

Audience and Crowd Management Hazard Guide

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Disclaimer

In legislative terms, the requirements of the *Work Health and Safety Act 2011* (the WHS Act) and Work Health and Safety Regulations (the WHS Regulations) are mandatory. In contrast, a guide is designed to assist obligation holders to comply with the requirements of an act or regulation. The information contained in the LPA guides is not mandatory, has no legal status and may not apply in all work situations.

Obligation holders still have a duty to assess the risks in each work situation and take all reasonable steps to eliminate or minimise the risks that are specific to each work activity.



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1. Overview

This guide provides information to assist in managing the risks associated with crowds attending events. It is recommended that you reference information during the planning and delivery of your event.

This guide does not replace the need to implement risk management strategies, undertake research or seek specialist advice.

Each worker and person conducting a business or undertaking (PCBU) has a responsibility to understand their obligations under Work Health and Safety legislation. Codes of Practice and Australian and international standards provide approved guidance on how to meet work health and safety obligations.

Audience safety and crowd management are intrinsic to the success of every event. While the PCBU is ultimately responsible, they may not have the specialist knowledge of managing crowds and may have to draw upon competent crowd management expertise to identify the crowd-related hazards and advise on the appropriate control measures required to mitigate the risk to a tolerable level. Event organisers should satisfy themselves that the event security companies they contract have the necessary expertise to 'manage', not just 'control', crowds.

Crowds are made up of individuals, each with their own agenda. Individuals form larger groups, which then become joined by a common purpose. This purpose can be celebration and joy but can also be anger, panic or violence. Those attending your event will naturally assume that the event will be safe, well planned and will ultimately meet their expectations. Event organisers can minimise threats to enjoyment and safety by ensuring the safety of the attending audience is a priority over any financial gain.

History has demonstrated that events that are poorly designed, have poor management, ineffective risk assessment or insufficient control measures can have sometimes-catastrophic outcomes. Event organisers can also be faced with other threats, which despite robust planning, sufficient staff levels and effective communication, can turn into potentially dangerous crowd conditions. To address this, contingency planning should include a range of event specific 'what if' scenarios that carefully consider a range of circumstances that could have an adverse effect on the crowd, and the actions required to manage such instances.

A key issue is understanding the specific roles and responsibilities relating to the crowd. To ensure there is no ambiguity about this, and to identify any gaps, it is suggested a statement of intent is drawn up that:

- Identifies key agencies – including but not limited to the promoter, venue manager, event security contractor, event safety officer
- Highlights the roles they will play



- Records and what is understood to be the accepted roles and responsibilities of each agency

An event-specific crowd management plan should be independent of the security management and event management plans but should be an integral part of the overall event management documentation. The crowd management plan is solely focused on the crowd and how it will interface with the event design, venue layout, amenities and performance. The plan should provide clarity to stakeholders of how the crowd has been considered, the identification of the specific crowd hazards, the suggested control measures and how the crowd will be monitored and managed in both normal and emergency conditions.

Each event will have its own unique idiosyncrasies but generically, the crowd management plan should include a specific overview of as many potential hazard issues as possible, including at least some of the following points of consideration:

- Type of event
- Event duration
- Event location – proximity to transport hubs, car parks, coastlines etc.
- Modes of transport to the event
- Indoor/outdoor (or mixture of both)
- Topography
- Roles and responsibilities/statement of intent
- Performers
- Profile of the performers
- Other attractions/activations
- Event site plans
- Temporary structures
- Alcohol
- Concession stand/merchandising
- Audience demographics
- Historical incidents relating to this event
- Methods of communication with the crowd
- Advance information
- Ticketing/wrist-banding methodology
- Search criteria
- Flow rates – ticket distribution, Opening times, performance times
- Crowd density calculations



- Emergency evacuation (full and localised)
- Command and control structure (crowd)
- Medical access to groups or individuals in the crowd
- Vehicle access through the crowd
- Technical access to the performance areas through the crowd
- How the crowd will be monitored
- Catering plans
- Rubbish collection and removal
- Toilets
- Fresh drinking water
- Contingency planning
- States of readiness
- Event security numbers
- Signage
- Crowd-specific risk assessment
- Areas of specific concern
- Terminology
- Potential of terrorism attack

The crowd management plan is a live document, which should be constantly updated, based on other risks that may adversely affect the audience.

Crowd management planning should commence at the embryonic phase of your event to enable all parties to better evaluate the effects of their concepts on the crowd, together with the reasonably practicable solutions required to make the event safe and successful.

As part of the crowd planning process the following event phases should be considered.

- Arrival phase
- Ingress phase
- Event circulation
- Egress phase

For each phase, both normal and emergency conditions should be considered in terms of managing the crowd. Crowd related incidents have historically occurred at each phase of an event and as such, must be planned for accordingly.



All the risks are amplified when multiple stages are being used within the one event or where camping or other accommodation or very late hours are being planned.

An engineered structure with regular similar events, such as a sporting event in a stadium, will be more focused on reviewing each event on a case-by-case scenario, risk assessing accordingly and implementing the necessary control measures.

2. Key Considerations

The following questions are examples of what could be considered during event design, planning and delivery. Use them to identify hazards and plan how risks will be managed.	Yes	No	Action/Comments
2.1. Design and planning			
<i>Has the venue been finalised and contracts exchanged?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Has the ticketing system been finalised and will this reduce the flow rate for people entering your event?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are tickets designed so that they are secure, can be scanned or read easily?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is there a contingency in place in the event of any technical failure on ticket scanners (if used)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is there more than one entrance for the event?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are tickets colour coded to represent different entrances?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are event security staff familiar with the venue to direct members of the audience?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Will tickets be sold on the event day?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Will members of the audience have to be wrist banded on entry?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are guest, VIP and media ticket collections located in a secure area that has no adverse impact on the attending audience?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is there a dedicated disability entrance?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is there a designated accessible viewing area?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are there any age restrictions?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is there a search requirement for some or all patrons?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Has the entertainment been confirmed and finalised?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Has the audience demographic been identified and agreed with all parties?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Have there been any historical crowd related issues</i>	<input type="checkbox"/>	<input type="checkbox"/>	



<p>The following questions are examples of what could be considered during event design, planning and delivery. Use them to identify hazards and plan how risks will be managed.</p>	<p>Yes</p>	<p>No</p>	<p>Action/Comments</p>
<p><i>with previous performances or events of this nature?</i></p>			
<p><i>Have there been any changes to the venue/site that may affect the crowd management?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Are there any other events occurring on the same day which may affect your audience when arriving or leaving?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Have other PCBUs and workers who will be affected by this activity been identified?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Have arrangements been made to consult with and coordinate activities with other PCBUs?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Have all site/venue specific safety requirements or procedures been considered?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Have the evacuation times and event occupant capacity been determined?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Has it been agreed who will have overall responsibility for the safety of the audience?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Has an event security contractor been appointed who can demonstrate crowd management experience with this size and type of event?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Does the event security provider have evidence that their staff have been trained in crowd management not just crowd control?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Have suitable and sufficient numbers of event security staff been booked for this event?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Has a competent crowd risk assessor been appointed to identify the event specific crowd hazards and control measures required?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Has a suitable event site plan showing temporary structures, entrances/exits been provided?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Are suitable and sufficient barriers being considered for areas of loadbearing?</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><i>Has a competent barrier provider been contracted</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	



The following questions are examples of what could be considered during event design, planning and delivery. Use them to identify hazards and plan how risks will be managed.	Yes	No	Action/Comments
<i>who can manage all the event barrier requirements?</i>			
<i>Have event security numbers been based on the findings of the risk assessment rather than ratio?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Have contingency plans been drawn up?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is a show stop procedure in place for the event?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Has a communication plan been designed that allows clear lines of communication in both normal and emergency conditions?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Has it been determined how the crowd will be monitored throughout the event?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Have roles and responsibilities in relation to the audience safety been agreed? (Inc. police roles)</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Has available audience space been accurately measured and agreed?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are systems in place to communicate any event cancellation/postponement for any reason?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
2.2. Event delivery			
<i>Has a pre-event safety checklist been completed to ensure the event site is safe for the attending audience?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Have the event security team been fully briefed on the crowd risk assessment, states of readiness and emergency procedures?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Does the event security team have a robust command and control structure for this event?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is there a suitable area for staff to rest on their breaks?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are sight lines for the audience impeded in anyway?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are queue systems adequate?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are staff readily identifiable as event security/crowd safety staff?</i>	<input type="checkbox"/>	<input type="checkbox"/>	



The following questions are examples of what could be considered during event design, planning and delivery. Use them to identify hazards and plan how risks will be managed.	Yes	No	Action/Comments
<i>Are suitable and sufficient numbers of event security staff in position ready to receive the audience?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is appropriate signage erected to provide normal and emergency information?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>If volunteers are being used, have they been fully briefed?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are volunteers appropriately supervised?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Have event communication systems been tested?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Are crowd safety spotters in position?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Have barriers been erected and inspected?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Have all structures been inspected and a completion certificate provided for each?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Have performers and production been briefed on the event show stop procedure?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is the weather being continually monitored for any adverse effects?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is the medical team in place and a part of the communication system?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Is there an event re-entry policy?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Does this event have the potential to attract a terrorist attack?</i>	<input type="checkbox"/>	<input type="checkbox"/>	

3. General Guide – Crowd Safety

3.1. Responsibilities

The model *Work Health and Safety Act 2011* imposes specific requirements on PCBU's concerning audience safety under Division 2 – Primary duty of care:

- (2) A person conducting a business or undertaking must ensure, so far as is reasonably practicable, that the health and safety of other persons is not put at risk from work carried out as part of the conduct of the business or undertaking.

Duty holders may also have additional responsibilities under state safety regulations.

3.2. Training and competence

Different licensing and competency requirements apply across Australian states and territories.

Event organisers should check with their state security regulators to clarify what type of licence is required for the various roles being contracted. Various roles require different training experience and licenses, these can include, but not be limited to:

A – Security

- Event security consultancy
- Event security provider
- Event security staff
- CCTV operator
- Body guard
- Armed security (cash in transit)

B – Medical

- Event first aid
- The event ambulance service

C – Cleaning and house keeping

- Portaloo provider
- Safe rubbish removal

D – Driving

- Truck driving
- Performer access
- Truck, Elevated Work Platform (EWP) and fork lift during setup and bump out

E – Concessions

- Food preparation and other health considerations
- Responsible Service of Alcohol (RSA)

3.3. Consultation, cooperation and coordination

The WHS Act makes consultation with workers a legal requirement. Consultation, cooperation and coordination between PCBUs is a requirement where they share a duty for the safety of a worker or for work to be done.

All PCBUs have a duty to consult, cooperate and coordinate with all other PCBUs and workers in relation to the activity. They should use the information in this guide to consult with workers, including event staff, to determine the crowd hazards and risks associated with an event and how to best eliminate or minimise these risks using the hierarchy of controls.

Consultation should start as early as possible, before decisions are made, and continue through the duration of the event. Consider the other parties who will need to be involved in the consultation process in the planning stages of the event and determine what information needs to be shared and discussed.

Ideally consultation should start with the initial risk assessment supplied at the design stage, and all PCBUs staff and contractors need to be part of the process.

3.4. Design and planning

In the early stages of design and planning for an event, the following criteria, and any other criteria identified via risk assessment should be addressed:

- Preparation and dissemination of the initial risk assessment
- Consultation with relevant PCBUs and workers
- Consultation with emergency services, local council, public transport providers
- Consultation with crowd management professionals
- Development of specific crowd safety risk assessments including controls agreed to during consultation
- Selection of the event security providers
- Is the event free and/or unticketed.
- Agreed production scheduling and allocation of resources to minimise impact on others
- Number of entrances



- Ticket provider, on or off site, cash and card or credit card only
- Wrist banding if relevant
- Strategy to provide information to audience
- Emergency planning and contingencies
- Clear and concise roles and responsibilities pertaining to crowd management
- First aid and fire safety requirements
- Number and widths of emergency exits
- Audience parking
- Guest parking
- How the audience will be arriving/leaving (train, bus, car, foot, dropped off)
- Any other major events occurring on the same day – in the same local area or city
- When the audience will start arriving
- How the performers will access the event
- Secure accreditation system
- Whether police presence is required
- Suitability of site design to minimise threats to enjoyment and safety
- Audience demographics
- Suitability of event attractions, amenities and services for the needs of the audience
- Audience capacity and ability of the venue to safely accommodate this figure when considering temporary structures, sight lines and evacuation requirements

3.5. Event delivery

In the delivery stages of an event the following criteria should be addressed to minimise the likelihood of crowd-related incidents:

- Ensure a pre-event safety checklist has been produced which is wholly relevant to your event. This checklist should be completed by a competent person and discussed with the PCBU
- Ensure all staff are briefed on the event emergency procedures, amenities, running order and site layout
- Ensure temporary structures are sited correctly
- Ensure any signs are positioned to enable uninterrupted views
- Ensure all plant and equipment are secured away from the public

- Ensure crowd monitors are in position for incident reporting and management
- Ensure suitable and sufficient medical and fire staff are on site and in position
- Carry out pre communication tests for hand-held devices and public address systems
- Ensure all parties are aware of communication procedures for the event
- Test CCTV (where applicable)
- Where applicable, ensure crowd flow times are understood
- Ensure all completion certificates/engineer reports are finalised
- Ensure all staff and contractors are clear on who can authorise the event to be opened to the public and who has the authority to temporary halt, or if required evacuate the event site and shut the event down
- If the event has reached capacity, position event staff, signs and barriers to prevent persons without tickets accessing the event or mingling outside
- Review, consult and adjust control measures as required on site

3.6. Review

After an event, the following criteria should be reviewed in consultation with relevant parties:

- Incident reports and outcomes including near misses
- CCTV footage (where applicable)
- Effectiveness of the control measures
- Identification of pinch points, bottlenecks or extensive queues
- Were flow rates on entry acceptable?
- Were there any levels of increased density?
- Could the food, beverage and amenities been positioned better to reduce density levels within the event site?
- Was the scheduling appropriate for the demographics attending or was there conflict?
- Medical incident data
- Ejection and arrest data (where applicable)
- Customer service
- Areas for improvement
- Occasions of non-compliance
- Any new hazards or risks identified

3.7. Documentation and records

The following documents and records should be created, maintained and kept on site during an event:

- Event-specific crowd management plan
- Crowd and overall event risk assessments
- Event safety management plan
- Event security roster
- Event communication plan
- Pre-event security checklist – signed
- Event security briefing
- Event running order
- Evidence of consultation
- Engineering certification, work permits and sign-off records.
- Contingencies

These documents may be requested to be sighted by other PCBUs for verification or clarification and should be readily available at all times.

4. Built Environment

A built environment or an engineered structure is a building such as a stadium, arena, theatre or other permanent structure, which has designated entrances and exits.

Even though these venues are typically well established and are purpose-built for staging events, each event must be considered on its own merits as differing crowd demographics present differing crowd-related risks.

An example of this may be a reserved-seating function with a young audience who may be attending their first ever concert, versus an older, alcohol-drinking crowd, with vast experience of concerts at a general admission event. While it the same venue with potentially the same number of audience members, there will be completely different risks for inside and outside the event.

Similarly a sport fixture match between two historic adversaries, where the crowd-related incidents are well documented, versus another match where both clubs have had zero issues and pose a low level threat. Each event will be planned to encompass normal and emergency considerations but each match faces other crowd considerations that will have to be dealt with very differently.

5. Temporary Structures

A temporary structure is a portable or built-to-order structure designed for a specific event or for a number of events over a specific length of time – both long and short term. Examples include stage or performance area, marquees attached to or separate from the performance area, safety fencing, temporary toilets, merchandise and refreshment outlets, delay towers and first aid posts.

Temporary structures serve the event's requirements and add to the overall aesthetics, but if not positioned properly they can also add significant crowd related issues, including:

- Sightline issues
- Bottlenecks
- Pinch points
- Queues obstructing thoroughfares
- Reduction of available space
- Increased crowd density
- Reduced egress capability in normal and emergency conditions

6. Human Spatial Memory and Orientation

A key concern with crowds is the brain's capacity to understand and interpret signifiers in the venue that relate to ingress, circulation, safe passages and egress.

For a fan with a season ticket to a sports stadium, who watches their team from the same seat every week, their hard wiring becomes familiar with the locations of entrances, exits, toilets, bars, food outlets etc. If the same person returns to the venue, set up in a different configuration for a concert or other special event, their spatial memory becomes distorted as the venue layout is now completely different, and as such this must be considered in the crowd risk assessment.

Crowd disorientation can also occur for young people attending an event for the first time, in a new venue, or a venue that has been completely reconfigured. Multi-layout venues are particularly prone to leading to disorientation of crowds whose memory is confused by things not being as they expect.

Stress and anxiety within a crowd can have a highly contagious effect and can be avoided by engaging competent persons, well versed with crowds, to produce a suitable and sufficient crowd management plan and the associated risk assessment.

Crowd support staff should be clearly visible and easily identifiable to enable patrons to approach for directions/information and to provide reassurance and direction under normal and emergency conditions. Depending on the size of the crowd this support can range from stewards/ushers in a traditional front-of-house role, to dedicated security personnel whose

function can extend to bag checks, supervision of bars and physical crowd control.

Another issue to be aware of when planning crowd control and allowing for spacial awareness is the tendency for crowds to try to exit via the way they gained entry. This should be considered when an event is being planned if the proposed concept is to have separate exits and entrances.

7. Summary

Crowds should be carefully planned for with suitable and sufficient contingencies. Those with overall responsibility for crowds should satisfy themselves that the level of expertise they are contracting to manage crowds on their behalf is commensurate with the risks the audience is exposed to.

Consideration must be given to a range of normal and emergency scenarios when managing crowds. Event organisers should satisfy themselves that numbers of staff are based on the risks rather than a staff to audience ratio.

One item that is being required to be considered more in the current global political climate is the potential of a terrorist attack. A number of venues have been targeted in recent years and while the risk potential in Australia is low, recent events in Sydney and other events in Paris and Moscow show that anywhere the public may gather is a potential target and steps must be taken to eliminate or minimise these risks.

8. Legislation, Standards and Guidance

There are many legal considerations to be observed when planning a major event and none are more important than audience safety. From standard theatre productions where access to the bar and toilets at interval seem to be the main concern, to green field music festivals where just getting the audience into the area is fraught with difficulties, the risk assessment coming from a crowd management plan is essential.

A risk assessment is required from the earliest. Councils or other authorities will want to see them at the development application stage. A risk assessment has to remain a living document, it will need to be referred to and updated constantly.

Currently the best source of advice internationally is 'The Purple Guide' endorsed by the UK Health and Safety Executive'. This is an event guide written by the industry and it covers many aspects of crowd management. This is available by subscription at the following address:

<http://www.thepurpleguide.co.uk/index.php/the-purple-guide>

Other sources of Information include:

Local and specific guides – Worksafe Victoria

https://www.worksafe.vic.gov.au/_data/assets/pdf_file/0005/208229/ISBN-Crowd-control-at-venues-and-events-practical-occupational-health-and-safety-guide-2007-01.pdf

Local regulations from council development approvals

International best practice – ANSI E1.21-2013

Entertainment Technology – Temporary Structures Used for Technical Production of Outdoor

Entertainment Events - http://tsp.esta.org/tsp/documents/published_docs.php