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If the event may affect animals, what arrangements will be necessary for their management, care and well being?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**BRIEFING/DEBRIEFING**

A final briefing of stakeholders is planned for \_\_\_\_\_ weeks prior to the event.

A debriefing will be conducted with all stakeholders within \_\_\_\_\_ days of the event.





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**LEGAL REQUIREMENTS**

Does the application:

- Comply with State and Local legislation/regulations? YES / NO
- Provide for adequate general public liability insurance? YES / NO
- Provide for adequate liability insurance for a major incident? YES / NO
- Need to post a bond to cover contingencies? YES / NO

**LICENCES/PERMITS**

Does the application require:

- Liquor licensing? YES / NO
- Road closures/restrictions? YES / NO
- Food outlet licences? YES / NO
- Fire permits? YES / NO
- Any other \_\_\_\_\_

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**SITE**

- Is it appropriate for the type of event? YES / NO
- Are there multiple sites involved in the event? YES / NO

Comment \_\_\_\_\_

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Indoor/outdoor \_\_\_\_\_

Permanent structure or temporary site \_\_\_\_\_

- Normally used for this type of event? YES / NO
- Normally used for large crowds? YES / NO

Topography \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Any affect on neighbouring councils? YES / NO

Suitability for camping facilities? YES / NO

List any environmental issues (green, flora, fauna, historic site) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List any natural features likely to be hazardous (river, dam, long grass, forest)  
\_\_\_\_\_  
\_\_\_\_\_

Anticipated crowd number \_\_\_\_\_

Is site large enough for expected crowd? YES / NO

Tickets being pre-sold? YES / NO \_\_\_\_\_% OF ATTENDANCE

Tickets sold at the gate? YES / NO \_\_\_\_\_% OF ATTENDANCE

Other means of limiting crowd \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Type of crowd expected (Young, Old, Family, Unruly, etc) \_\_\_\_\_  
\_\_\_\_\_

Is water available at site? YES / NO

Quality of water \_\_\_\_\_

Quantity of water \_\_\_\_\_

Probability of sabotage of water YES / NO

Comment: \_\_\_\_\_

\_\_\_\_\_

Fixed sewerage? YES / NO

Adequate sewerage capacity? YES / NO

Comment \_\_\_\_\_

\_\_\_\_\_

Other utility supplies (power, gas) \_\_\_\_\_

\_\_\_\_\_

Will they be adequate? \_\_\_\_\_

Will emergency water supplies be required? YES / NO

Will emergency water supplies be supplied? YES / NO

Will emergency water supplies be available? YES / NO

Comment \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Will emergency electricity supplies be required? YES / NO

Will emergency electricity supplies be supplied? YES / NO

Will emergency electricity supplies be available? YES / NO

Comment \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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Will emergency gas supplies be required?	YES / NO
Will emergency gas supplies be supplied?	YES / NO
Will emergency gas supplies be available?	YES / NO
Comment _____	

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### **EMERGENCY SERVICES/KEY STAKEHOLDERS**

Has applicant consulted and gained support/approval from:

State/Local Government Departments	YES / NO
------------------------------------	----------

If yes, list by abbreviation

Police	YES / NO
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Ambulance	YES / NO
-----------	----------

First Aid Service	YES / NO
-------------------	----------

Fire	YES / NO
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Medical/Hospital	YES / NO
------------------	----------

State Emergency Service	YES / NO
-------------------------	----------

Transport Authorities	YES / NO
-----------------------	----------

Liquor Licensing Court	YES / NO
------------------------	----------

Neighbouring Councils	YES / NO
-----------------------	----------

Neighbours/Community Association	YES / NO
----------------------------------	----------

Other \_\_\_\_\_

Other \_\_\_\_\_

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Have emergency management plans been prepared?	YES / NO
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Have contingency plans been prepared?	YES / NO
---------------------------------------	----------

If no, are they necessary?	YES / NO
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If they are necessary, who will co-ordinate the preparation? \_\_\_\_\_

**SECURITY**

Is special security being provided? YES / NO

If YES who is providing it? \_\_\_\_\_

\_\_\_\_\_

If NO is it considered necessary? YES / NO

Is the provider licensed to provide the service? YES / NO

**EVENT SAFETY ISSUES**

**Natural**

Weather (rain, wind, heat, cold) \_\_\_\_\_

\_\_\_\_\_

Terrain (cliffs, creeks, reclaimed land ) \_\_\_\_\_

\_\_\_\_\_

**Environmental**

Animals, forests, pollens, pests, flora, fauna, historical \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Technological**

Power lines, noise, lighting, access and egress \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Human**

Alcohol, hysteria, nuisance, neighbours, fire \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Event**

Pyrotechnics, lasers \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**ACCESS - EGRESS - PARKING**

Is road access and egress suitable? YES / NO

Is road access and egress suitable in all weather? YES / NO

Is road access and egress adequate? YES / NO

Will special traffic control be required? YES / NO

Is sufficient suitable off road parking available? YES / NO

Will emergency services have continual access and egress? YES / NO

In the event of a major emergency, does access and egress allow for emergency services? YES / NO

**FOOD**

Refer to Annexes N and O.

**TOILETS**

What is the anticipated crowd mix of male and female attendees?

\_\_\_\_\_ MALE                      \_\_\_\_\_ FEMALE

What is the fixed toilet facility numbers? \_\_\_\_\_ MALE WCs

\_\_\_\_\_ URINALS

\_\_\_\_\_ MALE WHB

\_\_\_\_\_ MALE SHOWERS

\_\_\_\_\_ FEMALE WCs

\_\_\_\_\_ FEMALE WHB

\_\_\_\_\_ FEMALE SHOWERS

\_\_\_\_\_ DISABLED

Will separate toilet facilities be available for food vendors? YES / NO

Will separate toilet facilities be available for medical attendants? YES / NO

Are there sufficient toilet facilities? YES / NO

If no, what additional requirements? \_\_\_\_\_ MALE WCs  
\_\_\_\_\_ URINALS  
\_\_\_\_\_ MALE WHB  
\_\_\_\_\_ MALE SHOWERS  
\_\_\_\_\_ FEMALE WCs  
\_\_\_\_\_ FEMALE WHB  
\_\_\_\_\_ FEMALE SHOWERS  
\_\_\_\_\_ DISABLED

Will current sewerage system cope with the extra demand? YES / NO

If no, what additional requirements will there be?

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Where additional requirements are unsewered, can service trucks gain easy access? YES / NO

What servicing of toilets will be provided during the event? \_\_\_\_\_

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What, if any, plumbing maintenance will be available on-site? \_\_\_\_\_

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**GARBAGE WASTE REMOVAL**



Number of rubbish bins available \_\_\_\_\_ PUBLIC USE  
\_\_\_\_\_ FOOD OUTLET USE  
\_\_\_\_\_ MEDICAL FACILITY USE

Type of rubbish bins (including for sharps, wet, dry, hazardous) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Program for emptying rubbish bins \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Program for removal of site rubbish \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESTORATION AFTER EVENT**

Arrangements for site clean up \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Arrangements for clean up of surrounds (including access and egress roads)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Arrangements for refund of bond money if applicable \_\_\_\_\_  
\_\_\_\_\_

**CAMPING AREAS** (where applicable)

What is the proximity to property boundaries?

NORTH                      METRES                      SOUTH                      METRES  
EAST                      METRES                      WEST                      METRES

What is the requested population density of the camp? \_\_\_\_\_ PERSONS PER HECTARE

What is the requested maximum site population for each site?  
MAXIMUM \_\_\_\_\_ PERSONS PER SITE

What separation is planned between sites?  
MINIMUM \_\_\_\_\_ METRES BETWEEN ROWS

What emergency access and egress will be available? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What toilet and ablution facilities will be available within camp site?

\_\_\_\_\_ MALE WCs                      \_\_\_\_\_ FEMALE WCs  
\_\_\_\_\_ URINALS  
\_\_\_\_\_ MALE WHB                      \_\_\_\_\_ FEMALE WHB  
\_\_\_\_\_ MALE SHOWERS                      \_\_\_\_\_ FEMALE SHOWERS  
\_\_\_\_\_ DISABLED TOILETS                      \_\_\_\_\_ DISABLED SHOWERS

What water supply is available? \_\_\_\_\_

Can you estimate whether this is sufficient? YES / NO

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What rubbish bins are available? \_\_\_\_\_  
\_\_\_\_\_

Can you estimate whether this is sufficient? YES / NO

What waste disposal arrangements are being made? (including wet, dry, sharps, sewage)

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**SITE PLAN**

Camp site plan available (Including access and egress for emergency vehicles, access and egress for service vehicles, parking areas camping areas, numbered camp sites, toilet and ablution facilities, water points, rubbish bins, food venues, First Aid/Medical facilities, any other related facilities)

YES / NO

**SUPPORTING DOCUMENTATION**

See attached

***Please forward a copy to the local emergency services***



**GASTROINTESTINAL ILLNESS QUESTIONNAIRE**

(For use at first aid post during mass gatherings)

Date \_\_\_/\_\_\_/\_\_\_ Interviewed by\_\_\_\_\_

Name\_\_\_\_\_

Address\_\_\_\_\_

Phone Number \_\_\_\_\_

Symptoms: What symptoms have you had?

Diarrhoea	YES / NO
Nausea	YES / NO
Vomiting	YES / NO
Abdominal cramps	YES / NO
Headache	YES / NO
Fever	YES / NO
Blood in faeces	YES / NO
Joint or muscle aches	YES / NO
Other_____	

When did the symptoms first start?

Date \_\_\_/\_\_\_/\_\_\_

Time \_\_\_\_ am/pm

Do you know of others who have been ill with similar symptoms? YES / NO

(Include names and contact details for others for further follow-up on reverse side of form)

What have you eaten since being at this event and where was it purchased or obtained from?

(List the food history reverse side of the form, include all food, drinks, confectionery and any other snacks. It is important to list where the food was obtained from).

Have you been swimming since being at this event?

Pool YES / NO

Spa YES / NO

River YES / NO

Lake YES / NO

Other \_\_\_\_\_

Do you suspect anything which may have caused your illness? YES / NO  
(explain)

NOTE: Keep this form for review or collection by the supervisor or public health official. Report anything suspicious or, if several cases, similar illness within a short period of time.

**ANNEX N  
TO CHAPTER 8**

## FOOD VENDOR INFORMATION SHEET

(To be provided to the local health authority)

Name of Operator: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Mobile: \_\_\_\_\_

Trading as: \_\_\_\_\_

Business address: \_\_\_\_\_

Main purpose of business: \_\_\_\_\_

Is a menu attached, indicating the full range of food to be provided?      YES / NO

Indicate which of the following foods you sell directly or will be using as ingredients:

Milk/milk products      YES / NO

Poultry      YES / NO

Salads/rice dishes      YES / NO

Egg products      YES / NO

Fish/fish products      YES / NO

Raw meat      YES / NO

Ice cream      YES / NO

Shellfish      YES / NO

Cooked meat      YES / NO

Type of operation:

Stall      YES / NO

Mobile unit      YES / NO

Stand      YES / NO

Tent/marquee      YES / NO

Other (specify) \_\_\_\_\_

Indicate the type of facilities to be provided on site:

Refrigeration	YES / NO
Freezer	YES / NO
Oven	YES / NO
Deep fryer	YES / NO
Microwave oven	YES / NO
Sink	YES / NO
Wash hand basin	YES / NO
Other (specify) _____	

Indicate power sources:

LPG	YES / NO
Electrical generator	YES / NO
Other (specify) _____	

Is the food to be prepared or stored in premises other than the temporary food premises or vehicle? YES / NO

If yes, please state the address \_\_\_\_\_

\_\_\_\_\_

Will food be delivered to the site by a separate supplier YES / NO

If yes, what arrangements will be made for receipt of those goods? \_\_\_\_\_

\_\_\_\_\_

Have you or any staff completed a food handler hygiene course? YES / NO

If yes, when and where \_\_\_\_\_

\_\_\_\_\_

Vendor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Venue: \_\_\_\_\_



## CATERING - A CHECKLIST FOR FOOD VENDORS

The establishment of a temporary catering facility can mean working in less than ideal conditions. The following checklist will provide guidance on minimum requirements for this type of event catering.

### SETTING UP

- |   |          |
|---|----------|
| Food service operation is licensed or registered in accordance with State requirements          | YES / NO |
| The appropriate permit has been obtained from the local authority where the event is to be held | YES / NO |
| The area for which the permit is valid is clear, ie where can I set up?                         | YES / NO |

### STAFF TRAINING

- |  |          |
|--|----------|
| Staff are trained in food handling and food safety   | YES / NO |
| Staff have been instructed on machinery operation, food preparation routines and occupational health and safety matters    | YES / NO |
| There are clear Guidelines for staff about what to do if problems occur, ie who to contact and appropriate contact numbers | YES / NO |

### FOOD HANDLING

- |  |          |
|--|----------|
| Hand washing is carried out thoroughly and regularly by all food handlers, particularly: |          |
| Before commencing work and after every break   | YES / NO |
| After visiting the toilet  | YES / NO |
| After handling raw food  | YES / NO |
| After using a handkerchief or tissue or touching nose, hair or mouth                     | YES / NO |
| After handling rubbish   | YES / NO |
| After smoking  | YES / NO |
| Correct food temperatures can be, and are, maintained                                    | YES / NO |

Food is cooled rapidly under refrigeration in trays not more than 100 mm deep	YES / NO
Tongs are provided and used where possible for food handling	YES / NO
Gloves, if used, are changed regularly	YES / NO
Food is thoroughly cooked	YES / NO
Food is protected from dust, insect pests and other contaminating matter	YES / NO
Staff wear suitable clean clothing and have long hair tied back	YES / NO
Food on display on counters is protected from contamination from the public by use of covers or guards	YES / NO
Condiment area is checked and cleaned regularly	YES / NO

### **FOOD STORAGE**

Sufficient refrigeration space is provided to cope with peak demand	YES / NO
Refrigerated storage temperatures are able to be maintained during peak loads	YES / NO
Raw foods are stored below cooked or ready to eat foods	YES / NO
Food containers are covered	YES / NO
Frozen food is thawed on the bottom shelf in the refrigerator or under cold running water	YES / NO
Dry food storage space is adequate for peak loads	YES / NO
Dry foods are protected from dust and insect pests and rodents at all times	YES / NO
Hot food storage is above 60°C	YES / NO
Cold food storage is below 5°C	YES / NO

### **FOOD TRANSPORT**

Transport times are kept to a minimum	YES / NO
Food temperatures are met at all times during transport	YES / NO
All foods are protected from dust, pests, chemicals and other contaminating matter	YES / NO

### **CLEANING AND SANITISING**

Cleaning cloths are replaced frequently	YES / NO
---	----------

Equipment and surfaces used for the preparation of raw foods are cleaned and sanitised before further use YES / NO

Sanitisers are appropriate for use in the food industry and are used in accordance with the manufacturers directions YES / NO

### **PACKAGING AND LABELING**

All prepacked foods are labeled in accordance with Australian and New Zealand Food Standards Code YES / NO

### **WASTE MANAGEMENT**

Waste is removed regularly from food preparation areas YES / NO

Putrescible waste removed from food preparation areas is placed in bins with tight fitting lids YES / NO

Capacity to store sullage waste is adequate or connection to the sewer is maintained without leakage YES / NO

### **INFECTIOUS DISEASES**

All staff are required to report any gastrointestinal type illness to the supervisor YES / NO

A register of staff illness is kept by the supervisor YES / NO

Staff are not permitted to work whilst they have symptoms of gastrointestinal illness or in the acute stage of a cold or flu-like illness YES / NO

### **SAFETY**

The workplace is safe, i.e. no trip hazards, no unprotected hot zones or unguarded equipment YES / NO

Fire precautions are followed and fire safety devices are to the satisfaction of the fire authority YES / NO

### **EMERGENCY MANAGEMENT**

Food handlers have contact details for all necessary personnel in case of problems occurring YES / NO

A list of appropriate contact details is maintained and accessible YES / NO

For example,

Event organiser	YES / NO
Environmental health officer	YES / NO
Plumber	YES / NO
Electrician	YES / NO
Refrigeration mechanic	YES / NO
Alternative refrigeration suppliers	YES / NO

**ANNEX P  
TO CHAPTER 8**

## **MANUAL TO THE PROVISION OF FIRST AID**

The number of First Aid personnel and posts will vary with the type of event. As a Manual St John Ambulance Australia have suggested the following formulation.

<b>Patrons</b>	<b>First Aid Personnel</b>	<b>First Aid Posts</b>
500	2	1
1000	4	1
2000	6	1
5000	8	2
10000	12	2
20000	22+	4

The number of first aid posts required would depend on what first aid room facilities are available. Every venue should have at least one room where there is power and running water.

First aiders are generally not required for events smaller than 500 patrons and which are held in close proximity to central ambulance/hospital services.

### **First Aid Posts**

These should be conspicuous and identified by an illuminated sign at night. Ideal locations are near the main entrance, and for large concerts, provision should be made behind the stage barrier.

### **Casualties**

Experience from other events has shown that most casualties are from:

- heatstroke, dehydration, respiratory distress;
- cuts from broken glass and drink can ring pulls;
- injuries from missiles, usually bottles and cans;
- fainting and exhaustion from a combination of hysteria, heat and alcohol, and at concerts, this often occurs at or near the stage barrier;
- trampling or crushing from crowd pressure;
- crowd 'surfing' and stage diving;
- illicit drug and alcohol abuse;
- epilepsy attacks brought about from strobe lighting; and
- age-related illness.



## **EVENT BRIEFING AND DEBRIEFING**

A briefing meeting with all key stakeholders, particularly Police, well in advance to the event is a critical part of the event planning process. The purpose of the briefing meeting is to inform stakeholders of the event details and emergency management plans. Concerns and issues relating to the event can be raised, discussed, and where necessary, changes made to the event plan.

A briefing agenda will ensure that everyone is aware of what issues will be discussed and who is participating in the briefing. The meeting agenda should allow time for discussion and, if necessary, be reconvened prior to the event if major changes to the event are required. The meeting is an opportune time for the distribution of relevant documentation including operational orders, emergency evacuation procedures, insurance details, electrical and structural certification, event personnel list and contact numbers.

### **KEY STAKEHOLDERS**

The following people may be considered as key stakeholders who should attend briefing and debriefing meetings:

- Event manager and assistants including bar manager.
- District police officer and/or police contact.
- Liquor licensing officer.
- Local council environmental health officer and/or safety officer.
- Ambulance service personnel.
- Fire brigade.
- Other emergency services.
- Principal of security firm.
- Local hoteliers and business representatives.
- Transport operators.
- Parking supervisor.

### **KEY ISSUES**

The briefing meeting should address the following key issues:

- Overall event details and logistics.
- Event venue plan.
- Communication equipment and process including contact numbers and radio frequencies/channels to be used during the event.
- Staffing arrangements.
- Security plan including procedures for patron eviction.
- Conditions which will cause the event to be cancelled or postponed including excessive wind, rain or lightning, insufficient ticket sales, and performer cancellations.

- The authority and process for cancelling or postponing the event must be agreed to and documented.
- Emergency management plans for larger than expected crowds, adverse weather and emergencies.
- Access route and venue facilities for emergency service personnel, vehicles and equipment.
- Command and First Aid post details including time, location, and personnel.
- Safety audit of the venue and entertainment.
- Time, date and location of the post-event debriefing meeting.

A written record of the meeting, noting decisions, discussions and detail changes should be circulated to attendees and then should be kept for review at the debriefing meeting or to resolve points of contention.

## **DEBRIEFING**

A comprehensive debriefing of the event with key stakeholders should be held within 2-4 weeks after the event to review and record the key issues that impacted on the success of the event. A list of recommendations should be developed for future planning of the event and can serve as a reference for future event briefings.



## GLOSSARY

<b>Contingency Plan</b>	A documented scheme of assigned responsibilities, actions and procedures to be followed should an emergency situation develop.
<b>Credential</b>	A letter or other testimonial attesting the bearer's right to confidence or authority.
<b>Cues</b>	A signal, hint or Manual.
<b>Debrief</b>	A meeting held during or at the end of an operation with the purpose of assessing the conduct or results of an operation.
<b>Emergency Management</b>	A range of measures to manage risks to communities and the environment.
<b>Emergency Management Plan</b>	A formal record of agreed emergency management roles, responsibilities, strategies, systems and arrangements.
<b>Endemic</b>	Constant presence of a disease or infectious agent within a given geographic area or population group.
<b>Environment Health Officer</b>	Terminology used which includes Health Inspector/Surveyors, Public Health Officers, Sanitary Inspectors/Engineers, Hygiene Officers and Preventive Health Officers.
<b>Gastric Illness (Gastroenteritis)</b>	An inflammation of the stomach and the intestinal tract, often described as food poisoning.
<b>Hazard Analysis</b>	That part of the overall planning process which identifies and describes hazards and their effects upon the community.
<b>Mass Gathering Medicine</b>	The management of the health and medical aspects of mass gatherings.
<b>Metering</b>	Term applied to the control procedures used to prevent critical crowd densities from developing in specific areas.

<b>Moshing</b>	A practice carried out at concerts where a person is supported above a crowd of people by their arms. This practice is carried out in the moshpit (area where the crowd is the densest).
<b>Potable Water</b>	Water which is safe for human consumption.
<b>Putrescible</b>	Waste which will decompose, for example, food waste.
<b>Reticulated</b>	Distribution or collection network for drinking water or sewage.
<b>Risk Assessment</b>	The process used to determine risk management priorities by evaluating and comparing the level of risk against pre-determined standards, target risk levels or other criteria.
<b>Sanitation</b>	Measures for the preservation of public health.
<b>Sewage</b>	Waste matter which passes through sewers.
<b>Slam Dancing</b>	A spontaneous form of dancing where people deliberately throw themselves against people they are dancing with.
<b>Special Plan</b>	A plan, complete in itself, for the emergency management of special or high-risk hazards.
<b>Sullage</b>	Waste water from sinks, showers and hand washing basins.
<b>Topography</b>	Physical features of place or locality.
<b>Vulnerability</b>	The degree of susceptibility and resilience of the community and environment to hazards.

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NOTE: The Australian Emergency Management Information Centre holds a selection of resources on this subject.