Event Safety Guide

2011
Swedish Civil Contingencies Agency (MSB)

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2.1.3
Fourth paragraph, should read: The Work Environment Act (Chapter 3 7a§).
Last paragraph, should read: In 2012 an international standard, ISO 20121, about the management systems for sustainability at events that is, organizational structure, roles and responsibilities, planning, operations etc, was introduced.

2.2
Permit for explosives including pyrotechnics: An organizer of an event seeks authorization to handle explosives in the municipality, after an amendment of the Act on flammable and explosive products in 2010. Those who use explosives in an area where authorization is required under the Public Order Act also needs to seek permission from the police. The municipality also tries permission for handling explosives regarding use, storage and marketing. The police are still handling trials for permits based on the Public Order Act. Such permission may be needed when explosives including pyrotechnic effects will be used. MSB handles authorization for the manufacture of explosives, and other operations that are comparable from a risk point of view.

2.2.2
After liquids, add: or permits for the use of lasers as lighting effects.

9.4.1
Box text page 120. New text: During public events a permit for the use of LPG may be required. Permits are applied for via the municipality, often the fire & rescue service.

9.4.1
New second paragraph: Handling LPG and other flammable goods over a certain amount requires a permit from the municipality. If the amount of LPG is more than 60 litres outdoors (providing that the appliance that uses the LPG is also outdoors) or more than 2 litres indoors, a handling permit is required.

9.4.1
Third paragraph deleted

9.4.1
New fourth paragraph: The person who requires the permit must in addition designate and report a person as a supervisor for the LPG at each consumption site. This person in conjunction with the permit holder is responsible for handling LPG according to the prescribed regulations. It could also be a very good idea to designate, in advance, a person responsible for removing LPG bottles to a safe place when there is a risk of fire.

9.4.1
Last paragraph: LPG users must be able to show the following, during a fire & rescue service inspection:
- The permit (if a permit is required in accordance with the above)
- Proper knowledge of LPG, the risks its use may involve, and how these should be avoided. For LPG handling inspections, the check-list in appendix B can be used.

12. 2
Add two new paragraphs: Lasers are often used as lighting effects at dance events and performances. There are different classes of lasers; and the lasers at such events are always of class 3B or 4. To use such laser effects close to an audience requires a permit from the Swedish Radiation Safety Authority. Class 3B and class 4 lasers can easily cause permanent eye injury if not handled correctly. The Swedish Radiation Safety Authority has therefore introduced a permit requirement for such lasers into the Lasers Ordinance (SSMFS 2008:14). Paragraph 6 of these regulations states that a permit is required for the use of such lasers, when their usage relates to entertainment, art or advertising.

17. 2. 2. 2
Add to list: Laser pointers of class 3B and class 4.
Foreword

The MSB (Swedish Civil Contingencies Agency) has the task of supporting society and individuals in its work to prevent and manage accidents and emergencies. This may include supporting and encouraging actors, ranging from a single individual to society at large, in efforts to take preventive measures before an accident occurs. Additionally, it is of equal importance to be able to deal with accidents and emergencies and learn lessons from these.

Sweden is experiencing an increase in the number of events that are being held, which require organisers and authorities to ensure safe and secure experiences for visitors.

The Event Safety Guide has been designed to provide guidelines for organisers, public authorities and other stakeholders on how a safe and secure event can be planned. The guide is especially relevant to music events but is also applicable to other kinds, and is based on experience gathered, advice, tips, and current legislation in this field.

The purpose of the guide is to create a consensus with regard to safety concepts, to increase opportunities for clear communication and result in constructive cooperation among the actors involved. The aim is not to devise any new regulatory frameworks for work with event safety. It is based on existing regulations that may be important to event safety. The first Swedish edition was presented in 2008 and was drawn up by the then Swedish Rescue Services Agency (prior to its merger with the MSB) in collaboration with the Swedish Police Board and the Swedish Board of Health and Welfare.

The MSB has now on its own initiative revised its Event Safety Guide, after consulting the aforementioned two bodies and gathering new experiences, hints and tips. This was done in order to provide users with a truly topical and updated guide and also because it is part of the MSB’s remit to develop and support society’s ability to manage accidents and emergencies.

We hope the guide will become a valuable tool and provide support for holding safe and secure events.

The following public authorities have played their part in these efforts within their respective areas of responsibility: Swedish Work Environment Authority, Swedish Board of Housing, Building and Planning, Swedish Electrical Safety Board, Handisam (Swedish Agency for Disability Policy Coordination), Swedish Consumer Agency, Swedish Food Administration, the Swedish Police Board, the Swedish Transport Administration, and the Swedish Board of Health and Welfare.

The project manager for the guide was Margareta Nisser-Larsson (MSB) and the revisions were made by Liveside Safety.

March 2011

Helena Lindberg
Director General
Introduction

Background to the Event Safety Guide

Towards the end of 2010 and at the start of 2011, the MSB (Swedish Civil Contingencies Agency) initiated a revision of its Event Safety Guide in order to keep the contents updated and correct as well as to improve readability. It is this revised guide that you now have before you.

Work started in 2002 when the then Swedish Rescue Services Agency (SRSA), after a government remit the preceding year, put forward a number of proposals on measures to improve and simplify communication between public authorities and organisers and improve the monitoring of incidents relating to safety, in addition to a number of other measures to improve safety at music events.

In 2004, the SRSA was charged by the government with the further development of the proposed measures “in collaboration with the Swedish Police Board and other relevant public authorities and organisations,

One of these proposals was the production of a Swedish Event Safety Guide.

The objective of the Event Safety Guide

Events are complex activities that require knowledge and good planning, and it is important that planning for safety, health and security form part of the overall planning of an event. Planning for safety must begin simultaneously with all other planning.

This guide is not intended to introduce any new regulations for event safety but to create a consensus on safety concepts and increase opportunities for clear communication and constructive relationships between the actors involved. One of its stated aims is to serve as a basis for discussion in the dialogue between organisers and public authorities, in order to promote and increase communication.

The guide can be used as a manual, a reference work, or a basis for discussion. The realisation that every event is unique and needs to be prepared on the basis of all the specific factors affecting it can never be stressed enough.

The guide represents a striving on the part of the MSB to assist organisers and public authorities to prevent risks and provide the best possible conditions for a safe and pleasant event, while ensuring preparedness, i.e., a heightened awareness of possible incidents and a readiness to deal with them.
Safety planning and safety work should be guided by the following keywords:

- Anticipation, thinking ahead about what can happen and the possible consequences.
- Readiness to act, so that key staff possess accurate information, skills and resources to complete their tasks.
- Fail-safe mechanisms so that the entire organisation functions even if unforeseen incidents occur.

The recommendations in the guide are useful for organisers who hold a position of responsibility as well as those who work as planners, employees, trainers in event safety and also licensing bodies such as the police, ambulance service, fire & rescue service, environmental protection and healthcare.

The guide recommends that organisers contact the relevant authorities at an early stage in order to jointly plan the work relating to the event. The guide deals with such matters as the features that should be included in a risk analysis and how to prepare employees with regard to how to act, who has responsibility, and who does what in the event an incident occurs.

It is hoped that with the support of this Event Safety Guide both organisers and public authorities will have a tool to allow them to plan events so that all visitors and employees will have a safe and enjoyable experience.

**Safety guide for the event build-up**

The guide is composed of eighteen chapters that cover the planning, implementation and unwinding of a musical event.

- **Chapters 1-4** are portal chapters dealing with general aspects of safety such as planning, organisation, public authorities, permits, event area and unwinding.

- **Chapters 5-13** deal with more specific aspects of planning and implementation, such as stages, camping areas, infrastructure, pyrotechnics and accessibility adaptation.

- **Chapters 14-16** deal in greater detail with those groups who (in addition to the organiser’s personnel) are involved in a traditional event, i.e., visitors, artists and media.

- **Finally, chapters 17 and 18** deal with safety during event implementation, and preparedness for serious incidents.
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CHAPTER 1
PLANNING
Events are large and complex operations, and therefore require planning. Moreover, it is essential that planning for safety, health and peace of mind starts at the same time as planning for all other aspects of the event; it is also important that safety planning has the same high priority as other matters such as budgetary planning.

For major events, planning should commence nine to twelve months before they take place. In the case of annual events, one year’s evaluation often means the start of planning for the following year’s event.

1.1 The objective of safety planning

The objective here is to achieve predictability, thereby enhancing the conditions for a safe event. It is vital to acquire knowledge of what the risks are, what might happen and what is required to ensure a safe and secure experience for the crowd and the employees alike.

This is achieved by the promoter identifying potential risks and how these ought to be managed. This risk analysis then provides a basis for devising systems in the form of a safety organisation, rules, policies, plans and practices. Finally, resources are supplied in terms of staff and equipment.

The following keywords should typify safety planning and safety measures:

- Anticipation
- Readiness to act
- Fail-safe mechanisms

The objective here is to achieve predictability, thereby increasing the probability of a safe event.

1.1.1 Anticipation

The objective of safety planning is to “think ahead”, i.e., to analyse all possible developments and incidents at the event and consider questions such as the following.

- Can this happen?
- What are the consequences of this?
- What is the best way to avoid this?

This is what is meant by anticipation.

Anticipation ought to be a guiding principle of the safety plan and safety measures at the event.

- Go through and analyse the event in advance.
- Identify, avoid and eliminate the hazards found.
- Design the venue, organisation and plans so as to provide optimum conditions for a safe event.
- Plan and prepare measures to reduce residual risks and manage any undesirable incidents. Read more about risk management in Section 1.5.
1.1.2 Readiness to act
This involves equipping the event safety organisation so that it can manage the incidents and developments that may occur. Key personnel should be informed about, and trained in, what to do in any given situation.

A readiness to act is built up as follows:

- Key personnel refers to those people who have a key function in the organisation or plan, such as the individual who is to take important decisions or be responsible for opening the emergency exit.
- Key personnel have the ability and capacity to do what is expected of them, such as adequate decision-making power, knowledge and resources in terms of time, money, staff, equipment, etc.
- Information gathering is adequate to permit of the detection of situations that require action.
- There are several fully functional communication channels to inform key personnel about what happens.

1.1.3 Fail-safe mechanisms
Everything put in place during safety planning should be guided by fail-safe mechanisms. This means that the organisation, procedures and plans are designed to work, even if things do not go as planned.

The term fail-safe implies accepting and addressing the fact that humans are not infallible. We have limitations that on many occasions make us the weakest link in a chain of actions. People can, for example, become stressed and unpredictable, which then restricts their capacity to reason. All it takes for an accident to occur is that the person who bears ultimate responsibility is distracted or otherwise becomes unable to perform his/her task.

Consequently, everything that is built up during safety planning must have a fail-safe mechanism, i.e., a safety net to guard against "the human factor".

Fail-safe mechanisms can be created by means of redundancy, clarity and simplification.

- **Redundancy.** This concept means abundance or surplus, and in this context refers to "reserve capacity", i.e., an additional capacity that makes the plan, organisation or, for example, communication network more robust and able to withstand disruptions better, without the provision of extra functions.

  One example of redundancy is to appoint two (or more) people to be responsible for the performance of an important task, or there always being a deputy for a key person who can take over if the latter, for whatever reason, cannot perform his/her task. Another example is a spare mast for radio communication, which also functions during normal operation. If the main mast goes down, the reserve mast takes over and radio communication remains uninterrupted.

- **Clarity.** A plan, an organisation or a working procedure that many people understand the same way. For all of them to work effectively together, every single one needs to know his/her own role and task, as well as the others’ roles and tasks. All material produced during safety planning should be clear and understandable to the users. Avoid jargon, slang or unclear formulations and always strive to use simple and clear language. Give all instructions, rules and other information texts a pedagogical and logical structure.
• **Simplification.** Unnecessary complexity is not unusual in plans and organisations. The more elements that there are, the more things can go wrong. If one is not careful in a stressful situation, most things that can go wrong, will. Once a plan or organisation is developed, it is therefore important to ask: How can it be simplified? It obviously does not involve the removal of important features, but merely that you should strive to remove as many potential sources of error as possible.

1.1.4 The precautionary principle

All safety planning and all safety measures should be guided by the precautionary principle. This principle means that if it is unclear whether an action or incident is safe, it is to be regarded as unsafe and is therefore:

- investigated further, and then
- made safe, or
- not implemented at all.

To determine whether something is unsafe or safe is difficult, especially if the decisionmaker lacks experience. A person responsible for event safety cannot afford to take risks. Therefore, it is always advisable to apply the precautionary principle and take the necessary measures to make the situation safe. A good rule of thumb is: the greater the uncertainty, the greater the safety margin.

1.2 Phases of an event

While the person who has the primary responsibility for the event has a vision of how it should be experienced, the safety coordinator also has a vision of event safety. The two organisations, which deal with the event and safety, respectively, work hand in hand throughout the planning process, from vision to post-event measures. They are interdependent and must be able to explain their own knowledge clearly and straightforwardly, while being acutely aware of each other’s knowledge, wishes and requirements. This dialogue is of utmost importance.

The event organisation plans the experience and the budget; the safety organisation plans the safety and security. Together they are to ensure a good and safe event.

An event, including safety measures, can be said to go through five stages:

1. **Vision:** How is the event to be experienced?
2. **Preplanning:** What is needed to achieve this vision?
3. **Planning:** How do we use our resources to achieve this vision?
4. **Implementation:** Realisation of the vision from set-up to winding up.
5. **Post-event operations:** Reporting and evaluation.

1.2.1 Vision

In simple terms, a vision is the promoter’s idea of what he/she wants to do, what the event should look like, and how it should be perceived and implemented. The vision phase aims to create an overview of what the promoter wants to achieve. Safety also needs a vision; that is, a clear picture of what the organisation strives towards and an overall goal for safety measures. It is important that the vision does not become an idealised description, and it must not be just empty words.

Nor should the vision be complicated but should merely express the overall safety objective at the event.
Example of a vision for safety measures: A high level of safety is a priority operation at the event. All safety equipment and all safety staff must observe the best possible standards. The health and safety department at the event strives for a safe, secure and enjoyable event for everyone involved, a satisfied crowd and minimal disturbance to the residents of the surrounding area. The event should be, and be perceived in safety terms as being, a professional event by everyone involved, the crowd, artists, workers, local residents, public authorities and the media.

The vision should be set down on paper, and it should be firmly supported by event management and in the documents that govern work efforts.

1.2.2 Preplanning
The preplanning aims at a rough plan and identification of those efforts that must be made in order to realise the vision.

The end result of the preplanning should both provide confirmation that the event can be staged in purely safety terms, and briefly list what is needed for this to succeed. The dialogue with the authorities should begin during the preplanning phase.

During the preplanning phase, the following aspects should be clarified:

- **Selection of an event venue.** Examine the suitability of the event area.

- **Design of the event venue.** A rough plan of the largest focal points. Read more about them in Section 4.3.1.3.

- **Resources (overall):** What resources (staff, equipment, finances, time, etc.) are needed to realize the vision?

- **Planning.** What kind of planning and plans are needed to realize the vision? When should the various stages be initiated? Collect and compile the details needed for a work schedule, cost estimate, drawings and basic documentation for procurement and purchasing.

- **Public authorities and partners.** Identify organisations, public authorities and others outside the event organisation that need to be informed or contacted.

1.2.3 Planning
Planning starts after the preplanning phase. The aim of this phase is to organise and co-ordinate resources, activities and events.

Three important aspects of planning are time, resources and results, which are interdependent. If, for example, the resources (money, materials, staff, etc.) are reduced, this will affect either the schedule or the result, or both. In order to save time, for example, more resources will need to be provided, or the result expectations lowered.

During the planning phase, it is important to work on the following aspects:

- management, organisation and staff
- permits
- risk management
- the event venue
- equipment
- safety plans and safety procedures.
Management, organisation and staff
Review the event’s need for safety staff. Set up an organisation with a management structure that meets the requirements of the event, appoint key personnel and recruit safety staff. Read more about organisation and staff in Chapter 3.

Permits
Initiate a dialogue with the licensing authorities and apply for the necessary permits. Read more about permits and public authorities in Chapter 2.

The event venue
Everything that happens and which is located at the event venue should be subject to a safety review. During safety planning, the safety coordinator should be involved with the entire process, from selecting the event venue to the location of focal points, peripheral activities, etc. The safety coordinator should also ensure that the area corresponds to the intended audience capacity. Read more about the selection and design of the event venue in Chapter 4.

Risk management
During the planning phase, the safety coordinator together with the relevant parties should conduct a risk analysis. The risk analysis will then form the basis for much of the continuing safety measures. Read more about risk management in Section 1.5.
Equipment
As is the case with the other sections of the event organisation, the safety staff need equipment in order to perform their functions. The quantity and type of this equipment will vary depending on the size and type of the event. During the planning phase, events equipment needs should be calculated and sufficient quantities of materials procured, such as that detailed below.

- Building equipment (crowd barriers, scaffolding, lighting)
- Tools
- Consumables (hearing protectors, gaffer tape, drinking mugs)
- Vehicles (cars, minibuses, quads, bikes, etc.)
- Staff equipment (safety glasses, work gloves, reflective vests)
- Fire-fighting equipment (fire extinguishers, fire blankets)
- First aid equipment (stretchers, blankets, plasters, bandages)
- Communication equipment (radio sets and accessories)
- Information equipment (information and warning signs, megaphones).

Safety plans and safety procedures
The event safety plans are drawn up during the planning phase. This may relate to general plans that deal with large segments of the safety measures as well as incident-specific plans and procedures that describe how the safety organisation should act in given situations. Read more about plans and procedures in Sections 1.4.7 and 1.4.8.

1.2.4 Implementation
During safety planning, implementation should be carefully planned.

- What will happen in terms of safety when the event begins set-up?
- What needs to be built?
- What posts should be manned, by how much staff and with what level of expertise?
- How will visitors be managed and how will the safety staff operate and act at the different positions?

The implementation phase ends with the winding up of the event.

1.2.4.1 Set-up
The set-up phase aims to establish an event venue that is ready to receive the crowd in terms of both its experience and safety. During this phase, it is important to work on the following aspects.

Siting. The safety coordinator should be involved with efforts to site stages, entrances and other structures so that the actual location is as planned. Read more about location in Section 4.3.1.

Delivery check. Has the equipment ordered been delivered? Check the quantity and quality of key equipment.

Inspection. A detailed area inspection should be made when location has been completed. The entire area should be inspected by the event safety coordinator, but it is especially important to inspect certain features.

- Crowd flow. Will the structures, barriers and signs allow a good crowd flow? Read more about crowd flow in Chapter 14.
- Emergency exits and access routes. Are emergency exits and access routes free from obstructions and readily accessible?
• **Surface.** Has weather or wear and tear from construction affected the surface so badly that it must be reinforced? *Read more in Section 4.1.2.*

• **Temporary infrastructure.** Open a dialogue with the supplier and installer. Can they guarantee that the stages and other temporary structures have been erected safely? *Read more about infrastructure in Chapter 5. Read more about contracts with suppliers in Section 11.1.*

• ** Corrections.** A detailed plan often proves to be incorrect when it comes into contact with reality. Correct any planning mistakes and shortcomings revealed by the inspections. Remember to make corrections and changes in dialogue with other parts of the event organisation.

• **Dissemination of information.** Staff ought to be updated and informed of any changes or new developments.

• **Exercises.** An excellent time to drill plans and procedures is when the area has been built up. This is probably also the last opportunity to train or drill staff prior to implementation.

• **Public authority inspections.** These are excellent opportunities to benefit from the specialist expertise of these bodies. *Read more in Chapter 2.*

• **Initial inspection.** Directly after the first admissions, it may be wise to go round and check that the different sections of the event are actually functioning.

1.2.4.2 Practical implementation

All safety measures when the event is being staged rest on three essential pillars: focus, anticipation and change of pace.

• **Focus.** The principal tasks of the safety staff are to ensure that the crowd 1) do not harm themselves, 2) feel safe and 3) have a positive experience. It is important that staff are aware of their role and their task and focus on the right things. Information, service and a friendly manner are half the job; the other half is to be observant and ready to act.

• **Anticipation.** The safety organisation must constantly stay one step ahead. Anticipation can be achieved by, for example, continuous retrieval of information, through closed-circuit television, observation points or continuous reporting by the safety staff.

• **Change of pace.** The safety organisation should be prepared to either increase or decrease the level of its measures and preparedness, depending on what happens. Both planned features and unexpected developments may result in increased preparedness. Prior knowledge in the form of artist profiles, a crowd profile, risk analysis, and information gathered about the immediate situation can form the basis for the level of measures and preparedness needed. *Read more about safety work during implementation in Chapter 17.*

1.2.4.3 Incident reporting

Keeping a logbook of incidents is an excellent means of evaluating resources after the event. Everything from minor developments to major incidents may be of interest in the evaluation. One way to evaluate an event is to distribute notepads with pre-printed headings to key personnel and ask them to document all incidents that occur during implementation.

What needs to be reported varies, but it may be wise to note the event, place, time, any action taken, its results and who was responsible on site. On the stages it is advisable to allow stage safety manager to document all concerts, whether or not an incident has occurred.
If everyone involved in the event reports incidents in the same way, the safety coordinator can after the event compile relevant evaluation material for future events.

1.2.4.4 Winding up

In planning, winding up is often overlooked, but from a safety perspective it is important. For the promoters and the staff, the event is not over until winding up is completed.

Keep in mind that the event needs safety measures and a safety approach also during winding up: for example, equipment needs to be guarded and access control should continue even when the event is being wound up. The presence of heavy vehicles may entail an increased risk of collision. Likewise, temporary structures and equipment must be safely dismantled. Read more about access control in Section 17.2.2.1.

The following takes place during the winding up phase.

- **Actual winding up.** Everything erected during set-up should be dismantled. Draw up a checklist; in practice, you can follow the checklists from the set-up. Note what is relevant from a safety perspective.

- **Stocktaking.** Equipment gets damaged and disappears. The stocktaking provides details of what can be re-used, where the event can expect to have to pay compensation to the suppliers, and what must be re-purchased for the next event. Note what worked well or badly for future events.

- **Restoring the event area.** An event is likely to cause damage to the event area or premises. Unless otherwise stated in the lease, the promoter should seek to restore the area or premises to its original condition.

1.2.5 Post-event measures

Post-event measures consist of three parts.

1. **Compilation** of continuous incident reporting during the event.
2. **Evaluation** discussions with internal and external parties, such as employees, public authorities and local residents. Feel free to use a form for support, but do not forget about spontaneous comments.
3. **Measures** based on incidents and evaluation, which must either be implemented immediately (e.g., remedial action) or measures prior to coming events.

1.3 Preparedness planning

Ensuring a high level of preparedness is a process that starts long before the event and continues on through the post-event measures. The chart below attempts to outline the overall process. Read more about preparedness in Chapter 18.

Risk analysis is the hub of this process. For this to be relevant, some basis for evaluation is required. It provides a basis for the drawing up of an action plan for measures to minimise risk. Read more about risk management in Section 1.5.

The results of the analysis are also taken into account in the event safety plan, in the emergency plan, the crowd management plan and other general plans. Read more about the safety plan in Section 1.4.

The overall plans are used to draw up incident-specific plans designed to prevent, manage or eliminate undesirable incidents if and when they occur. Read more about incident-specific plans and procedures in Section 1.4.8.
The preparedness planning should be a living process; when reality changes, the evaluation basis needs to change, and thus also event preparedness and safety planning.

### 1.4 Safety plan

A safety plan is a compilation document that contains everything produced during safety planning. The safety plan is a living event document that describes the safety measures as they gradually take shape, i.e., “How we work with safety”.

At an event, all safety documentation can be combined and termed a safety plan, but to be of use, the safety plan should be reviewed and made educational, clear and complete.

The safety plan is probably the first document produced during safety planning. Initially it is probably not so extensive and perhaps only contains the event safety policy. However, over time it expands to include event descriptions, artist and crowd profiles, etc. The safety plan has a multitude of uses; it can, and should, operate as follows.

- **Working tools.** The safety plan ought to function as a reference book with facts about priorities, working methods, procedures, etc. It cannot provide the answer to everything but should provide support in all situations.

- **Analysis tool.** Correctly designed, the safety plan contains all the information that the safety organisation needs to analyse the event in advance.

- **Policy document.** The safety plan is a policy document. The effort that goes into drawing it up lays the foundations for safety measures. When the event begins, the objective is that the safety measures should conform to the established safety plan.

- **Means of communication.** When the safety organisation wishes to communicate with public authorities or partners during the licensing procedure or at other times, the safety plan provides an excellent means of communication. The promoter can usefully compress the safety plan into a document of three to four A4 pages that summarizes its contents. Such a summary makes it easier for the authorities and partners to rapidly acquire an overall view of event safety.
• **Evaluation basis.** When the event is over the safety plan can be used as an evaluation basis. It reflects the vision – that is, the manner in which event safety was supposed to operate. Once the event is over, you are now in possession of the facts and can see what went well, what went badly and what can be improved on subsequent occasions.

The following sections describe the topics that a safety plan may include.

• Event description
• Safety policy
• Rules and general guidelines
• Organisational description
• Risk assessment
• Area plan
• General plans
• Event-specific plans and procedures.

1.4.1 **Event description**

The event description describes the event for those who have previously not had any contact with it. It contains details of the promoter in charge, location, start time, opening hours, ending time, any liquor permits, audience numbers according to the licence, the number of tickets made available, stages with their audience size, and other general information about the event.

1.4.2 **Safety policy**

The safety policy, which must not be confused with the safety vision, expresses the overall view of safety in the case of the event or on the part of the promoter and its associated priorities.

The safety policy may, for example, deal with the following issues.

• **The overall attitude to safety at the event.** Is it a priority activity? If so, what does this imply?

• **The objective of safety measures.** What does the event hope to achieve with the safety measures?

• **Priorities within safety measures.** What kind of safety measures take priority (preventing injuries, ensuring safety, preventing rapes, reducing the number of people who sneak in, reducing alcohol consumption by minors, etc.)?

1.4.3 **Rules and general guidelines**

The promoter has a relatively free hand to decide the rules that apply to the proposed event. However, there cannot be any rules that are contrary to any law or official rules of conduct. The rules and general guidelines refer to the rules of conduct and prohibitions on which the promoter has agreed either independently, or in consultation with the authorities.

Rules and general guidelines may, for example, describe the following.

• What is permitted and not permitted to bring into the event area and the campsite.
• What age limits apply to the event.
• What actions are permitted or not in the audience area in front of the stage.
• The use of fires at any campsites.
• A minimum age for safety staff. Read more in Chapter 3, Organisation and staff.
• An alcohol policy for visitors and staffers.

The promoter has a relatively free hand to decide the rules that apply to the proposed event. However, there cannot be any rules that are contrary to any law or official rules of conduct.

Read more in Chapter 3, Organisation and staff.
1.4.4 Organisational description

The organisational description should describe the event organisation, for example:

• clearly defined areas of responsibility
• who is responsible for what
• the event resources
• the expertise level of the event staff
• where personnel are working during implementation.  
  Read more in Chapter 3, Organisation and staff.

1.4.5 Risk List

The risk list presents the risks identified by the promoter and measures to minimise them. In the safety plan this is based primarily on the risk analysis, but it should also include a summary of the risks present, those that it has been decided to address and the remedial measures taken. The summary aims at making it possible to present an overall picture of the event risk management.  
Read more about risk management in Section 1.5.

1.4.6 Area plan (map)

The area plan is a detailed map showing all parts of the event and the surrounding areas. If there is a campsite at the event, this should also be sketched in on a map. Furthermore, it may be a good idea to provide the area plan with a grid and coordinates so that things are easier to find.

The area plan should include the following items.

• focal points such as stages, entrances and exits
• peripheral activities such as vendors, alcohol outlets or an amusement park
• roads, transport routes and parking
• area gates, fields and other parts of the event that need to be accessible
• access routes for emergency vehicles, evacuation routes and emergency exits
• areas for official operations – a first aid area, management site, assembly point for emergency vehicles, etc.

1.4.7 General plans

General plans deal with different major functions, and are intended to provide an overview of a situation. For example, a emergency plan relates to the event preparedness for serious incidents, while a crowd management plan describes how it envisages dealing with crowd flows and potential problems associated with these. Other comprehensive plans include implementation and communications plans.

A general plan assists the promoter in determining whether there are problems related to the situation that have to be resolved. In this case, it can be a good idea to draw up an incident-specific plan. Issues that have emerged during the production of the crowd management plan can, for example, culminate in an crowd management routine.

1.4.7.1 Emergency preparedness plan

A emergency plan is a compilation document that describes the event preparedness for accidents, serious incidents and crisis situations. The emergency preparedness plan states the event safety precautions in the form of, e.g., first aid measures, staff resources and fire materials as well as how the event will
function in the eventuality of a serious accident, for example, co-operation with public authorities and which emergency plans have been drawn up. Read more about emergency plans in Section 18.3.

1.4.7.2 Crowd management plan
A crowd management plan is a tool to ensure that event crowd flows do not represent a risk to visitors or staff. It allows the promoters to “run” the entire event in advance, so that it can be seen what might happen and what can be done about it.

The crowd management plan consists of two modules, one relating to analysis and the other, to management. The analysis takes a snapshot of crowd movement patterns and the conditions at the event venue so that the crowd movements do not cause problems. Those areas or situations where the crowd flow is not sufficiently safe are then remedied in the management module, either by adapting the event area to the expected crowd flow, or through measures to change the crowd movement patterns. Read more about crowd management plans in Section 14.5.

1.4.7.3 Communications plan
A communications plan is a good means of ensuring an overview of what information needs to be disseminated and how it should reach visitors, the media, safety staff, event staff, partners and public authorities, as well as the available communication facilities. The communications plan ought to establish the importance of consistency in information disseminated through various methods. It should also specify where signs, notice boards, large video screens, and more should be located.

A communications plan should show the following:

- what information should be disseminated to the audience (and through what channels) before and during the event
- what information should be communicated in an emergency and also
- who should disseminate it and through what means of communication
- what information will be disseminated to safety staff
- what information will be disseminated to public authorities
- how information to the media should be managed
- a description of any visitor information centre.

It may be wise to prioritise the information to be disseminated. One way of doing so is to answer the following questions that ask “What is ...”.

- **good to know?** (e.g., where to buy T-shirts during the event)
- **necessary to know?** (e.g., if it is permissible during the event to light a fire at the campsite)
- **crucial to know?** (e.g., how to leave in the event of fire)

Information activities should be designed based on the answers to these questions. Read more about good communications in Section 3.5, about audience information in Section 14.4.3, and about how to tailor emergency information in Section 18.4.2.

1.4.7.4 Implementation plan (schedule)
An implementation plan is drawn up to facilitate safety measures during event implementation with all that guarding, set-up and winding up involve. When it is time to initiate the practical phase of the event, many things will happen during a brief period. The implementation plan is a schedule whose objective is
that operations are performed in the right order and at the right time, without
the promoter overlooking or omitting anything.

The implementation plan should be easily understandable and designed so that
you can see what has begun, is completed or has not yet commenced. An imple-
mentation plan should include the following:

- A detailed plan of what is to be done, who is responsible for this being
  performed, who performs this, and also how long this takes.
- A detailed plan of what is to be monitored, when this is to be monitored
  and who is responsible for this being done.
- Necessary information on those control functions that verify that the above
  tasks have been performed.

There should always be reasonable margins for error in an implementation
plan. Things seldom go exactly as planned, so in order to achieve good results
there should be margins in the form of extra time and extra resources to be
deployed when conditions change. A good rule of thumb is: the greater the
uncertainty, the greater the safety margin.

1.4.8. Incident-specific plans and procedures
An incident-specific plan is often found as a tool in a general plan and it is some-
times also termed a procedure. The difference between a plan and a procedure
is that plans are in place to manage incidents which may occur, for example, an
evacuation, while procedures exist to deal with such things that will definitely
happen, and sometimes several times, e.g., a crowded entrance or movements of
larger crowds.

The purpose of the incident-specific plans and procedures is to make a poten-
tially dramatic event as undramatic as possible. Dramatic events often involve
people becoming stressed, with impaired, or at worst, complete loss of ability to
think and act. Incident-specific plans and procedures are aimed at the organisation
and other interested people knowing in advance how they ought to act in a given
situation and that they will act following a pre-determined method in such
situations.

Some examples of incident-specific plans and procedures are as follows.
- a pause routine for concerts. Read more in Section 17.5.5.
- crowd management procedures. Read more in Section 14.5.1.
- emergency plans. Read more in Section 18.3.1.

All incident-specific plans and procedures should be made operational and fail-safe.

1.4.8.1 Making a plan operational
Making a plan operational ensures that it can be transformed into reality. If the
plan is a thick document with a lot of text, it will in actual fact almost certainly
remain on the shelf and never be read, understood or practised, and when the
incident occurs for which the plan was drawn up, there will often be no time to
read it or explain it.

Making a plan operational requires the following.
1. making the plan fail-safe (see below)
2. disseminating to all concerned parties in the organisation
3. clarifying the plan through personal operational instructions
4. practising the plan.
Every person who performs a key function in the plan must have their own brief but clear documents with their specific tasks. A good idea is for key people to have their tasks written down on a small laminated badge or sheet of paper that is worn around the neck. Once the plan has been activated, they will only need to read this.

1.4.8.2 Making a plan fail-safe

An incident-specific plan should be made fail-safe, i.e., it must not fail because of mistakes by individuals, or because things do not always go as planned. A plan can be made fail-safe in several ways, some of which include the use of redundancy, clarity and simplification.

- **Fail-safe through redundancy.** Redundancy here means “reserve capacity” – that is, no additional power or functionality is provided, but the plan becomes more robust and withstands disruptions better. There should be a surplus of resources and information opportunities that can be brought into use if this should become necessary. These resources may not be booked in advance or used routinely. In practice, redundancy implies that critical tasks such as activating the plan, SOS alerts, opening evacuation routes or manning key positions depend on several people and never on a single individual. One example of redundancy is to appoint two (or more) people to be responsible for the performance of an important task, or there always being a deputy for a key person who can take over if the latter, for whatever reason, cannot perform his/her task.

- **Fail-safe through clarity.** The goal is that everyone who reads the plan will interpret it the same way; since those doing so will be under stress, it is important to strive for as much clarity as possible. Avoid jargon, slang or unclear abbreviations. Always clarify anything that can lead to a misunderstanding. The goal is that everyone who reads the plan will interpret it the same way. Another way to make the plan clear is to use code words. See section 1.4.8.4 below.

- **Fail-safe through simplification.** A plan should never be more complicated than necessary. The more complicated the plan, the more sources of errors and misunderstandings there are. Once the plan has been drawn up, it is important to consider how it can be made simpler and then remove as many potential sources of error as possible. Always ask the question: How can it be simplified? Fail-safe through simplification does not involve the removal of important features; merely that one should strive to remove as many potential sources of error as possible.

1.4.8.3 Escalating the incident-specific plan

The aim of the incident-specific plan is, as noted above, that all or sections of the organisation will work using a predetermined and practiced method. One can thus effectively undertake a more or less complex task, and make dramatic incidents less dramatic, although there is obviously no escaping the fact that they always still mean drama and stress for everyone involved.

One way to render the activation of an incident-specific plan less dramatic, for both the decision-maker and the other staff, is to “escalate” the plan, i.e., to gradually prepare the organisation for activation, which is the final stage on the contingency scale. This approach prepares the organisation step by step. Should the situation resolve itself, it is always possible to revert to a previous step in the plan. It is better to act early, and then de-escalate preparedness than to “wait and see” and thus act too late. A contingency scale can be structured as shown below.
Escalation of an evacuation plan to preparation status may, for instance, mean that all those who are to open evacuation routes make their way to them, that those who are to rendezvous with the emergency vehicles get themselves to the access route, and the person who will speak from the stage gets ready in the wings with a microphone and script. All staffers ought to be aware of their position on the contingency scale and be in complete preparedness for the next step, which should be prepared with people in place even before orders have been issued to implement it. Being one step ahead reduces the stress burden and plan activation thus becomes simpler, faster and safer.

Incident-specific plans that start as the result of a serious incident can however rarely be escalated, as usually there is no time or opportunity for such foresight, but by identifying the developments that can lead to serious incidents, a high level of preparedness can still be ensured. Incidents rarely occur without some sort of prior warning.

1.4.8.4 Code words in incident-specific plans
When an incident-specific plan is to be initiated, there is no room for misunderstanding and often no time to communicate with the relevant people or organisation and explain what has happened and what must be done. Such messages can easily be misinterpreted, especially in a stressful situation.

The use of a code word can be an excellent way to increase the clarity and efficiency of a plan. Examples of code words are “Bluebell”, “Red” and “Spaceship”.

In selecting code words, it may be prudent to choose words that are clear, easy to hear and which do not occur in normal communication.

1.5 Risk management
Risk management aims to identify and analyse risks in the operations so they can be managed or eliminated, and it is considered mandatory for a serious promoter. Risk analysis is the core of the risk management process. In many cases it is a required supplement to the application for a police permit for the event. As an employer, the promoter is also obliged to undertake a risk assessment as well as address and monitor the risks of the event relating to the safety of the staff (AFS 2001:1 Systematic Work Environment Management, issued by the Swedish Work Environment Authority).
The risk analysis forms the basis for many of the event safety measures. Often the focus of these efforts at various events shifts according to what it has revealed.

Identifying and assessing potential risks and then continuing to work on this basis is an excellent means of raising risk awareness and understanding throughout the organisation. The information obtained from a risk analysis forms the basis for the general plans of the event, above all for the incident-specific plans that need to be drawn up. The risk analysis can also point to the preventive measures that it is applicable or necessary to take.

1.5.1 Work prior to a risk analysis
Before a risk analysis is undertaken, its objectives must be defined, an analysis group appointed and material for the analysis collected.

1.5.1.1 Defining objectives
It is important to formulate clear objectives so that the analysis efforts can be undertaken efficiently and be evaluated. The objective description should define the following.

- The aim of these efforts and what they should result in.
- The decisions to be based on these efforts.
- Delineations, e.g., with respect to
  - The risks to be taken into account (personal, environmental, financial).
  - Time limits, the timeframe that applies.
  - The phases of the duration of the operation that are to be considered (construction, operation, winding up).

The risk level should be linked to the safety vision in section 1.2.1, Vision.

1.5.1.2 Risk analysis group
The results of the risk identification often depend on the knowledge and experience of those taking part in the risk analysis.

Examples of the characteristics of a well-composed analysis group are as follows.

- Broad composition in terms of expertise
- Knowledge of relevant laws, legal provisions and rules
- Knowledge of this type of event
- Knowledge of the specific event
- Knowledge of the implementation of a risk analysis.

1.5.1.3 Basis for risk analysis
The following information should form the basis for the risk analysis.

- **Area plan.** The nature of the event venue. Read more in section 1.4.6.
- **Crowd profile.** What type of crowd is expected to visit the event? What can be expected from this particular type of crowd? Read more in Section 14.2.1.
- **Artist profile.** Which artists will perform at the event? Is there anything that the organisation must know in advance about these artists? Read more in Section 15.1.1.
- **Crowd management plan.** Read more about crowd management plans in Section 14.5.
- **Other aspects of the situation, e.g.**
  - At what time or in which season will the event be held?
- What is the nature of the surrounding areas like?
- Will any other activity be taking place in the immediate area at the same time as the event?
- What resources are there at the event?
- What preparedness exists?
- What is the co-operation with public authorities and other partners like?

- Any documentation from previous events.

1.5.2 Risk analysis
A risk can be described as a weighing together of the probability that an incident will occur and the (negative) consequences that this could conceivably have.

In relation to threats, a risk is viewed as a more tangible effect of various phenomena. For example, a poorly built entrance (threat) implies an increased probability of, and more serious consequences from, high crowd pressure at the entrance (risk).

The point of a risk analysis is not to identify all risks at the event. This is impossible to do. What is essential is to pinpoint those risks that must be managed or eliminated.

There are several methods for conducting a risk analysis. One example is shown below. A risk analysis usually goes through four stages: risk identification, delineation, risk assessment, and rectification of risks.

1.5.2.1 Risk identification
During the first phase of analysis, risk identification, the analysis group assembles and performs creative brainstorming. It is a good idea to gather a group of the key people at the event and allow them to speak freely. During risk identification, all conceivable risks are compiled, regardless of how serious or probable they are. Do not evaluate or comment on them at this stage. In risk identification no risk is too small or insignificant to be included. Example: A long queue at the entrance.

1.5.2.2 Delineation
Delineation is the second phase of the analysis where the identified risks are reviewed and filtered. Risks or factors that are clearly irrelevant are deleted. The remaining risks go on to risk assessment, where their impact and probability are assessed.

1.5.2.3 Risk assessment
To assess the risks, the probability that the undesirable events will occur, and the impact that they may have, are estimated. This can often be done through experience-based evaluations. In other cases, you may want to use statistics from past events to gauge how often such an incident may conceivably occur. Here the following should be considered.

- What might trigger the incident?
- The likelihood of the incident occurring.
- The consequences that the incident may have.

It is important to bear in mind that one should not confuse the probability that something will happen with the probability that it will have the worst possible consequences. For example, there is a high probability of somebody stumbling, but the probability of this resulting in death is very low.
In assessing the impact of an event, the severity level can be categorised as follows:

1. **Minor danger**: Transient, mild discomfort.
2. **Limited danger**: Isolated casualties, lasting discomfort.
3. **Dangerous**: Isolated severe casualties, severe discomfort, minor evacuation.
4. **Critical**: Isolated deaths, several serious injuries, major evacuation.
5. **Disastrous**: Several dead and injured.

In assessing the probability that an incident may occur, the following scale can be used.

1. Highly improbable
2. Improbable
3. Some probability
4. Probable
5. Highly probable

There are several models to link the evaluation to appropriate measures. A typical risk matrix that can be used is shown below. Assess the probability that the risk will occur and the (negative) effect that it might cause. Mark the position of the risk in the risk matrix.

<table>
<thead>
<tr>
<th>1. MINOR DANGER</th>
<th>2. LIMITED DANGER</th>
<th>3. DANGEROUS</th>
<th>4. CRITICAL</th>
<th>5. DISASTROUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Highly improbable</td>
<td>MONITOR</td>
<td>MONITOR</td>
<td>MONITOR</td>
<td>MONITOR</td>
</tr>
<tr>
<td>2. Improbable</td>
<td>MONITOR</td>
<td>MONITOR</td>
<td>MONITOR</td>
<td>MANAGE</td>
</tr>
<tr>
<td>3. Some probability</td>
<td>MONITOR</td>
<td>MONITOR</td>
<td>MANAGE</td>
<td>ELIMINATE</td>
</tr>
<tr>
<td>4. Probable</td>
<td>MONITOR</td>
<td>MANAGE</td>
<td>ELIMINATE</td>
<td>ELIMINATE</td>
</tr>
<tr>
<td>5. Highly probable</td>
<td>MANAGE</td>
<td>ELIMINATE</td>
<td>ELIMINATE</td>
<td>ELIMINATE</td>
</tr>
</tbody>
</table>

*Example of a risk matrix*

Eliminate means that the risk should be completely eliminated or forestalled by such powerful means that it can be said to be eliminated.

- Manage may mean, for example, using various means to reduce the probability of the risk occurring and/or minimising in advance the harm that the risk might cause.
- Monitor means that the risks are monitored; no direct measures to reduce the risk are undertaken.

A good principle to follow is what is known as the ALARP principle. ALARP stands for “as low as reasonably practicable” and means reducing risk as far as is practicable within reasonable financial limits. For a risk to be “ALARP”, it must be possible to show that the costs of further reducing it would be grossly disproportionate to the benefits achieved.

*Example*: The risk of a long queue is evaluated as “probable” (4) with a “limited risk” (2) as an impact. Note: Do not allow the risk matrix to restrict risk minimisation efforts. A risk matrix is a tool and a guide. In general, it should always be possible to “upgrade” a risk, i.e., the promoter ought to be able to choose to eliminate a risk that is marked as needing to be managed. However, one should be cautious in doing the opposite; a risk marked “Eliminate” should not be downgraded to “Manage” or “Monitor”.
1.5.2.4 Rectification of risks

The last stage in the risk analysis is to draw up proposals for measures that can reduce the risks or eliminate them. The goal is, through probability or impact reduction measures, to move all the risks identified from the red and yellow fields to the green field labelled “monitor”.

After a decision on reduction measures, a new assessment is undertaken as to whether the risk has been satisfactorily managed. If not, it will be necessary to return to risk assessment and then devise further measures.

<table>
<thead>
<tr>
<th>NO.</th>
<th>INCIDENT</th>
<th>CAUSES</th>
<th>PROBABILITY</th>
<th>IMPACT</th>
<th>MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long queue</td>
<td>Entrance too small, inefficient admission procedure, unexpectedly large crowd flow</td>
<td>4 - Probable</td>
<td>2 - Limited danger (high crowd pressure, irritated crowd, minor public order problems)</td>
<td>Preventive measures:&lt;br&gt;- Queuing system with holding pens&lt;br&gt;- Option to open the fence to create more holding pens&lt;br&gt;- Crowd management procedure designed and practised&lt;br&gt;&lt;br&gt;Injury limitation measures&lt;br&gt;- Inform the crowd in the queue&lt;br&gt;- Staff to organise the queue and answer questions&lt;br&gt;&lt;br&gt;Probability and impact after measure&lt;br&gt;2 - improbable / 2 - limited danger</td>
</tr>
</tbody>
</table>

Example of a risk list

Here it is important to decide whose is the risk (i.e., within whose area the risk is expected to occur), who is responsible for taking each reduction measure and for ensuring that is implemented. It is also important that all risks identified are communicated to people at the event who are affected.

A risk analysis can often be updated and re-used from year to year, unless the conditions for the event have changed too much. In most cases, minor adjustments or additions based on known changes are sufficient for large parts of the risk analysis to be re-useable. Therefore, time spent producing a proper risk analysis is a good investment.

**It is important that all risks identified are communicated to people at the event who are affected.**
CHAPTER 2
LEGAL LIABILITY, PERMITS AND PUBLIC AUTHORITIES
This chapter will describe promoters’ responsibility towards their visitors and staffers as well as the role of government agencies during an event – which demands they might make and how they can help promoters in creating a safe and secure event.

2.1 Legal liability

Since promoters receive permits from the Swedish police to hold public gatherings or events, the promoters assume a responsibility and hence certain obligations that are regulated by law.

2.1.1 Responsibility for order

According to the Swedish Public Order Act (1993:1617) the promoter of an event is responsible for the order at the event.

Therefore, it is important that promoters make sure that all suppliers or on-site vendors follow the rules and certification requirements decided on. Promoters should not be afraid to make demands on people they hire. Read more about suppliers and on-site vendors in Chapters 9 and 11.

Keep in mind that if an incident occurs outside the promoter’s area, then this is usually not the promoter’s legal responsibility. However, such events will likely be taken into account in the police authority’s assessment during the permit review for similar events.

2.1.2 Responsibility for fire safety

According to the Civil Protection Act (2003:778), owners or those with the right of use of buildings or other constructions are responsible for their own fire prevention. This means that they are obligated to make reasonably sure that there is fire extinguishing equipment, as well as other measures needed to prevent fires and to prevent or limit damage caused by fires.

The Swedish Civil Contingencies Agency has published general guidelines on fire safety (SRVFS 2004:3), in which an adequate fire protection entails also conducting systematic fire prevention work. This concerns, on the one hand, preventing a fire from starting as much as possible, and on the other what needs to work in the possible event of a fire. Fire prevention work involves both structural and organisational aspects.

Structural aspects of the systematic fire prevention work includes:

- evacuation routes
- emergency lighting
- access routes for fire & rescue service vehicles.

Organisational aspects of the systematic fire prevention work includes:

- division of responsibility
- information training
- exercises
- instructions and routines. Read more about systematic fire protection work in the Swedish Rescue Services Agency’s general guidelines (SRVFS 2004:2) on systematic fire prevention work.
In addition, promoters must also make sure that items that might cause a fire or an explosion, such as liquefied petroleum gas and pyrotechnics, are handled correctly.

2.1.3 Responsibility for work environment

Promoters are also employers, and the Swedish Work Environment Act (1977:1160) contains rules about the employer’s responsibility as regards illness and accidents in the workplace.

The basis for the promoter’s work on the event’s work environment comes from the systematic work environment commitment (APS 2001:1). Systematic work environment commitment means that the promoter examines, conducts and follows up on activities in such a way that illness and accidents in the workplace are prevented, and a satisfactory work environment is achieved. It is possible to make the situation in the work environment clear by conducting a risk analysis, for example. Read more about risk management in Section 1.5.

Certain states of affairs are further specified in the Swedish Work Environment Authority’s various regulations. These may have to be updated, depending on the findings from the systematic work environment commitment. Some examples:

- the layout of the workplace
- threats and violence towards staff
- first aid and crisis support for staff
- work at heights or on scaffolding
- work in noisy environments
- work clothes and work equipment
- heavy lifting
- staffers meals, rest and personal hygiene.

Furthermore, the Swedish Work Environment Act (Chapter 3, Section 7, 1977:1160) also regulates the coordination of responsibility when one or more business owners are active in a common area, which often occurs in the event industry. The Work Environment Act describes how the parties are to cooperate and consult one another in order to create a sound work environment.

Promoters who are unsure about what the work environment responsibility entails should contact the Swedish Work Environment Authority.

Moreover, Sweden also has a Working Hours Act (1982:673) that regulates employees’ working hours, breaks and nightly rest. For more information about this Act, visit the Work Environment Authority’s website (www.av.se).

Volunteer staff are sometimes regarded as employees, and sometimes not. This is a matter relating to Swedish labour law, which must be resolved on a case-by-case basis. Promoters who are unsure about the rules should contact the Swedish Work Environment Authority.

Work on an international standard for sustainable events, ISO 20121, is under way and introduction is planned for 2012. This standard will concerns, among other things, employer responsibility, waste management and accessibility.
2.1.4 Insurance
The promoter should negotiate suitable insurance protection for staff, visitors and material with an insurance company. Make sure to provide the insurance company with a good description of the event, and dialogue with the company in order to get the right insurance protection. All discussions should be documented in an insurance letter.

2.2 Permits
In most cases, promoters are required by the Swedish Public Order Act to apply to the police for a permit in order to hold a public event or gathering. The characteristics of the event determine whether or not a permit is required, or if a notification is sufficient. Sometimes a permit or notification is not required (see model below). The authority that issues the permit may vary, depending on where the event is being held. For example, if the event is to be held on a public road, a permit from the road maintenance authority is required.

Dance events are considered public events, while musical performances are considered public gatherings. In other words it can be difficult for inexperienced promoters to determine what kind of event is actually being arranged. Through good contacts with the police and by applying for a permit in advance, these kinds of problems can be solved.

An application model for public events and gatherings
(Chapter 2, §§ 4 and 5, the Swedish Public Order Act)

<table>
<thead>
<tr>
<th>Public Event</th>
<th>Permit</th>
<th>Permit</th>
<th>Permit</th>
<th>Permit</th>
<th>Permit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dance events, amusement parks, markets, motor races</td>
<td>INDOORS OUTDOORS INDOORS OUTDOORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public gatherings</td>
<td>Permit</td>
<td>Notification</td>
<td>Notification</td>
<td>No permit</td>
<td>No notification</td>
</tr>
<tr>
<td>Concerts, theatre, performance of artistry, cinema</td>
<td>INDOORS OUTDOORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the model, most music events without dance belong to the category of public gatherings, unless other activities take place at the event that are considered public events, such as motor races or amusement parks. This means that the promoter is not always obligated to apply for a permit or notify the police about the event. For example, concerts that are being held in an area not planned in detail, in a non-public place; do not require permits or notifications.

However, this should not matter for serious promoters, since safety should always be of highest priority. Even if a planned event would not require a permit or notification, promoters should notify the police, fire & rescue services and ambulance services about the event, in order for them to maintain preparedness within their respective fields.

2.2.1 Licensing procedure
There are a number of government agencies and organisations involved in the licensing procedure, but the licensing application is always sent to the police first, which then distribute the application for consideration. The places where referrals are most commonly sent are presented below, but there may be others (such as municipalities, the Swedish Coast Guard, Swedish Customs, harbour authorities and large companies that are directly affected by the event) depending on the characteristics of the event.
• The Police issues permits for events after having consulted other government agencies. Other relevant authorities issue permits or instructions for activities relating to the event, based on their respective area of responsibility. Depending on the characteristics of the event, these authorities may vary.

• Municipalities can issue permits for, comment on or supervise a number of circumstances. Municipalities have a fairly large degree of independence when it comes to organising their activities. Therefore, similar cases may be referred to different municipal authorities in different municipalities. The most common municipal authorities are the fire & rescue services, the environmental and health safety inspection, and social services.

• The county councils and health authorities services receive applications for consideration, so that they can assess whether the event may entail an increased burden on fire & rescue services.

• County administrative boards, in certain cases, make decisions after consulting the police on permits for motor sports events, races, or exhibitions with vehicles on roads.

Submit your applications well in advance. The deciding agency will need a reasonable amount of time for administering the matter, which means that applications for larger events often need to be sent at least a couple of months before they are held. In addition, an early application gives the promoter time to correct any remarks, which increases their chance of receiving a permit.

In order for the licensing application to be considered, a permit fee must first be paid to the police authority. More information about permit fees is available at www.polisen.se. This fee is the cost for the application to be handled by the police, and is not returned if the permit is denied.

2.2.2 Contents of a licensing application

In order to receive a permit to hold an event, promoters must show in their application how they intend to live up to their responsibility as promoters.

Applications are made to the Swedish police and are then forwarded to other government agencies for consideration. Applications should include a completed licensing application form for public events or gatherings. The application form is available at the police authority’s website.

In the application, the promoter is to clarify what type of event is being planned and provide information about location, date, time, attendance capacity and age limits for stage performances, as well as who is responsible for the event.

For smaller events, a completed application form and appendices describing the safety measures at the event will suffice. For larger events, however, the application form is only the first part of a substantially more comprehensive application. The following documents and information may be required in the application:

• Event description. What does the event include?, How many visitors are expected?, etc. Outlines and blueprints are good supplements to a written account.

• Safety plan. A safety plan is the steering document for the safety measures at the event. In addition, it is also an information document and a communication tool to be used to provide government agencies with details about how the safety measures is handled and which measures will be taken with regard to safety and order. A safety plan can also be used to account for the safety organisation, staff, risk management and plans of action. Read more about the safety plan in Section 1.4.
• **Safety organisation.** How is the event’s safety organisation outlined? How is it organised and how many people are working with safety?

• **Area map and outlines.** An area map is needed for government agencies to gain an idea of the event’s size, identify risks, and plan their own efforts. Outlines can be attached to explain incidents and activities.

• **Planned number of appointed licenced security guards.**

• **Planned self-organised medical care organisation.**

• **Planned self-organised fire safety measures.**

• **Partners.** The promoter should describe which partners are collaborating, and how. This may cover medical care, fire & rescue services, social services and more.

• **Other permits,** for example permits that have already been applied for at other government agencies and authorities – such as permits for catering or serving alcohol – as well as permits for pyrotechnics and use or inflammable liquids.

• **Certifications, permits and standards.** If a big top tent is used, for example, the promoter can demand a permit certification and present it in the licensing application.

By providing comprehensive information in the application, the police authority and the promoter can get an idea of the necessary safety measures at an early stage, not least in terms of security guards.

The police authority’s permit will state the measures which the police deems necessary in terms of security guards for maintaining public order and safety.
In addition, replies from other government agencies will inform the promoter about which measures need to be taken in order for the activities to be carried out. This may regard, for example, first aid requirements and firefighting resources which the promoter must provide.

The more information provided by the promoter in their licensing application, the greater the chance of the application being approved. If the application is rejected, the promoter can discuss with the government agencies about which aspects need to be improved in order for the application to be approved.

2.2.3 Cooperation during the licensing process

In certain cases, developed co-operation between government agencies and promoters is not implemented. This mainly applies to smaller events, but also to larger events for which neither the promoter nor government authorities have understood the benefits of planning the safety for the event co-operatively. It is important to understand that the licensing procedure is a collaborative effort – not a struggle – between government agencies and the promoter. Both parties have a safe and pleasant event as their goal.

Experienced promoters and government agencies initiate their co-operation early on in the process. Well ahead of the planned event, government agencies and the promoter meet and look through possible outcomes, which risks are associated with the event and how the parties can contribute to achieve a safe and feasible event. Solid co-operation during the licensing procedure is often the basis of a favourable co-operation during the event.

In order to clarify how the demands of different government agencies demands coincide – and sometimes conflict with one another – it is recommended that all government agencies involved are gathered during the licensing process to discuss and agree on the common demands for the event. This creates balance, consensus and a foundation for better co-operation.

2.3 Public authorities and societal functions

Personnel from the police, the medical services and sometimes the fire & rescue service are on location at most larger events. In addition, other public services may also be present. The promoter should, as far as possible, provide for the government agencies’ needs in terms of marked off areas and areas for vehicles, etc. These matters should preferably be discussed with government agencies during the licensing process.

Regular meetings with representatives from the government agencies and the promoter during the event are preferable. These can often help solve any problems that are highlighted during the event. If possible the promoter should set up a common management site where these meetings can be held. This management site can preferably be equipped in order for it to function as a management centre in the event of a crisis situation. Read more about management centrals in Sections 18.2.1 and 18.2.2.

2.3.1 Police

The police are charged with preventing, exposing, investigating and prosecuting crime. The police authority grants permits for events and decides how many appointed security guards are to be on location during the event.

The police are not a resource at the promoter’s disposal. They provide support at the event. At larger events there will often be police patrols on site who can be contacted by SOS Alarm through the police authority’s communication central, and licenced security guards.
The police can often function as advisers on matters relating to public order. Feel free to ask the police about local elements of agitation – for example, there might be gangs, drunkenness, exposed areas or similar.

For certain events, the police will charge for its guard services. For more information, please see Chapter 2 Article 26 of the Swedish Public Order Act. The appointed security guards are under the police authority’s command, but are hired by the promoter and carry out their services in accordance with their commission.

Promoters may manage their licenced security guards themselves as long as the police do not see a need for rearrangement. The reasons for such reallocation must always be communicated to the promoter. Read more about security guards in Section 3.6.

2.3.2 Medical care

Medical services have two main tasks at an event:

- take care of acute illness and injury among the audience, staff or artists, i.e. “normal illness” to be expected in a crowd corresponding to all the visitors, staff and artists
- take care of more serious injury after serious incidents during the event. This aspect of first aid efforts are described in Section 18.4.3.3.

The public medical care service are not required to be present at larger events, but the Health and Medical Services Act stipulates that the county council is to offer emergency medical care to everyone within the county council’s borders. In other words, the county council is required to “plan its first aid and medical services in order to be prepared for medical emergencies within the county council’s borders”.

The promoter can not be legally required to provide medical resources, but if the event is disproportionately large compared to the resources of the local medical services, it might be agreed during the licensing process that promoters are required to provide their own medical resources in order for the event to be held. This way, provision of medical resources will, in practice, become a condition for a permit. In addition, medical resources are an excellent form of service to visitors.

It is important that the promoter’s medical service maintains a sound dialogue with the county council, both during planning and evaluation. It is also advisable to keep statistics on all efforts made, as these will form the point of reference for the joint planning of future events. Read more about organisation of the event’s medical work in Section 3.7.

2.3.2.1 Everyday medical care

The more people that are gathered in an area, the greater the risk that someone will suffer an acute illness, injury or other ailment which requires some form of emergency medical care or first aid.

The number of people who need some form of treatment at an event varies, not least depending on the crowds composition, the type of event, the weather, lack of water and a number of other factors. The crowd profile created during planning can be of great help when assessing the required medical resources at the event. See Chapter 14 for more information on the audience.

During an event that lasts for several days, medical care needs will to a great extent be the same as for the “everyday” medical care needs, since people with
various chronic illnesses such as asthma, diabetes, heart disease or mental problems will attend the event.

Experience shows that approximately 2% of a crowd will seek some form of medical attention during an event day. Of these people, approximately 10 percent will require further treatment, and around one percent of those who sought medical assistance will require hospital care. However, most cases of illness or injury at an event are fairly easily treated.

According to statistics in a crowd of ten thousand people, a couple of hundred people will require medical care each day, according to statistics. In addition, between ten and twenty people will require further treatment and one or two will have to be taken to a hospital.

2.3.2.2 Medicine
Medicine cannot be dispensed by just anyone, but event promoters can ask a pharmacist to open a branch for non-prescription medicines. If an event has its own medical service with doctors and nurses, the doctor must issue a specific delegation to nurses so they can handle both prescription and non-prescription medicines. In other words, delegation from their ordinary everyday jobs does not apply.

2.3.3 Fire & rescue service
The promoter is responsible for making sure that the risk of fires and other emergencies is minimised during the event. According to the Swedish Civil Protection Act (2003:778), the municipal fire and rescue service is only required to take action after an incident has occurred or in the event of an imminent risk of an incident, in order to prevent and limit injury to people and damage to property.
or the environment. However, the municipal fire & rescue service is only required to provide rescue service when this is warranted with regard to the need for swift action, the importance of the object at risk, the cost of the emergency response and other circumstances. In addition, the Swedish Civil Protection Act stipulates that the municipality must ensure that fires and damage caused by fires are prevented and that they work for the prevention of other emergencies without intruding on the responsibility of other organisation’s responsibility.

In connection with the police authority’s handling of the licensing application for an event, the fire & rescue service can usually submit their views on the fire safety at the event. In addition, the fire & rescue service may conduct inspections at the event venue in order to inspect the handling of flammable goods, such as liquefied petroleum gas, to ensure it is being done safely.

The size and nature of the event, along with the distance to the local fire & rescue service, determines how much fire & rescue service resources are needed at the event. In most cases, promoters should handle the fire preparedness needed at the event with their own staff. With a well-thought-out fire safety organisation, sufficient supply of fire extinguishers and other equipment, and staff who have been trained in how to put out fires, it is usually possible to reduce or completely eliminate the need for the municipal fire & rescue services at the event. If asked, the fire & rescue service might be able to train the event staff in, for example, how to handle fire extinguishers or how to put out fires on people.

Promoters should, as far as possible, reduce the risk of fires and other emergencies at the event. Make sure well ahead of the event to reach an agreement with the fire & rescue service about the necessary measures.

The following conditions should be in order:

- Liquefied petroleum gas (LPG) and other flammable goods should be handled and stored in a safe manner. LPG might be used at restaurants and similar locations, in connection with special effects on stages and at campsites. In some cases, the handling of LPG requires a permit from, and in other cases a notification to, the fire & rescue service. Read more in Section 9.4.1.

- Functional, correctly placed fire extinguishing equipment should be available in sufficient quantities.

- Emergency exits and evacuation routes should be put in order and be clearly marked. Read more in Section 7.5.

- There must be access routes so that fire & rescue services can get through. Read more in Section 5.3.5.

- Big top tents with capacity for more than 150 people must be inspected, and the fire & rescue service may require valid test results for the level of fire resistance of the the tent fabric. Read more in Section 11.6.3.

- Any inflammable material, for example textiles on the stages, are to be inspected. The event staff should know how to use a fire extinguisher and how to put out a fire. In addition, fire prevention skills should be found on several levels of the event organisation. Read more in Section 3.4.2.

The promoter is responsible for making sure that the event has a systematic fire prevention organisation. The fire & rescue service services can advise promoters on how this should be organised, and possibly visit the event for guidance or inspection.

2.3.4 Other municipal services

The safety measures at an event involve a number of other municipal activities, besides fire & rescue service. Municipalities have a fairly large degree of
independence when it comes to organising their activities. Therefore, the same task may be referred to different authorities in different municipalities. For these reasons, it is important to seek the correct authority for guidance.

The following are the most important functions for municipal activities in connection with an event (besides fire & rescue service):

- social services
- environment and health protection
- permits to serve alcohol
- road safety and building permits.

Large events are often held on municipal land. Promoters can schedule meetings with the municipality’s various administrations before the licensing application is sent to the police. At a joint meeting promoters can get information about laws, rules, local regulations, practical details, and so on, as well as contact details for people or departments that will take part in the co-operation later on. At this or future meetings, promoters and the municipality can discuss details which will probably come up later on in the licensing process, and in this way deal with and solve problems that may arise.

Additionally, the municipality is often aware of any plans for other activities which the event might coincide with. This might result in limited resources being available for further municipal activities at that specific time, or that the event site is already being used for something else.

### 2.3.4.1 Social services

The social services generally have several tasks at an event. In addition to participating in the licensing procedure, the social services can provide psychological and social support to people who have gotten caught up in problems connected with alcohol or drug abuse, assault, etc. Furthermore, the social services are also part of the municipality’s emergency organisation, which is activated for serious incidents.

At larger events that attract a lot of youngsters, the municipality often wants to have a number of field assistants or other staffers on site. These field assistants include on-call groups who are prepared to respond in acute cases concerning minors, or staffing during the whole event. Social services is an excellent collaborative resource in all matters concerning youngsters, or when visitors get into problems and need some form of help or support.

According to the Swedish Social Services Act (2001:453), the local municipality, i.e. the municipality in which someone is present, is responsible for making sure that those who present in the municipality have basic social and financial security. In practice, this means that the social services can provide assistance if a visitor, for example, has lost their tent, money or means of getting home. However, this is subject to examination in each individual case. First and foremost, relatives are the ones who should provide assistance.

In Sweden youngsters under the age of 18 years may not be interrogated by the police without a guardian present. In cases where a custodian cannot be present, the social services may step in and be present during the interrogation.

### 2.3.4.2 Local environment and health protection office

A municipality’s environment and health protection office is tasked with making sure that events are not dangerous to people’s health. Two areas in particular are to be inspected – the performance sound-level and sanitation conditions. Read more about sound levels in Section 12.1.
• **Sanitation conditions in food serving.** Food vendors should have a valid permit, a written certificate that they are registered, or a formal verdict from the relevant environment administration/environment office that none of these are required. *Read more about food serving in Section 9.4.3.*

• **Hygiene in sanitation areas such as toilets and showers.** The Swedish environment and health protection agency checks that there is a sufficient number of toilets and that these are kept clean. It must be possible to wash one’s hands in the vicinity of the toilets. *Read more about sanitation and hygiene in Chapter 10.*

• **Drinking water.** *Read more in Section 5.6.*

• **Waste management.** *Read more in Section 10.3.*

2.3.4.3 Permit for alcohol sales
Alcohol sales permits are administered by the municipality. The people or the company in charge of the event should apply for the permit. The person who applies is also responsible for the sales of alcohol being handled correctly. *Read more about serving of alcohol in Section 9.4.4.*

2.3.4.4 Traffic safety
Start by contacting the municipality’s traffic coordinator if there is a need to close a road, lower the speed limit or put up road signs around the event. The traffic coordinator will probably know who the road authority is and who to contact. *Read more about traffic safety in Section 5.3.*

*In Sweden youngsters under the age of 18 years may not be interrogated by the police without a guardian present. In cases where a custodian cannot be present, the social services may step in and be present during the interrogation.*
CHAPTER 3
ORGANISATION AND STAFF

Photo: Magnus Nylen
This chapter mainly describes the safety organisation and staff needed at larger events, as well as basic rules and suggestions for how events are communicated efficiently within the organisation.

An organisation is a tool — a tool for clarity, simplicity and efficiency. A well-designed organisation with a developed communication culture clarifies the areas of responsibility, simplifies decision-making and makes implementation more efficient.

### 3.1 Requirements for an organisation

Events are demanding environments, where those in charge of the safety measures are responsible for the event’s safety & security as a whole. Nothing can be allowed to fall through the cracks. Decisions must be made and then communicated quickly to those who are tasked with carrying out the assignment. In order for an organisation to function optimally, it has to meet some basic requirements.

#### 3.1.1 Specialisation and delegation in an organisation

Senior managers cannot decide on all the details themselves. Instead, responsibility should be divided between management levels, where the senior manager can delegate the decision-making to subordinates. This requires competence in all levels of management – from the safety coordinator to the safety staff carrying out the assignments at the event.

It is a good idea to have a hierarchically structured safety organisation, i.e. a strictly pyramid-shaped organisational structure where decisions are mainly confined to the top. When deciding on the size of the organisation, the promoter should consider a balance between a broad organisation with few management levels and a tall organisation with many levels:

A broad organisation, in which each manager has many subordinates, could become difficult to manage as it is difficult to keep track of everyone’s work. It can also be difficult to convey information quickly.

In a tall organisation with many levels of management, on the other hand, the senior management risks losing contact with those who actually do the work. A tall organisation can also lead to a time-consuming decision process. Therefore, emergency decisions such as pausing a concert on stage should be delegated to lower levels of management, so that the group manager for that specific stage can decide such matters.

#### 3.1.2 Chain of command

Organisations that work under difficult or trying conditions – for example, the emergency medical services (EMS), the fire & rescue service, the police and the military – have a chain of command, which must not be broken. This also applies to safety measures at an event. If the senior manager gives an order, this order should be followed throughout the organisation, down to the individual staffer.

Each manager should act at their respective level. However, in order to be efficient the manager (regardless of level) needs to know what resources are available. A manager should never skip a level and manage staffers further down in the organisation directly. If this was to happen, the lower-level manager runs the risk of falling outside the chain of command, thus losing control of their resources.
3.1.3 Organisation by task
The organisation must be changed when the situation, goal, assignments or resources change. For example, if the number of visitors, number of artists, or number of days in a recurrent event grows, the organisation will also have to change. Simply expanding the organisation runs the risk of becoming a patchwork that compromises the organisation’s clarity and efficiency. Instead, promoters should overhaul the organisation’s clarity and efficiency right when the planning stage begins prior to each large event.

It might be a good idea to check the assignments and delegation of responsibility within the organisation, as well as implementing necessary changes, when the planning turns into implementation – that is, when all permits have been received and the event venue can start being built.

3.1.4 Clarity, stability and adequacy
The safety organisation is a tool that must never be allowed to make mistakes. Therefore, it is extra important that it is planned and created with clarity, stability and adequacy in mind.

Clarity. An organisation must be clear to everyone who is working within it. Otherwise, the organisation cannot achieve its purpose. As manager or the person in charge of the organisation, you should be able to outline and explain the organisation in a simple way. Some points:

- Everyone working for the organisation must know who their manager is.
- A subordinate should only receive assignments or orders from one superior; no one should have two managers.
- Everyone working for the organisation – that is, not just the key people – must know their role and what it involves. Written operational instructions should be available, in which the rights and authority of each position is stated.
- The number of subordinates under one single manager must never be so big that it creates problems with communication or coordination.

Stability. A safety organisation cannot be created with only the normal operation in mind, as it must also work in trying situations or crisis situations. Some points:

- There should always be someone in charge who can make a decision. Therefore, each key position (preferably all management positions) should have a deputy, with whom managers can discuss thoughts and decisions, and who can act as a substitute if a manager cannot carry out their duties, for example in the event of an accident. The organisation’s efficiency must never depend on just one person.
- Emergency decisions, such as pausing a gig or sending for an ambulance, should be made as far down the line of organisation as possible.
- There should be sufficient event safety competence at the mid- and lower levels in a safety organisation; it is not enough that the managers highest up have the right competencies.

Adequacy. A safety organisation must be dimensioned for the task it is designed to carry out. Some points:

- It is important that responsibility and authority are proportional. If someone is in charge of an area, this person should also have the authority to affect the area.
- One person cannot make all decisions. Superior managers should aim to delegate responsibility and decisions to their subordinate managers.
- It is important that the safety organisation receives the resources (time, money, staff, equipment etc.) necessary to solve the assigned task.
3.2 Organisational levels at an event

There are three organisational levels concerning the safety at an event:
- macro-organisation
- event organisation
- safety organisation.

The macro-organisation affects everyone involved in the event – that is, the entire event organisation as well as external co-operation partners such as the police, the fire & rescue service, medical services, and volunteer organisations.

The organisation principle for safety measures at an event can be likened to a cross, with the following organisation:

Established events often have different names for the same position, depending on the promoter. In the figure above, as in the text, the safety organisation managers are called ‘safety coordinators’, since they coordinate the safety organisation’s work with other parts of the organisation. At the level below is the head of safety, who makes sure that the safety measures function in practice throughout the event. Below the head of safety we find the group manager, who leads the individual safety workers.

The event organisation includes everyone who works with the event. This includes the safety organisation but also the organisation of administration, finances, information, production etc. Although the safety organisation carries out the safety measures, the whole organisation participates in the work, since all aspects of the organisation generate risks in one way or another. Therefore, all parts of the organisation must contribute to the safety at the event, and all staffers must have a clear understanding of event safety.

The safety organisation only comprises those who work in the event’s safety organisation. It is their task to make sure that the event is established, implemented and phased out in a safe and secure way.

3.2.1 Macro-organisation

Macro-organisation refers to all internal and external organisations involved in the event, for example:
- Police
- Fire & rescue service
- Medical services
• Other involved government agencies, such as the Swedish Transport Administration
• Other involved municipal functions, such as social services and the environment and health protection office
• Volunteer organisations and other external parties.

From a safety perspective, close co-operation should be established between the promoter and the emergency services, i.e. the police, fire & rescue service, local medical services.

The planning and implementation should preferably be transparent, so that information and decisions are communicated between the event organisation and relevant external parties, i.e. within the macro-organisation. This means that co-operation should stretch over three levels – strategy, tactics and operation. If possible, promoters should try to structure the event’s organisation with the same levels as the emergency services.

Sound, transparent co-operation has many practical benefits:
• It simplifies the licensing process.
• It facilitates communication during both planning and implementation.
• It facilitates work in acute situations during the event.

It is important that co-operation is tested in trials or exercises before the event starts. Both the work and the safety are improved if the promoter and the emergency services can agree on, and work towards, the same goal: a sound and safe event.

3.2.2 Event organisation
The safety organisation’s function is closely associated with other aspects of the organisation. If the overall organisation is not working – for example due to insufficient information, insufficient management or insufficient resources – there is a large risk that the safety organisation does not work either.

Safety is not only the responsibility of the safety organisation. All areas of responsibility affect safety, which is why a clear understanding of safety is required within the entire event organisation. The idea of proper safety must permeate the entire event. Safety should be included in the operational instructions of all areas of responsibility.

Some events have an organisation in which the event manager has an implementation manager working for him or her. The implementation manager is only responsible for the implementation of the event, but not necessarily for planning, etc. The implementation manager’s task is to focus completely on the practical implementation of the event. If there is an implementation manager, the safety coordinator should be part of this function.

3.2.3 Safety organization for the event
The event’s safety organisation is a safety function that is integrated in the promotion. An integrated safety organisation is an excellent way to prevent and solve most safety problems without burdening the police, fire & rescue service or the medical services.

It is important to emphasise that the integrated safety organisation is a supplement to the police, fire & rescue service and the medical services – never a substitute.
An event’s internal safety organisation should include the following:

- Crowd safety organisation with hired safety staff
- Licenced security guards
- Medical personnel.

The safety organisation should be represented in event management – in part to receive information at an early stage, and in part for it to adapt to new conditions or to affect the design of the event.

Safety measures are about creating safe and secure events – not solely during performances, but for the event as a whole. A good event consists of good attractions and a good atmosphere. The atmosphere is also the responsibility of the safety organisation.

In Section 3.3 there are examples of possible outlines for an internal safety organisation. The number of management levels and managers can vary depending on the size of the event and its prerequisites, as well as depending on the number of employees in each function. In addition, the terminology for the different positions also varies depending on the event.

Try to design an organisation that does not have to change in the event of a serious incident. Such an adjustment is unnecessary and will lead to precious time being lost for those involved.
3.3 Roles in the safety organisation

Management roles that might be included in a safety organisation are listed below. Keep in mind that these terms may vary, depending on the event.

<table>
<thead>
<tr>
<th>ROLE</th>
<th>MANAGEMENT</th>
<th>WORK FOCUS</th>
<th>RESPONSIBILITY, FOCUS &amp; DECISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety coordinator</td>
<td>Co-ordinate the safety measures between the integrated safety organisation and event management as well as external parties, such as the police, fire &amp; rescue service and the medical services.</td>
<td>Strategic event safety management.</td>
<td>Responsible for planning safety at the event. Overview of the event's safety, including the macro-organisation.</td>
</tr>
<tr>
<td>Head of safety</td>
<td>is in charge of safety measures on site during the event.</td>
<td>Tactical management based on the strategy the coordinator has decided on.</td>
<td>In charge of the implementation of the integrated safety measures. Overview of the practical implementation of safety measures.</td>
</tr>
<tr>
<td>The group manager</td>
<td>is the supervisor of teams who carry out different tasks, for example in stage pits, at the campsite or at the entrances.</td>
<td>Operational management, based on tactical safety measures decided on by the manager.</td>
<td>Responsible for safety within the assigned area. Detailed knowledge about the assigned area.</td>
</tr>
<tr>
<td>Other staff</td>
<td>includes employees who work on for example pit work, access control, inspection, or patrols.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Strategic management refers to long-term, extensive planning and an implementation of safety measures for a broader purpose than merely tactics. Strategic planning means, for example, overall direction and requirements for the work, priorities and safety policies.

Tactical management is based on the strategy, and focuses on the planning and implementation of prerequisites for the event’s practical implementation, such as delegation and positioning of staff and other resources.

Operational management refers to the management of practical implementation – i.e. implementing the tactical planning, such as relocation of staff or the opening of additional entrance pens.

3.3.1 The safety coordinator - strategic planning and management
The safety coordinator is a central person in the organisation. It is the safety coordinator’s task to maintain contact with both lower and higher levels of management, as well as maintaining a dialogue with external safety partners such as the police, the fire & rescue service and the medical services and others. In short, the task is to coordinate the safety measures of all parties involved.

From a legal perspective, the person responsible according to the police permit is the one ultimately responsible for the safety at the event, who in general is the one responsible for the entire event. The safety coordinator is the person to whom the event management has delegated the responsibility for safety. This should be made clear in the written operational instructions, along with the coordinator’s responsibilities and authority.

Internally, the safety coordinator is the one who in practice is ultimately in charge of safety. The safety coordinator should be high up in the event’s organisation, for example one step below the event manager and on the same level as those in charge of finances, bookings and similar.

The connection between strategy and tactics is important. Close co-operation between the safety coordinator and the next management level up in the safety organisation (i.e. the head of safety) facilitates and improves safety measures.

The safety coordinator decides the event’s safety strategy and outlines clear goals for the head of safety to achieve. However, the safety coordinator is also responsible for the head of safety’s prospects of achieving these goals, i.e. the resources and the authority to make decisions necessary to complete the task. Therefore, it is important that there is a balance between responsibility and assignments on the one hand, and mandate and resources on the other. Those assigned a task must also be given the tools to complete it.

The safety coordinator is the one who is ultimately in charge of the safety organisation. However, the coordinator should consult with and rely on the head of safety as often as possible, in order to ensure that the decisions are feasible in practice. In certain organisations the safety coordinator and the head of safety is the same person – provided that skills and work load allow it.

3.3.2 The head of safety - tactical planning and management
The tactical, and to some extent operational, safety measures at the event are led by the safety coordinator’s second-in-command, the head of safety. In addition, it is the head of safety who decides which measures are feasible in practice.

The safety coordinator functions as an initial filter between the event’s management group and the safety organisation. The head of safety helps the safety coordinator inform the event management about which measures and
resources are required in order to safely implement various programme items. If the safety coordinator or the event management cannot provide the necessary resources, then the programme items should not be attempted. The head of safety should have the final say in these matters, and should not be encouraged to attempt to implement something with insufficient resources.

Furthermore, the head of safety’s work should also include tactical and operational contacts with the emergency services, volunteer organisations, and other parties participating in the practical work.

The head of safety’s responsibilities stretch across the entire event. It is a demanding role, and may need to be supported by one or more additional functions at larger events. These help functions are tailored according the needs of the event and the head of safety. They often assist with consultation or reporting; that is, they do not have a mandate to make decisions and often lack subordinates. The following are examples of help functions a head of safety might use:

- **Deputies.** A sounding board to the head of safety, who could also be delegated responsibility for tasks when the manager is busy. If the head of safety cannot fulfil his or her assignment, for example due to injury, meetings, absence or other reasons, the deputy assumes their role.

- **Crowd manager.** This person focuses solely on the crowd management, in order to create a basis for decision by the head of safety, by means of knowledge and predictions of audience behaviour. Read more about crowd management in Chapter 14.

### 3.3.3 Group managers - operational planning and management

Under the head of safety are a number of group managers responsible for different areas. The group managers may be divided according to their tasks or their geographical area – for stage safety manager for each stage, patrol group managers for various geographical areas, entrance managers, or campsite group managers. The group managers are in charge of the safety organisation’s workforce.

All group managers should also be given the information, authority and resources necessary to carry out their tasks. Group managers must have a clear understanding of the situation at any time, and always be available for communication or decision-making. This means that group managers must not be distracted by non-management tasks such as carrying audience members out of stage pits, or searching visitors at the entrance.

### 3.4 Safety staff

Safety staff – that is, everyone in the safety organisation besides security guards and medical service staff – are employees who work with crowd safety.

Many events refer to their safety staff as guards, but it might be a good idea to differentiate between the event’s own safety staff and the licenced security guards who are required according to the police permit. In order to make the organisation clearer, it might be suitable to only refer to licenced security guards as guards. Non-commissioned workers who work with safety should instead be called safety staff.

### 3.4.1 Competence of safety staff

Personell without an official appointment for their post and who are working with safety should insteda be called safety staff. For example, the staff working
within the event’s medical care service should be qualified doctors or nurses, volunteers from medical care organisations should have relevant training, and licenced security guards should be required to have approved training.

In Sweden there is no form of formal approval or certification for the event’s own safety staff, which means that the promoter has to make sure that their safety staff has the competence the task requires.

The competence the safety staff needs varies depending on the type of event, and on the various roles of the staff. For example, there are significantly greater demands on competence among safety coordinators than on staffers who control the access to a gate. An overall description of the required competence for the safety staff at an event is presented below.

1. Understanding and knowledge of basic facts, such as terminology, how an event works, central roles and areas of responsibility. In addition, the staff must understand the role of the safety organisation, their own role and which work assignments the role comprises. They should understand and be knowledgeable about how an audience acts and reacts in different situations. They should also know how safety staff should, and should not, act.

2. Awareness of the situation, for example what risks an event or a concert may entail, what warning signs to look for when carrying out the task and which preventive measures may reduce the risk, etc.

3. Practical competence to carry out the task, which comprises most aspects; such as how to lift a heavy person without injuring them or oneself, or how to act if someone becomes threatening.

3.4.2 Safety staff training

It is important to train the crowd safety staff – especially staffers who have not worked with event safety before. However, since all events differ in terms of working methods, safety visions and work assignments, it might also be a good idea to offer training to experienced staff as well. When the event starts, the entire crowd safety team should have received training in order to meet the competence requirements stated above.

Examples of suitable forms of safety staff training are provided below:

- **Training in basic event safety.** Most of those who work with events must understand their role, the role of the safety function and how this all fits together. This includes, for example, an understanding of the term safety, of the risk profile at an event, of what the most common causes of accidents are, of misconceptions of how people at events behave, legal responsibility, and so on. This understanding is particularly important if the person has a management position in the safety organisation.

- **Training in pit work.** Staff who work in stage pits have to understand their assignment and how to carry it out in practice. This includes knowledge about safety preparations, professional behaviour and audience management, risks and signals to look for in the audience, how to act in specific situations, how to lift people over the crowd barrier, how to handle ‘crowd surfers’, and how to act in emergency situations.

- **Training in firefighting.** All crowd safety staff who are to act in the event of a fire should receive basic training in firefighting. This includes knowledge of how to use a fire extinguisher and a fire blanket. The local fire & rescue service can provide basic training in firefighting. There are also other providers of training available.
• **First aid training.** Besides the event’s medical service staff, it is a good idea to have safety staff who have received first aid training, both at the event area and at the campsite. At areas that are far away from the medical services there should always be someone who has received first aid training available.

• **Communications training.** In order for communications within the safety organisation to function, it is important that staff carrying communications equipment are able to operate these and knowledgeable of words of command, radio discipline, etc.

• **Information about the current event.** Besides training, the staff needs to be updated on the event in question. Therefore, internal information is important.

All safety staff should be given a thorough run-through of:

– Organisation – what is my assignment and who is my manager?

– Event area – where are the stages, entrances, emergency exits, fire extinguishers etc.?

– Schedule for the event – what is scheduled to happen and what effects can we expect?

– Routines and plans – what is the purpose of the plan and what is my task according to it?

The audience and artist profile should also be made available to the staff, either in its entirety or in a shortened version. Read more about audience profiles in Section 14.2.1. Read more about artist profiles in Section 15.1.1.

### 3.4.3 Safety staff dress code

The safety staff should always wear appropriate clothing for the task they are expected to carry out. In addition, it is important that all safety staff is dressed in a uniform manner, so that they are easy to recognise and to avoid confusion among visitors as to who they can turn to when in need of assistance. It may also be a good idea to choose a colour or pattern that makes the safety staff easy to spot.

Staff who direct traffic or who work in areas where they might encounter traffic should be provided with a reflective vest. Try to obtain reflective vests that differ from police and security guard vests in terms of colour, in order to avoid confusion. Reflective vests may also be used in other parts of the event where the safety staff can benefit from being seen more easily, for example at the campsite or when patrolling the event venue.

In accordance with the Work Environment Act, employers are to provide their staff with gloves, work shoes, aprons and other types of safety gear needed for the safety staff to carry out their assignments. Safety staff at events are often provided with a T-shirt, a jacket or a reflective vest. This means that they are often dressed in a combination of a “uniform” and civilian clothing. It is important to consider whether the safety staff’s civilian clothing sends out the right signals. Promoters should ask their staff to avoid using clothing that in certain contexts may be seen as threatening or offensive by the visitors, such as camouflage trousers, clothes with political messages, dark sunglasses or torches that look like batons. The safety staff are supposed to help and assist visitors, not to be seen as threatening.

The key words for safety staff are calm, lack of prestige, attentive, and communicating team worker. The safety measures are more about helping others than being noticed.
3.4.4 Safety staff recruitment

Aim to bring in experienced and trained staff; when it comes to group managers and key people this is more or less a requisite. Make sure to collect references from other events, and find out how these events view the safety measures.

Inexperienced staff should, as far as possible, be mixed with experienced staff. In addition, it is important to recruit people who have the right personal characteristics. Safety measures are a service function, where the key words should be calm, lack of prestige, attentive, and communicating team worker. The safety measures are more about helping others than being noticed.

The minimum age for safety staff is 18 years, although it is recommended that the staff is at least a few years older. It does not hurt if the crowd safety staff is a couple of years older than the visitors. The goal is for the audience to perceive the safety staff as a welcome feature – safe, trustworthy and a positive part of the event. However, please note that too great an age difference might have the reverse effect.

It is a good idea for safety staff to function as models, for example in an evacuation. It is also good if the audience can relate to the safety staff, which is made easier if the staff is seen as equals and also seem to be having a good time, even if they are on the job at the festival. However, this should not be taken too far – the staff should not be clowns; rather the audience must obviously feel confidence in the safety staff.
3.5 Internal communication

As regards internal communication, there are three types of information:

- Strategic information – i.e. plans, description of the organisation, analyses
- Tactical information – i.e. schedules, operational instructions, rules, policies, working methods etc.
- Operational information – i.e. real time information of the situation or changes made to plans or the situation.

The staff’s need for information at an event varies depending on their task. However, a rule of thumb is that the more information staffers have, the more involved and independent they are.

3.5.1 Basic rules for communication

The purpose of communication is to convey information so that it is received, understood and (usually) put into practice. Good communication is not only important for the audience and collaboration partners. It is also a powerful and indispensable management tool, and also the backbone of all safety organisations. In order for an organisation to be flexible and efficient, good internal communication is required.

It is often not enough to merely send out the information in order for something to happen, as the information has to pass through several steps in order to reach its goal. If any one of these steps fails, the information will not achieve its intended goal – that is, that the desired action is taken. In these situations, there has been a breakdown in communication. The following are examples of breakdowns in communication:

- **The information is not sent out.** This can, for example, be a lost sign, a broken radio or a missed broadcast of some sort.

- **The information is sent out – but not received.** This could, for example, be an obscured sign, or an absent or an inattentive recipient.

- **The information is sent out and received – but not understood.** This can, for example, be an indistinct sign, a poor choice of wording, a complicated explanation, or information lost during transmission.

- **The information is sent out, received and understood – but not remembered.** This can, for example, involve the communicator failing to express the importance of the information so that it is remembered by a stressed recipient.

- **The information is sent out, received, understood and remembered – but no action is taken.** This can, for example, be information that is sent out too late, or where the recipient lacks the resources (physical or knowledge-based) to carry out the requested task.

In order to prevent breakdowns in communication, the organisation should always aim to achieve up-to-date and fail-safe information adapted to the recipient.

3.5.1.1 Up-to-date communication

Information needs to be up-to-date; what was true yesterday is not necessarily true today. Therefore, it is important that the information is communicated to the relevant parties as soon as possible. Fast communication is facilitated by a good communications system, i.e. an efficient communications method. Read more about internal communication in Section 3.5.2 and about radio communication in Section 5.1.
3.5.1.2 Recipient-adapted communication
It is important that the information reaches the intended recipient. Therefore, the information should be adapted to the recipient both in terms of scope and wording. For example, the information about the individual staffers’ work assignments must be complete, while it may be less in-depth for other aspects of safety measures and their overall purpose, in order to maintain focus on the individual role.

In addition, the information should be adapted to the recipient’s knowledge level. Terms as ‘front of house’ should not be communicated to the audience. Instead, you should use expressions such as “Front of House – i.e. the black tent in front of the stage”. (Front of House is the mixing site in the middle of the audience area, which is often covered with black fabric).

3.5.1.3 Fail-safe information
Making sure that the information is fail-safe is vital for a sound communication. Unclear, insufficient or complicated information increases the risk of information being overlooked or not resulting in action. Being fail-safe involves aiming for clarity, redundancy and simplicity in the communication. Read more about being fail-safe in Section 1.1.3.

3.5.2 Communications systems for internal communications
Good communication at events where staffers are often far from one another requires one or several stable technical systems.

3.5.2.1 Communications radio
A communications radio is, when operated correctly, a great communication tool for different types of events. A communications radio system enables simple, fast and stable communication. In addition, radio communication facilitates mass information; where one single broadcast can reach everyone who listens to a channel. It is also possible to join an ongoing conversation without encountering an busy signal. Read more about communications radio and radio networks in Section 5.1.

3.5.2.2 Telephone
Mobile phones are rarely sufficiently stable when many people are calling at the same time within a small area. They might be operational at large events if everything is going according to plan, but if something were to happen and everyone tries to call home at the same time, the system will often break down. In other words, mobile phones can be used as a supplementary tool, but should not be regarded as a reliable means of communication. Landlines do not have the same risk of breakdowns as mobile phones.

3.5.2.3 Couriers
All technical systems can break down. Therefore, it might be a good idea to have couriers as a backup: a staffer who is sent out with a written or verbal message. Couriers can also be used as observers who walk around the venue and see how things are going. The benefit with this system is that you can get a first-hand account of what is happening, as opposed to radio communication with group managers. This is valuable when you want to assess the pressure at different entrances, for example.

3.5.2.4 Meetings
Physical meetings are crucial when disseminating information – both before the event has begun, in order to ensure that everyone has the necessary information and knowledge to carry out their tasks at the event, and also to check up on the work during the event, to make sure that everything is going according
to plan and, when needed, implement necessary measures. It is particularly important that different parts of the organisation can account for their activities, so that information about the situation is disseminated horizontally.

Aim for short and efficient meetings during the event. Decide on a fixed agenda for each meeting in advance, inform participants, and let them account for positive and negative experiences from their activities. After the event there is time to go through the implementation of the event and make sure that experiences are utilised.

### 3.6 Security guards

The licenced security guards, whose number are stated in the police permit, are under the command of the police but are hired by the promoter and carry out their services in accordance with their licence. This means that promoters may direct these resources within the commissioned area, as long as the police are not in need of a relocation of security guards. If the police need to relocate the security guards, the promoter should be informed about this as soon as possible.

Security guards are trained and commissioned by the police authority to “help maintain the public order”. Their commission involves certain authorities and obligations, which basically mean that security guards within the commissioned area are allowed to refuse, remove or take into custody people who attempt to commit a crime, disturb the public order or who are drunk.

In addition, as is true for anyone who is not a police officer, security guards are allowed to detain people who have been caught in the act of, or are fleeing from, a crime that is punishable by prison. Security guards who, while on duty, find out about a crime that is subject to public prosecution must inform the police of this. In other words, security guards are a supplement to the police, not a substitute.
It is important that promoters view their security guards as an important and valuable resource, and not as something “forced” upon them in order to receive a permit. At the same time, it is important to not build the safety organisation solely around the security guards, but to view them as a component in the overall safety measures. Since the police can relocate the security guards without notice, they might be removed from areas that are important to the promoter, without the promoter’s knowledge, when the situation demands it. Therefore, security guards and audience safety are important components in the crowd safety and security.

Promoters may direct the security guards within the commissioned area, as long as the police are not in need of a relocation of security guards. Security guards are a safety function for everyone who works with event safety. They have the authority and training to intervene in dangerous situations.

The safety staff lacks this training and authority, and, therefore, should not act in such situations. Instead, they should alert the police or security guards. However, keep in mind that too many visible security guards in one single area may have a provocative effect.

3.6.1 Requirements for security guards

When the police and the promoter are in agreement on the event’s character and outlining, they can decide the number of security guards and their general work assignments, after which the promoter can procure the service. The promoter hires the security guards, and acts as their employer. As the employer, the promoter can hire the security guards who best suit the event’s characteristics.

Social attitude and experience are two qualities that should be valued when hiring security guards:

- **Social attitude.** This regards the type of treatment the promoter wants the visitors to be given. Comfort is a safety factor at all events, which is why the selection of security guards is an important task.
- **Experience.** Security guards with previous experience from similar events may be preferable, as opposed to security guards who have mainly worked with other types of tasks. The norms for acceptable audience behaviour differ depending on the type of concert and venue. In addition, the type of work differs.

If a security guard were to act in a way that would be considered less suitable in a certain context, then the promoter may replace this person, whilst keeping the number of security guards at a steady level. However, the promoter may not replace a security guard due to something that the security guard has been commissioned to do.

Complaints against security guards are made to the police authority in the county where the event was held.

3.7 Medical care

The event’s own medical care function must be able to provide first aid services, treat minor injuries, assess whether further treatment is needed and prepare for emergency care in the event of a serious injury.

All types of event must have some form of medical care service available. Smaller events might get by with only a couple of staff with first aid training, while larger events need an extensive medical care organisation with doctors, nurses and possibly ambulances on location. Medical care preparedness should be part of the safety organisation. Read more about first aid in Section 2.3.2.
3.7.1 Planning and dimensioning of medical care

Large events that are located far from the nearest clinic or hospital should have a more extensive medical care organisation. Sometimes it might even be necessary for the local health authority to set up a temporary clinic at the event venue. In order to ensure access to medical transport, it might be a good idea to have an ambulance and crew on site.

A person in charge of medical care (preferably a doctor or nurse) should be involved in the planning of the event at an early stage. This person should be familiar with the pre-hospital and emergency medicine organisation within the geographical area in question, act as a contact person with the local emergency medical service (EMS) and organise the event’s own medical service.

The internal medical care organisation should be organised to work at the specific event. Examples of functions that should be considered in the organisation are presented below:

- **Fixed medical care sites** (Where should they be located? What competence/equipment is required? What hours should they be available?)
- **Mobile medical care teams** (How many? What competence/equipment is required? What hours should they be available?) Which areas should be patrolled?
- **Medical transport at the event venue** (Is there a need for it? What modes of transportation are required? What hours should they be available?)
- **Control centre** (Is there a need for it? What competence is required? What hours should they be available?) Read more about organisational requirements in Section 3.1.

In order to dimension the medical care service at an event, the promoter should conduct a risk and vulnerability analysis along with the person in charge of the medical care service. Such an analysis can be facilitated by using the template in Appendix A. Based on the findings from the analysis, and in consultation with the emergency services and organisations concerned, the promoter should then decide on the extent of the event’s medical care preparedness.

This calculated level of resources might require further adjustments. Keep in mind the findings from the template are a recommendation, not a requirement. Furthermore, the template is not intended to constitute the entire risk and vulnerability analysis at an event, but rather is to be viewed as a supplement. The benefit of the template is that it enables a simple and standardised assessment of the medical care needs at an event.

3.7.2 Medical care

The event’s internal medical care organisation should be dimensioned according to how many people are expected to attend the event, as well as according to local EMS resources.

Having event staff with first aid training on location is always an asset. Volunteer organisations such as the Red Cross can be contacted, and you can also offer first aid training to the safety staff on patrol.

3.7.3 Ambulances

At larger events it is not uncommon to choose to integrate ambulances with the event’s medical care organisation. Ambulances can be hired from the local health authority as well as from a number of private operators. In order to achieve a seamless integration between the event’s medical care organisation
and the regular emergency medical service, promoters should consult the local health authority about the possibility of integrating some of these resources private ambulance operators into the regular EMS preparedness.

3.8 Partners

‘Partners’ means organisations and associations that can help promoters increase safety and security for visitors by carrying out their regular activities at the event. These partners might be churches, night patrols, women’s aid, Alcoholics Anonymous or other non-profit organisations. By involving these in the event, the promoter receives support in finding and helping people who are in need of assistance. In addition, young visitors will have more adults around to talk to, which usually has a calming effect.

Be careful when recruiting collaboration partners. The fact that someone is a member of an association or an organisation does not necessarily mean that this person is qualified for safety measures. Therefore, the staff of collaboration partners should only be seen as a supplement to the safety organisation.

Collaboration partners should be informed about the rules that apply at the event – what is permitted and what is prohibited, respectively – and how the promoter believes that the staff should behave at the event. If an outside organisation is involved in some aspects of the work, their staff should receive appropriate training. Staff from outside organisations should preferably be managed by the event’s own staff.

The promoter should make sure that collaboration partners have access to areas marked off from the audience, where they can rest and gather. In addition, it is considered a good gesture to give them free access to the event.

3.9 Organisation for serious incidents

In the event of a serious incident that affects the entire event, a specific crisis organisation, which should coincide with, and have the same chain of command as, the regular organisation must be implemented. In addition, the event needs a crisis organisation in order to connect to the police, the fire & rescue service and the emergency medical service. With a clear crisis organisation, everyone knows who to communicate with, and staff with similar decision-making authority will be able to work side by side.

The model below shows how promoters can build their organisation parallel to the emergency services. This way, it will be established in advance which post will join the emergency services command post, who will direct the tactical work at the event and who will help the emergency services operationally at the site of the incident. The emergency services have their own terms for these levels. For example, the police call their levels: strategic command, overall operational command and operational incident command. The fire & rescue service and the EMS use other terms. Read more about preparedness for serious incidents in Chapter 18.

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<thead>
<tr>
<th>Management site</th>
<th>Event</th>
<th>Police</th>
<th>Emergency Services</th>
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CHAPTER 4
SELECTION AND DESIGN OF AN EVENT VENUE
Choosing and designing an event venue is an important part of the safety measures. Once the stages have been set up and the audience has been invited, the event venue cannot be changed easily. Therefore, promoters should be extra careful when they select and design their event venue.

A properly selected and designed event venue can eliminate several problems and risks, and thus facilitate the safety measures. An unsuitable event venue, on the other hand, may bring about problems that worsen event safety and make the safety measures much harder.

Therefore, it is important that the event’s safety coordinator participates actively in the selection and design of the event venue.

### 4.1 Setting requirements for an event venue

When selected the location for an event venue, promoters should begin by writing a list of all the resources that the event may require and what opportunities this might bring about. Include the police, the fire & rescue service and the emergency medical service (EMS) in this work. This saves time and facilitates the licensing process. Read more about permits and the permitting process in Chapter 2.2.

#### 4.1.1 Assessment criteria for an event venue

Make a list of the criteria for the event venue, for example as follows:

- **Sufficient space.** Is there enough space for the planned number of stages, entrances, vendor booths and other peripheral activities? How much of the space will be required for backstage, production area, vendors, caterers, etc.?

- **Audience areas.** Can the venue accommodate the expected crowd size? Are there adequate opportunities to create adequate crowd flows, i.e. areas for entrances and exits as well as areas for queues, evacuation and gathering outside the event venue? Read more about crowd capacity in Section 4.3.

- **Parking, sleeping accommodation, public transportation.** Are there enough usable areas for parking and campsites, or other sleeping options (hotels and hostels) in connection to the event? Can local public transportation accommodate the expected crowd size? Read more about parking in Section 5.3.4.

- **Traffic capacity.** Can the area’s roads handle the expected traffic flow? Can the local roads handle the expected traffic flow? Can the roads accommodate the visitors as well as the event’s own vehicles, while maintaining enough space for fire & rescue services vehicles? Read more about traffic planning in Section 5.3.

- **Access routes.** Is the need for access routes for fire & rescue services vehicles met sufficiently? Distances to the nearest hospital, medical care facility and fire & rescue station may be of great importance here, as waiting times that are too long for ambulances or the fire & rescue service might mean that the amount of on-site fire & rescue service or medical care service resources might have to be increased. Consult the local EMS and fire & rescue service about these matters. Read more about access routes in Section 5.3.5.3.

- **Infrastructure.** Does the event have the necessary infrastructure, such as access to electricity, water and drainage, mobile phone coverage, crowd communication tools, stores/kiosks where the crowd can purchase food and drinks, as well as toilets and showers? Remember that the length of the event strongly affects the required infrastructure.
• **Existing buildings and activities.** Are there any nearby companies that work with flammable materials, or facilities with automatic fire alarms? If so, it will increase the requirements for fire & rescue service accessibility. Are there any organisations with a heavy flow of suppliers in the vicinity? Discuss how this might affect the event. Noise levels, traffic disturbances and other strain caused by the event on, for example, nearby residents must also be taken into account. These matters should be discussed with residents and the municipality.

• **The impact of the location.** How do everyday activities affect the event? A heavily trafficked road, airport or similar could ruin the sound experience for visitors, for example. Consult the municipality, landowner and nearby interested parties in order to confirm that activities which may potentially disturb or affect the event negatively will not be conducted at the same time as the event, such as reconstruction, road work or other nearby events.

• **Degree of accessibility.** Is the venue accessible to people with disabilities? In order to make the event accessible to as many people as possible, try to use general solutions rather than specialised ones. Read more about accessibility in Chapter 13.

4.1.2 Terrain and load properties

Knowing the ground properties is particularly important for outdoor events; for example, how that ground is affected by several days of rain. Make sure that the surface at the venue is drained properly, in order to avoid waterlogged ground and to establish that the ground has the desired load properties. Keep in mind that heavy constructions such as stages, tents, etc. might sink into the ground if it has poor load properties. Municipalities often have maps showing the load properties in different areas. In many cases, the ground must be able to withstand heavy transports under poor conditions.

Furthermore, you should consider how the area will look after the event. Poor load properties that cannot sustain the event might make the choice of event venue financially impossible.

The quality of the ground is particularly important at focal points (e.g. stages, entrances and exits). A lawn will quickly turn into a sea of mud under the feet of thousands of people, thus creating the risk of slipping.

Some points to keep in mind are:

• Meadowland can quickly turn into mud in rain or moisture.
• Lawns can quickly become mud during rain.
• Cobblestones can cause slipping and sprains in wet weather, and might cause crowd barriers to slide.
• Gravel is a good alternative at stages, for example. However, keep in mind that gravel might reduce accessibility for people in wheel chairs.
• Reinforced grass (grass that grows in-between specially outlined paving stones) is a good alternative at stages, for example.
• Asphalt is also a good alternative at stages.
• Walking paths should be even, firm and non-skid.

4.1.3 Mechanical strength

At indoor events it is important that the promoter knows whether the venue will be exposed to any strain, such as where items will be placed or hung up – and whether the venue is able to sustain this strain. The promoter is responsible for informing the property owner about what type of event is planned for...
the venue. Always send a design plan to the property owner that specifies where items are planned to be hung up from the ceiling. The same applies to extreme weights that are placed on the floor.

The property owner is responsible for making sure that the venue is suitable for the event. In addition, the property owner must be able to provide the loading limits for the venue. Promoters must know these limits and be aware of planned strains on these in advance.

Find out the venue’s limits, such as:
- Is hanging items in the ceiling permitted?
- What is the weight limit on different areas of the floor?
- What is the weight limit on different areas of the ceiling/beams?
- What is the weight limit for the entire floor?
- What is the weight limit for the entire ceiling?

Furthermore, learn as much as possible about the strains the event will put on the venue:
- Crowd size: How many will attend the event?
- Crowd behaviour: Will the crowd be sitting down? Will the crowd be standing calmly? Will the crowd be jumping?
- How much weight (such as sound and lighting) will be hung from the ceiling?
- How much weight (such as speakers, stages) will be placed on the floor?

The maximum weight limits on ceilings and floor are sometimes difficult to calculate, since the strain is not always distributed evenly. In addition, keep in mind that there is great difference between static and dynamic pressure.

Each building in which weights are planned to be hung from the ceiling should have specific attachment points with the maximum load clearly stated. If you, the promoter, are unsure whether the building is appropriate for the event, then you should discuss this with the property owner. If there is uncertainty regarding the maximum load and attachment points, then the property owner should hire a technical expert.

### 4.1.4 Risks in the vicinity of the event

When thousands of people are gathered in the same location, certain factors in the vicinity, which usually are not considered to be risks, will become risk factors that need to be eliminated or managed. Examples of such factors in the vicinity of an event include:
- watercourses, slopes, marshes
- busy roads, railways
- high voltage transmission lines, drainage systems or gas lines.

The factors above are examples, not a check list. Make your own list and possible simulations for how the crowd may be expected to move, in order to identify risks in the vicinity of the event. After this has been done, contact the person or authority who is responsible for the source of the risk, for example, contact the owner of the electricity grid for matters regarding electricity power lines, and the Swedish Transport Administration for matters regarding nearby roads or railways.

In certain cases, the risk can be managed or eliminated through guarding, or by putting up fences or barriers. In other cases, the vicinity to one or more
geographical hazard zones may simply result in the venue being unsuitable for an event area.

4.2 Inspecting and assessing the event venue
Those in charge of the event should visit and inspect the venue carefully, well ahead of the event – preferably in consultation with the venue’s staff if there are any. The purpose of the inspection is to assess the venue’s suitability for the planned event. Base your inspection on the requirements in Section 4.1.1. In addition, keep in mind that others’ experiences may be of great help during the planning process. Contact the fire & rescue services and any previous promoters and discuss your event. In certain cases, there might even be complete analyses and plans.

Examples of areas that should be inspected in advance:
- audience areas
- stage areas
- backstage areas
- car parks
- campsites
- areas outside the event venue that are suitable for queues and gatherings
- paths to and from the event
- transport routes
- areas for parking fire & rescue services vehicles
- access routes for fire & rescue services vehicles
- evacuation routes

4.3 Crowd capacity
Estimating the crowd capacity for an outdoor event is difficult. There are many factors that affect capacity – more than most people can review. In addition, all estimations of the crowd loads are qualified guesses at best. If you are not completely sure how you should go about these estimations, then you should contact someone who has the necessary experience and competence – e.g. an experienced promoter or safety expert.

Estimations should never be used as the basis for crowd capacity, however; only to check that the planning of the event is on the right track. If your estimations are near the crowd capacity, then you should lower it and accept fewer visitors.

Keep the following factors in mind when estimating the site’s or building’s capacity:
- Known restrictions and obstructions. Contact the fire & rescue services or previous promoters.
- Capacity. Can the building or event site house the intended crowd load?
- Evacuation alternatives. Read more in Section 4.3.2.6.
- Design. Is the design of the event site or building suitable?
- Focal points. Where should they be placed and how should they be dimensioned? Read more in Section 4.3.1.3.
- Focal routes. Where should they be placed and how should they be dimensioned? Read more in Section 4.3.1.4.
4.3.1 Terminology

A number of terms for various aspects of crowd capacity are described below. These terms will be used throughout the Guide.

4.3.1.1 Crowd density

Crowd density is the number of visitors in relation to the area’s size, or simply how closely people are standing at a certain area. Which crowd density is comfortable varies, depending on the type of crowd and event (see below).

4.3.1.2 Gross area, net area and actual audience area

Three values are used when dimensioning the event area:

- **Gross area.** The venue’s total area, in square metres.
- **Net area.** The area that remains when excluding event buildings, stages, peripheral activities, backstage areas etc., i.e. the area which the crowd can use.
- **Actual audience area.** The area that remains when excluding blind spots or unattractive areas, where no one can or wants to stand. What remains is the area that the crowd will use. This value can be used to estimate the total capacity at a stage, for example.

4.3.1.3 Focal points

A focal point is an area that attracts the crowd and where the audience will want to go, such as stages, entrances, exits, vendors, toilets and kiosks. A focal point can be strong or weak, depending on its ability to attract visitors. Strong focal points include stages or entrances, for example, while vendors or toilets are often considered weak focal points. Read more about stages, entrances and other focal points in Chapters 6–9.

4.3.1.4 Focal routes.

A focal route is a route that the majority of visitors will use to get between two focal points. Identifying and analysing focal routes can be of great help when planning the design and location of different focal points. If you know the event’s focal points it is easier to manage crowd movements, take action when problems arise, and predict what might disturb crowd flow along the focal routes.

Focal routes can be strong or weak, depending on how many people are using them. The number of people using a focal route might vary, not least depending on the time of day and the event schedule. Read more about crowd movements in Chapter 14.

4.3.2 Calculation of crowd capacity

It is easy to calculate the maximum crowd capacity for buildings or arenas used for events, as it is the same as the evacuation capacity of the building or arena. At festivals and other events at temporary locations, it is sometimes possible to do the opposite – to first estimate the number of people who will attend the event and then makes sure that the venue can accommodate the estimated number of visitors as well as evacuate them within an acceptable time limit. However, keep in mind that all estimations of the crowd loads are qualified guesses at best. Do not have blind faith in the numbers and estimations; use common sense.

If you are not completely sure about what you are doing, it could be a good idea to contact an experienced promoter or safety expert to help you with the calculations.

Most older and larger events base their entrance capacity on experiences from previous concerts – adding a gradual increase. In order to reach optimal...
capacity, you should always have a safety margin and gradually increase capacity.

4.3.2.1 Maximum crowd size is decided by the event’s permit
The area’s capacity is decided by the maximum crowd size stated in the event permit. The promoter can suggest an crowd size in the licensing application. In order to calculate this capacity, the promoter may consult an expert or carry out their own calculations with the help of the suggestions below.

The role of the police and the fire & rescue service is to critically review the proposal for crowd size in relation to such things as physical conditions, organisational fire prevention, and risks.

Police and fire & rescue service work at the event might affect the crowd size stated in the permit. If the police and the fire & rescue service have staff and vehicles on location, the crowd size might be allowed to be somewhat larger. Read more about permits in Section 2.2.

4.3.2.2. Capacity estimates in practice
An crowd does not spread out evenly across an event area. Instead, certain parts of the area – e.g. in front of a stage or at an entrance – have a higher crowd density than, for example, vendors or toilets. A good way of surveying an area’s capacity is to divide it into sub-areas, or zones. This will make it easier to estimate the crowd load for larger areas.

For a part of the event area to count as a zone, all areas within the zone should have similar qualities in terms of:

- attraction – how interesting the area is to the crowd
- physical conditions – ground, slope etc.
- safety functions – staff, plans, safety preparations etc.

Promoters can make their own calculations to estimate how much of a crowd an area or a zone can handle. However, attaching fixed numbers to large crowds on the move is difficult. Therefore, all calculations of capacity and flow rates should be treated as indicators – not as exact numbers. It is important that other assessments are made as well.

Crowd capacity in a given area can be calculated as the smallest number of the following:

- crowd size A: the area’s capacity
- crowd size B: entrance capacity
- crowd size C: exit capacity
- crowd size D: emergency exit capacity (indoors)

Note that there are no relevant Swedish rules or guidelines for these kinds of capacity estimates. In other words, the calculation models presented in this guide are not prescribed by law. In addition, the models are not mentioned in regulations or general guidelines from the fire & rescue services. They do not produce exact values, and should be seen as a means to reach guideline values.

4.3.2.3 Crowd size A – the area’s audience capacity
When calculating the crowd capacity at an event that only has one strong focal point (e.g. an event with only one stage), crowd size A should be calculated based on the total crowd capacity at the stage. The crowd capacity at a stage is calculated by adding the capacity at all zones in direct connection to the stage (standing areas, seating areas, etc.).
If you are aware of the visitors behaviour and can conclude with certainty that only parts of the crowd will be at a certain focal point at the same time, you can increase the event’s capacity somewhat. However, if you do this you should be able to control and direct the crowd flow if there is a risk that the capacity will be exceeded, i.e. to not let more people in than the stage area can accommodate. Capacity at events with several strong focal points (e.g. festivals with several stages) is more difficult to calculate. You cannot calculate the maximum capacity for the event’s various focal points and then add them, since you cannot determine how the crowd will be distributed between different focal points at any given time. Instead, the event’s total capacity is rather a balance between the various focal points’ capacity and the expected crowd behaviour. What the promoter must do is make sure that no zones are overcrowded during the event. Read more about focal points in Section 4.3.1.3.

The following method can be used to get an indication of the crowd capacity for a zone:

1. Calculate the zone’s actual crowd area in square metres.
2. Decide the maximum crowd density for the zone based on its area of use.
3. Calculate the maximum crowd size of each zone.

The following can be regarded as guideline values for maximum crowd density:

- people sitting in tents (e.g. stands with benches): 2 people per square metre. (Source: SS-EN 13782:2005 "Temporary installations - Tents - Safety")
- standing audience in tents 3.5 people per square metre. (Source: SS-EN 13782:2005 "Temporary installations - Tents - Safety")
- standing audience, other: see below.

The numbers above are guidelines for normal cases, although many factors affect the actual crowd capacity, such as:

- weather (heavy rain, waterlogged areas, bright sunlight, etc.) Read more about weather factors in Section 17.5.4.4.
- season (clothing)
- type of event (integrity distance between people etc.)
- type of artist. Read more about artist profiles in Section 15.1.1.
- type of crowd. Read more about crowd profiles in Section 14.3.1.

In Sweden, there are no general guidelines for a standing outdoor crowd. The suggestions below are based on British rules and should be used with caution. When calculating the area for a standing crowd in a zone, two factors should be included – the area’s physical condition (P) and the quality of the area’s safety management (S). Assessment of (P) and (S) should be made by a competent person who knows and understands general safety principles, the area and the event.

The values for (S) and (P) are numbers between 0.0 and 1.0 according to the examples below: The highest standard for the area’s physical condition (P) gives a factor of 0.9 or 1.0. The highest standard for the area’s safety management (S) also gives a factor of 0.9 or 1.0. A low quality gives a factor of 0.0 or 0.1. The lowest of the two factors (P) and (S) will be used, and multiplied with the maximum crowd density, i.e. 4.7 people per square metre. By doing this, you get a guideline value for the crowd capacity in an area with a standing crowd.

Example: If a zone has the values (S) = 0.8 and (P) = 0.6, then the zone’s crowd capacity is calculated as follows: 0.6 x 4.7 = 2.82 people per square metre. Remember that this is only a suggested model. There are no laws for calculating standing crowd capacity at outdoor events in Sweden. Source: Guide to Safety at Sports Grounds, page 18 ff.
4.3.2.4 Crowd size B – entrance capacity
Entrance and exit capacity have to be adjusted according to the size of the event. However, it might be difficult to check whether the event has sufficient entrance capacity, since the audience rarely arrives in a steady flow. Sometimes the entrances might be under a lot of pressure, while at other times they are not under any pressure at all.

An event’s entrance capacity can be defined as the number of people who can pass through the area’s entrances in an hour. By calculating the capacity of an individual entrance, it is possible to test the capacity of a gate by getting it fully staffed, having the event staff act as test visitors, and measuring how many people the gate can let through in one minute. However, make sure that the entrance staff does not try to let the visitors in too fast, as the purpose of the test is to simulate a normal operation.

Conduct several tests and calculate a mean value. Then multiply the number of people the entrance can let through in a minute by 60. You will then have the capacity for that specific entrance.

For calculation purposes – and to ensure that entrance rate allows the visitors to leave the entrance when inside the area – the maximum capacity has been suggested to be 660 people per hour per entrance. However, this is a very high number and should be seen as an absolute maximum. The real value is likely to be much lower. Make sure you have margins! Source: Guide to Safety at Sports Grounds, page 61 ff.

Example: An example event has the following entrance capacity under normal conditions:
24 entrances that each can handle 5 people per minute and
10 entrances that can handle 7 people per minute.

24 entrances x 5 people x 60 minutes = 7,200 people
10 entrances x 7 people x 60 minutes = +4,200 people

11,400 people

Again, please note that the result above should be seen as a guideline, not as an absolute value. Read more about entrances and visitor management in Chapter 7 and Section 17.2.

4.3.2.5 Crowd size C – exit capacity
The exit capacity can be calculated based on the number of visitors who can leave the area under normal conditions (i.e. not during an emergency evacuation). Promoters should aim to be able to empty an outdoor installation in eight to ten minutes under normal conditions. Source: Guide to Safety at Sports Grounds, page 80 ff.

Keep in mind that there are several different factors that might affect the exit capacity, such as:
• Signs and information about exits
• The shape and location of the exits
• Areas directly in front of or behind the exits
• Audience type (mixed/youngsters/families/older people/people with disabilities)
• Season and weather.

At an event with an obvious ending (e.g. a final concert) the majority of the audience will leave the venue at the same time. In these situations, the goal is to have a steady flow of people leaving the venue. If the flow is disrupted for some reason, the event management should be prepared to provide information as to why this has happened and how long the audience will have to wait.
The width of the exit is very important. The maximum exit rate is estimated at 100 people per metre in width per minute on solid ground and 73 people per metre in width per minute on stairs. Source: Guide to Safety at Sports Grounds, page 80 ff. For example, if the exit time is ten minutes you can calculate the exit capacity as follows:

Example: An event with 8 exits, each being 2 metres wide on even high-quality ground: 8 exits x 2 metres x 100 people x 10 minutes = 16,000 people. Read more about exits in Chapter 7.

4.3.2.6 Crowd size D – emergency exits (indoors)
Crowd size D only applies to indoor events or zones. Crowd size D is often regulated by the building’s established crowd capacity. For outdoor events, Sweden does not have any laws stipulating the required number of emergency exits.

Crowd size D is based on the available number of emergency exits that are clearly visible and accessible to the visitors. Read more in Section 7.5. When calculating evacuation capacity all people must be counted, not only the visitors. Therefore, you should include all staff, artists, vendors, and others attending the event.

Sections that are intended to accommodate more than 150 people must have evacuation routes and doors must be at least 1.2 metres wide. If the section is intended for fewer than 150 people, the evacuation route only has to be 0.9 metres wide. The total width of all evacuation routes has to be at least 1 metre per 150 people.

Example: Emergency exit capacity for an event with 3 emergency exits, all of which are 1.5 metres wide, is calculated in the following way: 1.5 metres x 3 exits x 150 people = 675 people. If one of these exits is blocked, the other exits must correspond to 300 people per emergency exit. In this example, this means that the total exit width (minus the unusable exit) multiplied by 300 has to be equal to or more than 675 people (1.5 metres x 1 exit x 300 people), in other words: 1.5 metres x 2 exits x 300 people = 900 people. This means that the event has an emergency exit capacity of 675 people. More information about evacuation routes can be found in Section 7.5 and in the report of the Swedish Board of Housing, Building and Planning on dimensioning for evacuation from 2006.

4.3.2.7 Calculating the actual crowd size
The lowest crowd size of A, B, C and D is the maximum crowd size that the event should allow. The logic here is simple:

• Do not allow more people in than can get in over an hour.
• Do not let more people in than the venue can accommodate.
• Do not let more people in than you can let out in eight minutes.
• Do not let more people in than the emergency exits can handle.

If the police and the fire & rescue service have set a maximum crowd size, then it must not be exceeded, even if your own calculations give a higher maximum capacity. The fire & rescue service’s set maximum limit is usually based on the width of the emergency exits (Crowd size D).

4.4 Design of the event venue
The purpose of the event venue’s design is to give the audience a pleasant and safe experience. The design of the event venue is of great importance for safety measures, and should be done in consultation with the event’s safety organisation. It should be easy to find your way around, to get around and to leave. A risk analysis is made before the event venue’s final design.
A number of general guidelines for designing an event area are provided below:

- Aim for an as open, simple and logical a design as possible.
- Make the walking paths wide and distinct; they can also be marked with tape or be covered with gravel or bark, for example.
- Right from the start, choose the path that the audience is likely to use.
- Close off any shortcuts.
- Show which path is the “right” one by using lighting, for example, and by making it as attractive as possible.

Support the design with easy-to-understand information, such as:

- Signs along the path that indicate where various focal points are located
- Information signs at the focal points
- Overview maps with important locations highlighted
- A high level of knowledge among staff so that they can answer questions.

Read more about crowd management in Chapter 14.

A good method for designing the event venue is to:

1. Locate focal points. Read more about focal points in Section 4.3.1.3.
2. Assess the prerequisites for crowd flows
3. Manage potential problems.

4.4.1 Siting
The siting of the event’s focal points is often based on the question: How do we create a pleasant experience for the visitors? It is important to keep the safety aspects of the area, the activities and the siting in mind. Therefore, the safety coordinator should always be present when designing the event venue.

The following factors should be considered when deciding on the siting of focal points and other activities.

- Crowd flow
- Required space and infrastructure
- The area’s suitability in terms of ground quality, sustainability and slope
- External factors
- Health and safety risks.

4.4.1.1 Crowd flow
The siting of the event’s focal points will decide how the audience will move around at the event venue. Use this opportunity to steer the crowd flow through strategically located focal points. Aim for a clear and simple design. A complicated event venue with illogically located focal points might confuse the audience as well as the staff.

Keep in mind that certain activities require an crowd flow while others benefit from being located outside busy focal routes. Read more about crowd flow and focal route design in Section 4.3.1.4. and in Chapter 14.

4.4.1.2 Space and infrastructure
Activities require a certain amount of space in order to be conducted efficiently and safely – be it a vendor booth, a stage or an entrance. This might concern requirements such as: crowd space, transport routes, safety distances for stock-piles or queues, etc. In addition, you should also consider the space above the area, such as overhanging cables or vegetation.
Certain activities are self-supporting in terms of electricity and water, and thus only need a location, while others need access to water, electricity and access routes in order to operate. These needs sometimes influence the location of activities.

Contact the person in charge of each activity before deciding on the location, and inquire about their needs for:
- Space for the activity
- Space for surrounding activities (such as queues)
- Electricity
- Drinking water, hot water
- Hygiene and sanitation
- Transportation and access routes
- Parking

4.4.1.4 Disruptions of the surroundings
When deciding on the siting of various activities, you should consider how they affect the surroundings. For example, it might be highly inappropriate to place toilets next to a food vendor. By using the area’s natural shape and topography, you can often reduce or eliminate loud noises for nearby residents or between stages.

4.4.1.5 Health and safety risks
Certain activities or installations bring about risks for safety or health, meaning that they require a special location. This includes activities that use liquefied petroleum gas or are generally flammable, such as food vendors or tents. You should consult the local fire & rescue service about a suitable location and safety distance, and consult the local environmental office about the selling of food. Read more about handling liquefied petroleum gas in Section 9.4.1.

Certain activities are highly inappropriate to place next to one another. For example, certain goods might be perceived as provocative and certain activities can be seen as offensive, which could lead to discord between supporters of political or religious groups, or sports teams.

4.4.2 Dimensioning
When the event’s focal point sitings have been decided, you should control and dimension the capacity of the event’s entrances, exits and focal routes.

4.4.2.1 Dimensioning of entrances and exits
Can the entrances handle the expected number of visitors in the given amount of time? Will the crowd flow vary depending on the time? How will this be handled? Queues and outflows, i.e. the area where the visitors exits the event, should be sufficient and located so that the visitors do not risk ending up on a frequently travelled road or an access route for emergency vehicles when queuing or leaving the event. Try to keep queues and surrounding areas free of traffic.. Read more about dimensioning of entrances in Chapter 7.

4.4.2.2 Dimensioning of focal routes
Focal routes should be of sufficient size, so that they can handle the expected crowd flow. In addition, it is important that the crowd flow along a focal route is evenly distributed. Changes to the width, ground or direction will affect the crowd’s walking speed, which in turn affects crowd density.
A loss in quality along a short stretch could affect the crowd flow along the entire focal route. In order to avoid "crowd jams" you should always aim for a focal route design that:

- Keeps twists and turns to a minimum
- Avoids sharp turns
- Has an even width from point A to point B
- Has an even, high-quality surface
- Does not intersect other large focal routes
- Does not go through queues or crowds, e.g. at a stage or a vendor booth.

All planned paths and roads should have at least the width of an access route, i.e. 3 metres, but preferably wider. In certain cases it might be necessary to control the influx into a focal route by using entrance hosts or fences, for example, in order to avoid crowd jams and to ensure that the visitors can enter and exit the area at an acceptable pace.

Several factors affect the speed of a crowd flow, such as:

- Crowd density
- Signs and information
- The ground
- Design (turns, corners, width)
- Crowd type (mixed/youngsters/families/older people/people with disabilities)
- Obstacles along the road
- Weather and season.

The maximum value for a calculated walking speed is 100 people per metre width per minute. Please note that this number is very high and only relevant as a reference during perfect conditions with a low crowd density, i.e. when everyone has plenty of space to move around and when there are no disturbances in the crowd flow, such as oncoming people, obstacles, bottlenecks or nearby focal points. Source: Guide to Safety at Sports Grounds, page 80 ff.

Example: Under the best possible conditions: in 5 minutes, a 10-metre-wide focal route on an even, high-quality surface can allow for: 5 minutes x 10 metres in width x 100 people = 5,000 people. Read more about how to handle crowd flows in Chapter 14.

4.4.3 Managing potential risks

While designing the event venue, you have an excellent opportunity to manage potential risks at an early stage. Read more about risk management in Section 1.5.

4.4.3.1 Managing geographical risks

Geographical risks are objects at a fixed location – e.g. lakes, slopes, marshes, busy roads, railways, high voltage transmission lines, drainage systems or gas lines.

It is often possible to reduce or eliminate geographical risk factors through good planning, informative signs, barrier fences, and guarding.

4.4.3.2 Managing shortcuts

Shortcuts can easily turn into unplanned focal routes. In order to control the crowd flow, you should either remove visible shortcuts or check their capacity and use them as regular paths. Read more about how to handle crowd flows in Chapter 14 and read more about focal routes in Section 4.3.1.4.
4.4.3.3 Managing bottlenecks

Bottlenecks can both be structural bottlenecks (such as focal routes with narrow sections, corners, or a poor surface, which slow down the crowd flow) and procedural bottlenecks (such as ticket purchases, wrist bands, toilet queues, food lines, etc.).

Bottlenecks must be identified and accounted for when designing the event venue. Some bottlenecks must be dealt with. For example, it might be necessary to control the influx into a focal route by using entrance hosts or fences, in order to avoid crowd jams and to ensure that the visitors can enter and exit the area at an acceptable pace.

4.4.3.4 Managing lines of sight

Certain parts of the area might be less attractive to the visitors, such as where lines of sight make it difficult to see the stage. By accounting for the line of sight, for example when deciding on the siting of the stage or by putting up sight barriers, you can free up certain areas. This is important at entrances and access routes, for example. Read more about lines of sight in Section 6.2.6.
An event needs systems for communication, transportation of goods and staff, electricity installations and water supply; i.e. infrastructure. Regardless of the event, there is a need for functioning infrastructure, although the extent of the need varies depending on the event’s size and length.

Inadequate management or lack of infrastructure could lead to a poorly executed and less enjoyable event, as well as an unhappy crowd. In addition, it can result in an increased risk of incidents or the safety measures becoming more difficult.

5.1 Radio communications
When handled correctly, a communications radio system is one of the best possible communication tools at an event. However, as with all systems, its efficiency depends greatly on the system’s quality. Therefore, it could be a good to contact a radio supplier or an amateur radio association for assistance with setting the radio frequencies, setting up relay stations (repeaters) and creating a channel system.

5.1.1 Communications radio channel system
Since a conversation on a radio channel will block the channel for other communication, it can be a good idea to divide the network into several call channels and a number of communications channels. Each larger section of the organisation should have its own call channel where they usually listen in, while the communication channels are used for longer conversations. If you want a longer conversation with someone, you call that person and specify which communication channel you want to use. You then change to the new channel and have the conversation on that channel.

In addition, it is good idea to establish an emergency channel, where you preferably should put the event’s medical organisation. This channel should be kept free of all other traffic and only be used in the event of an emergency, for example if the medical service or crisis centre needs to be contacted.

Radio discipline is important in all radio communication, and it is absolutely vital on the emergency channel. Inadequate radio discipline could mean that important information does not reach the recipient due to the network being used by other, less important traffic.

5.1.2 Radio discipline
A radio network’s effectiveness is to a great extent determined by its users. A good memory rule is “think, press, speak” – that is:
- Think through what you want to say and to whom,
- Press the send button and wait a second, then
- Speak. A good radio message is clear, correct and brief.

Radio language is used to keep messages short and concise. A couple of examples of traditional radio lingo are presented below:
- Over – the person who talks has finished talking and wants the other person to respond
- Out – the conversation is over
- Roger – I have heard and understood
- Repeat – repeat what you just said.
Other radio terms and expressions may vary, depending on the event. However, it is important that all involved parties are familiar with the terms.

The radio network should only be used for information that is relevant to the event as a whole, while information that is irrelevant to the event or its safety should be communicated via mobile phones or at meetings. However, keep in mind that sensitive information should not be communicated explicitly over the radio network, as others might be listening or accidentally overhear the information. For sensitive information use mobile phones, personal meetings, or code words. Read more about code words in Section 1.4.8.4.

5.1.3 Communication control centre
With many communications radios and many users, there should be someone whose task it is to maintain order in radio traffic. Therefore, many larger events use a communication control centre. This centre might have several tasks, such as maintaining radio discipline on the radio network, making sure that the radio network is functioning, and servicing the equipment.

In addition, the communication control centre can also be used as a centre for the radio network and the event’s communication. This means that the communication control centre can be used as a conveyor of information throughout the event – as well as to SOS Alarm. This way, you can ensure that important information is sent out, and that SOS Alarm is contacted. In addition, SOS Alarm avoids being overrun with emergency calls, as the communication control centre is assigned to call them on behalf of the entire event.

5.2 Signs
A well-thought-out and executed sign strategy prevents problems as well as risks. It is easy to underestimate the important of good signage; a single well-placed sign can be the difference between a difficult event and a pleasant, safe one. For example, it would be a good idea to have signs pointing to entrances, exits, emergency exits, ticket vendors, car parks, stages, toilets and various types of vendor booths.

It is also important to differentiate between signs and road signs. Road signs are signs intended to direct traffic on public roads. Signs may be set up by anyone if a permit has been issued, while road signs are set up by the road maintenance authority after an application.

There are a number of factors to take into account when designing signs and deciding on their location. You should always aim for redundancy, clarity and simplification. Read more in Section 1.1.3.

5.2.1 Design of signs
Promoters can often produce satisfactory signs themselves. In other cases, they have to contact sign makers. In both cases, you should keep in mind the following when designing the signs:

- The signs should be able to withstand the environment in which they will be used.
- The message should be short and clear.
- The message should not have any slang words or branch terms.
- The sign should not reflect glare and be free of reflective surfaces.
- Use a clean font; do not use serifs or italics, for example.
- Make sure to have good colours and contrast between the text and the sign, as well as between the sign and its environment.
• Aim for uniformity in the choice of colours; for example, all information signs should have the same colour, all direction signs should have the same colour, etc.

• Aim for uniformity when designing the signs. People see what they expect to see; if the visitors has seen signs with a particular design before, they will look for the same design when seeking other information at the event.

5.2.2 Siting of signs
A sign should be put in the right location. When deciding on the location of the signs, it is important to keep the following in mind:

• Arrival route. Where are the people the sign is intended for coming from? Are more signs with the same message needed at different locations in order to achieve the desired effect?

• Continuity. You might have to repeat certain signs along an arrival route, e.g. at crossroads where visitors can make a choice.

• Siting. Where should the sign be located along the arrival route so the message is clear?

• Angle. What angle should the sign have with regard to the arrival route?

• Height. How high should the sign be placed so everyone sees it? Keep in mind that the sign will be obstructed by crowd members passing by if it is too low.

When putting up the signs, have get a person who is not familiar with the area to walk around and assess how well that find their way around by using the signs.

5.2.3 Notice signs
Some signs (known as notice signs) have a regulated standard design, meaning that they have to look a certain way. Notice signs are:

• prohibition signs (such as no smoking or no open fire)
• warning signs (e.g. for explosives, liquefied petroleum gas and other flammables)
• mandatory signs (e.g. that hearing protection is to be used)
• emergency signs (e.g. emergency exits, evacuation routes, medical service)
• firefighting equipment signs (e.g. where you can find fire hoses or fire extinguishers).

5.3 Traffic and transport management
Transport and traffic management is important at larger events – both so that the event is accessible and safe to visit, and to minimise disturbances and burdens on traffic in the vicinity of the event.

As promoter, it is important that you inform the public about possible traffic disturbances. Local media is an excellent channel to spread this information.

5.3.1 Traffic safety
There is always a risk of injuries if the event is near roads or railways. If this happens, there are several actions that the promoter can take along with the emergency services. Consult with the police, the municipal traffic coordinator and the Swedish Transport Administration about potential risks and how these are best handled.
It is very important that staff members who drive vehicles have the driver’s licence qualifications to do so. This applies both within and outside the event area. In addition, the police in each respective municipality can issue special permits for enclosed areas. Visit http://www.korkortsportalen.se/andra-sprak/ to keep current on what applies to different vehicles. There, you can see which qualifications are needed for various vehicles.

5.3.1.1 Speed limits
Speed limits are a good way of reducing the risk of traffic-related injuries on stretches of road affected by the event. However, since the number of vehicles on the road will remain the same, merely lowering the speed limit will not be enough. It should be combined with other measures, such as traffic direction.

In addition, it is possible to implement speed-reducing measures such as speed bumps or narrowing the road. Promoters should contact the Swedish Transport Administration in order to receive a permit for such speed-reducing measures.

Contact the police and the municipal traffic coordinator and discuss whether these measures are feasible and how they are best implemented. It could also be a good idea to contact people who live near the event area and inform them about the planned changes.

5.3.1.2 Directing traffic
According to the Swedish Traffic Sign Ordinance (2007:90), traffic may only be directed by the police, a car inspector, road transport leader or someone appointed to monitor the traffic. Directing traffic without an official authority is punishable by law.

People who direct traffic should be well-equipped for the situation. They should be trained for the task and wear a reflective vest or similar equipment.

5.3.1.3 Roadblocks
If it is not enough to lower the speed limit or direct traffic, you should consider putting up roadblocks. The road authority decides on whether to put up roadblocks. You can contact the municipal traffic coordinator for information on who the road authority is. Shutting down a stretch of road during the event is a good safety precaution that eliminates the risk of someone being run over. However, the measure might affect nearby businesses and neighbourhoods. Therefore, you should consult the police, the municipal traffic coordinator and affected parties early on.

5.3.1.4 Rail traffic
An event in the vicinity of a railway brings about great risks in terms of electricity and traffic. Therefore, you should contact the Swedish Transport Administration during the planning stage of the event, in order to evaluate risks and how to reduce them.

According to Chapter 9, § 1 of the Railways Act (SFS 2004:519) you are not allowed to access a railway area without a permit, except for places to which the public has access. From a legal perspective, the promoter is not responsible for members of the public who access a railway area, but should still aim to prevent this from happening.

The promoter can take one or more of the following measures, in consultation with the Swedish Transport Administration:

- Lower the speed limit. The promoter can send a request to the Swedish Transport Administration to lower the speed limit on the railway near the event. However, these kind of permits are not frequently issued, as they affect the traffic on other stretches as well. In addition, it does not have a great effect, since trains have a long braking distance.
• Enclose the stretch of railway near the event. Promoters can mark off railways with fences. The safety distance from the railway is 2.2 metres. In addition, the fence should not be easy to climb.

• Guard the stretch. The promoters can also choose to guard the stretch outside the event. However, this is not a perfect solution, and should be combined with fences or reduced speed, for example.

• Survey the crowd flow. Think about how the crowd will move around, and base your event area design on these movements. If possible, avoid having a parking on one side of the railway and the event on the other, as there is a risk that visitors will take short cuts across the tracks. Read more about crowd flows in Chapter 14.

5.3.2 Pedestrian and cycle paths

Visitors at the event have to be able to get to and from the event, and move around outside it, safely. Combine the event’s area analysis with your traffic and transport management plan in order to find and mark out pedestrian and cycle paths for the crowd. These paths should be lightly used by non-visitors and should preferably feel like the “natural” path the crowd takes between the different areas.

This means that certain streets might only be made available to pedestrians, or that dangerous crossings and roads are guarded by the police or event staff.

5.3.3 Public transportation

Public transportation is often needed in order for the crowd to get to and from the event. At larger events, the local public transportation system might be too small. Station buildings, bus stops and platforms are not designed to accommodate the number of visitors that a large event can attract.

The formal responsibility for handling this potential problem lies with each respective public transportation operator. However, the promoter has to inform the operators about the event, provide the correct information, and function as a dialogue partner for the operators. In certain cases it might be preferable that the promoter assumes the responsibility for coordinating these measures.

If an incident happens on the way to and from the event, outside the event area, this is usually not the promoter’s legal responsibility. However, such incidents will be taken into account in the police assessment during the permit review for similar events.

Some points:
• Calculate how many of the visitors will use public transportation, and which modes of transport might be overloaded.
• Contact those in charge of these modes of transport early on. Inform them of the time of the event and how many visitors will need transportation. Examples of modes of transport include train, bus, underground, tram, taxi and plane.
• Modes of transport for people with disabilities should be able to stop no further than 25 metres from the entrance.
• If there are any limitations to capacity, then alternative modes of transport must be investigated, e.g. additional buses.
• Create a contact list with all the people in charge of these modes of transport. This list will be of use if there are any changes to the schedule or if the locations of bus stops or drop-off points for visitors are changed, for example. Make sure that the people in charge of the modes of transport used have a contact person at the event.

Use available means to inform visitors about how to get to and from the event. Post information on websites, tickets and through advertising.
• Communicate suitable transport alternatives to visitors via websites, tickets and advertisement, for example.

5.3.4 Parking areas
Visitors who arrive by car should be able to park their car near the event. In addition, staff, vendors, media and artists should be able to park their cars or their trailers and lorries carrying goods and equipment.

Some points:
• Make a rough estimation of the number of parking spaces needed, based on the crowd profile. Include parking for artists, vendors, media, own and hired staff, and any fire & rescue service, emergency services and police vehicles they might need to attend.
• Ensure that there are enough parking spaces and parking for emergency services vehicles for various needs. Lorries with groceries, trailers and caravans might require electricity. Parking spaces for people with disabilities require a larger area and must also be located close to the event. Read more about accessibility in Chapter 13.
• Find a suitable area for parking spaces. The parking area should be located on stable ground, such as asphalt, gravel or grass. A poorly drained field or meadow could lead to poor accessibility in case of precipitation. The parking area should preferably be close to the event venue. If not, there should be transport available from the parking area to the event.
• Make sure that the parking has sufficient signage. Contact the Swedish Transport Administration in order to obtain a permit for setting up signs. Read more about signs in Section 5.2.
• Make sure that you have staff monitoring the parking area and who point drivers in the right direction. Remember that you need a permit from the police in order to direct traffic.
• If you believe that the number of parking spaces will be insufficient, then you should use your various information channels early on and inform visitors to use other modes of transport.

5.3.5 Event transport and access routes
5.3.5.1 Event transport routes
Almost all events generate transports in the form of lorries, wheel loaders and buses, or lighter vehicles such as cars and minibuses. In order to minimise the risk of traffic disturbances, poor accessibility or that visitors and staffers being run over, you should set up transport routes outside, and sometimes inside, the event area. Identify which areas must be reachable by vehicles, and then investigate what the possible transport routes are.

Examples of transport routes at the event include:
• main transport routes
• roads to stages and backstage areas for artists and trailers
• wheel loader routes from stockpile areas or similar
• roads for transport of visitors.

These paths should be free from visitors, other traffic and parked vehicles. This increases accessibility and reduces the risks associated with heavy vehicles. In order for a transport route to function it should be designed as a loop, or have a turnaround zone, so that longer vehicles can leave the area without problems.
If there are no existing transport routes in the area, discuss with the police and the municipal traffic coordinator about the possibility of creating transport routes solely for the event.

5.3.5.2 Transports inside the event area
Try to avoid traffic inside the event area during the event’s opening hours, in order to reduce the risk of damage to equipment and people. If possible, restrict the movement of traffic at the event area to emergency services vehicles and transport that is absolutely necessary.

It might be a good idea to escort necessary transports, such as cleaning vehicles and the like, in the event area. An alternative is to set up special transport routes at the event area.

5.3.5.3 Access routes for emergency services vehicles
All events should have adequate access routes for emergency services vehicles. So that they are not obstructed by other traffic, visitors or parked vehicles in the event of an emergency. Set up the event’s access routes in consultation with the emergency services.

The need for access routes for emergency services vehicles varies depending on the event. The emergency services can provide a good overview of which access routes might be needed. A general rule is that an event should have enough access routes for emergency services vehicles to be able to reach all parts of the event area, including the campsite. An access route for emergency services vehicles should always be indicated by a sign.

In addition, the access route should be designed in a way that guarantees emergency services vehicles can reach their destination. The access route should have a free height of 4 metres, a bearing capacity that corresponds to an axle load of 100 kN and a hardened surface of gravel, asphalt or similar material. Straight stretches should have a width of 3 metres and curves should have an inner radius of at least 7 metres.

An access route should have the design of a “loop”, so that emergency services vehicles can leave the scene of the accident without having to turn around. In addition, an access route must be free of obstacles such as vehicles, visitors or snow.

Access routes should be connected to any medical assembly points. Read more about access routes and preparedness maps in Section 18.3.2.

5.4 Electricity and lighting installations
Improper or incorrect electrical wiring is a common cause of fire. Electrical installations can give rise to high temperatures, short circuits, or sparks that ignite rubbish or dust. Electricity can cause lethal accidents and serious injury to artists, workers and visitors if the wiring is improper or hastily assembled. This section provides guidance on electrical wiring at events. Designing electrical installations requires the services of an electrician. For more information, visit www.elsakerhetsverket.se.

5.4.1 Temporary electrical installations
In practice, all installations at an event can be regarded as “temporary electrical installations”. Temporary installations are assembled before the event and dismantled after the end of the event.
The promoter will usually be the coordinating party and the one responsible for the temporary installation. As the person in charge, you are obligated to monitor the installation and make sure that it is installed and maintained in a way that ensures the necessary safety for people and property. In addition, the person in charge must make sure that the installation work is headed by a person who has the competence and knowledge of the applicable regulations required for the work in question.

Electrical installations may only be carried out by an electrical fitter, or by an electrician under the fitter’s supervision. For temporary installations, this rule applies to all operations that require tools. For more information, visit www.elsakerhetsverket.se/en/ This means that you may install cables with contacts yourself, while an electrical installation licence is required for any work that requires a tool. Therefore, you should always hire a licensed electrical installer for all operations on the installation.

Temporary installations are often in demanding environments, and must tolerate treatment that results in lot of wear and tear. The person in charge must make sure that someone is monitoring the electrical installation. Monitoring means that the installation is systematically watched over and controlled, and that actions are taken when necessary. This should be carried out continuously during the event. In general, electrical equipment and wires should be kept away from areas where visitors are present. If this cannot be avoided, various types of mechanical protection should be considered, such as wire coverings. Special attention should be paid to extension cords and connection lines.

Connection lines in outdoor environment are one of the most common sources of electrical accidents. Read more about cable types and cable protection in Section 5.4.1.4.

At many events, the existing electricity grid will not be sufficient as a power source. Stages, vendor’s markets, and attractions consume large quantities of electricity, which is why it is often necessary to set up external energy sources, such as generator aggregates. Common temporary electrical installations at events are described below, as are what to keep in mind when installing and maintaining them.

5.4.1.1 Generator aggregates
If generators are used at the event, then you should carefully think through where to put these.

Make sure that the following requirements have been satisfied when deciding on the siting of a generator:

- A generator aggregate is run by flammable fuel. Therefore, it should always be placed out of reach from pyrotechnics and open flame.
- There should be a specific location for stockpiling of fuel (for longer events).
- There should be enough space for the refilling process (for longer events).
- Neither the generator aggregate nor its fuel may be within reach of the visitors. If the generator aggregate is located in a public area, then it should be marked off by a fence or similar.

There are different types of generators, and they might serve different purposes. Incorrect use can be dangerous. Therefore, all types of generators should be installed by a professional (regardless of whether a licensed installer is required) and in consultation with the fire & rescue service.

If the generator is to run the temporary installation along with the regular grid, then there are special requirements. In these cases, you should contact the owner of the electricity grid. Read more about technical instructions for installation and operation of generator aggregates in SEK (Swedish Electrical Standard) Handbook 447.
5.4.1.2 Final distribution assembly
Final distribution assemblies should be clearly indicated, isolated and out of reach from the event crowd. If the final distribution assembly is located outside, then it is important that it is protected from rain and moisture.

All temporary final distribution assemblies, both indoors and outdoors, must be equipped with an RCD (Residual-current device) and be labelled with warning signs. Please note that certain older final distribution assemblies might lack an RCD. Therefore, you should check with the supplier that the final distribution assemblies ordered do, in fact, have such devices. It is the supplier’s responsibility to make sure that the final distribution assemblies are tested and error-free.

5.4.1.3 Sectioning and circuit breakers
Sectioning is the division of the event’s electricity grid, which allows you to turn off the electricity at selected parts of the grid. It is important that there are a number of circuit breakers. If something were to happen which would require that you shut down parts of the event’s electricity grid, due to repairs or accidents, it should be possible to do so without affecting the rest of the event. You should therefore make sure that there are main power switches for:
- stages
- special effects
- lighting or electricity for all focal points
- markets and vendor booths
- emergency lighting
- general lighting.

Consult the supplier of the electrical installation for assistance with including this into your system.

5.4.1.4 Cable types
There are several types of cable. The ones there are relevant in this context are the regular underground cable and the power supply cable (rubber cable).

Underground cables lack a contact. Instead, they have a shell in rigid plastic and are fixed between the final distribution assembly and a distribution plant, for example. An underground cable is usually better protected than a connection cable.

However, events mostly use regular cables, i.e. connection cables. Since connection cables are relatively sensitive, they must be protected from possible damage by crowd members, transports, etc. to which they are vulnerable. Temporary cables should be buried, suspended or covered with cable protectors. That way, you avoid having unauthorised people coming in contact with the cables, or the cables being damaged.

Connection cables are available in various models with a varying level of protection from mechanical strain. A rule of thumb is to always use a sturdy model, since the cables might be moved from their original location during the event. Examples of mechanically sturdy connection cables include REVE and H07RN-F.

Suspended cables
Keep the following in mind when suspending cables: The cable should run along a earthed suspending wire in order to ensure that it does not sink or fall down. Without a suspension line, the attachment points must not be more than 15 metres apart for the REVE cable type. The cable should hang at a suitable height to prevent direct contact. The recommended height for a cable over a trafficked road is 6 metres (4.5 metres is the highest permitted vehicle height).
Buried cables
Earthed cables should preferably be buried, while connection cables are not intended to be buried. Instead, they should be put in a pipe in the ground, from where they can easily be pulled in and out for monitoring purposes, among other things. More information on how the cables can be used is found in the manufacturer’s instructions.

Buried cables should be at such depth that:

- there is no risk of heavy vehicles, buildings, etc. crushing the cable
- unauthorised people cannot access the cable.

The depth varies between 0.25 and 0.55 metres, depending on the location. The depth must always be adjusted according to how the ground is used, for example if iron bars are inserted into the ground when putting up at tent.

Surface cable
Avoid putting cables on the ground across focal routes or in front of the stage, as this increases the risk of someone tripping over them. A surface cable that goes through a public area must not have any splices. In addition, the cable must be covered with a cable covering to avoid damage from crushing, pressure and cutting. In order to avoid tripping, the cable covering should be clearly marked. Covering for power cables are to be marked in yellow.

5.4.2 Total electricity requirements for the event
It is important to form a clear picture of the amount of electricity needed to operate the event. You should let a licensed professional estimate the total electricity requirements for the event. An incorrect assessment could lead to parts of the event suffering from power failure, which in turn increases the risk of other incidents, installations that fail to function, and annoyance and confusion among visitors and other participants.

All aspects of an event should be taken into account when assessing the total electricity requirement (unless they are powered by a separate generator). In other words, the assessment should include:

- stages and mixing sites
- standard and emergency lighting
- other electricity (vendors, amusement park, peripheral activities, etc).

Gather specifications from all parts of the event that are to use the event’s electricity, and then calculate the event’s total electricity requirement.

Suppliers of electricity or generator aggregates need complete information on the event’s total electricity requirements and a clear specification of where the electricity is needed.

5.4.3 Electricity for the stage
If possible, there should be a sufficient amount of fixed electricity sockets around stages and the Front of House. By doing this, you avoid using extension cords, multiple sockets and such like. Too many cords and splices increase the risk of accidents and can also lead to complications and unnecessary power failures. A rule of thumb is that there should be as few splices as possible, since they are the weakest point on a cable.

When laying down cables and establishing the electricity supply from stage to mixing site, you should remember to protect the control line, i.e. the cable between stage and mixing site. This is done either by suspending the cable up or by covering or burying a surface cable. See 5.4.1.4 for more information.
order to assess the stage’s electricity requirement, the promoter should request
that the suppliers of sound, lighting and special effects submit their electricity
specifications.

5.5 General and emergency lighting

Besides special effects and stage lighting, two types of basic lighting should be
used at an event: general lighting and emergency lighting.

General lighting and emergency lighting should be installed in such a way
that mistakes or accidents can be corrected without it affecting other systems.
Suitable regulations for how to repair these two systems are under develop-
ment. The systems for general and emergency lighting must be protected from
vandalism and be inaccessible for unauthorised people.

5.5.1 General lighting

All parts of the event area should be equipped with artificial lighting, unless the
event is only planned to be held in daylight. Besides sufficient area and localized
lighting for the venues, you also need sufficient lighting at entrances and exits,
information posts and frequently used crowd routes, as well as at car parks,
campsites and medical areas.

Based on experience, most crimes of violence occur outside the event venue.
Therefore you should consider setting up general lighting outside the event area
as well.

5.5.2 Emergency lighting

Emergency lighting can be defined as all lighting that is switched on or that
remains on during a power failure. The emergency lighting must work even if
the event’s main electricity grid is down, and it should be powered by an inde-
pendent electricity source, such as a generator. This electricity source should
be prepared, ready to be used and dimensioned to sustain maximal stress if all
parts of the emergency system have to be used at the same time. The emergency
lighting should be powered by an independent electricity source and be dimen-
sioned for maximal stress.

5.5.2.1 Outdoor emergency lighting

The easiest way to decide on the location and scope of the emergency lighting
is to base your decision on a risk management plan. For example, emergency
lighting should be located in high-risk areas and in areas where the lack of
lighting could entail a risk of accidents. Design the event’s emergency lighting
in consultation with the police and the fire & rescue service.

Review the event’s need for emergency lighting. The following areas should be
able to be supplied with sufficient lighting even in the event of a power failure:

- entrances and exits
- evacuation routes
- crowd routes
- the crowd area in front of the stage
- other large crowd areas
- medical areas
- crucial work areas for staff
- potential high-risk areas such as roads, or topographical risks such as
  slopes or holes.
5.5.2.2 Emergency lighting in assembly halls
Premises intended for more than 150 people are classified as assembly halls. The following rules apply for the emergency lighting in an assembly hall, according to the Swedish National Board of Housing, Building and Planning statute book BFS 2006:12:

- Emergency lighting should be available throughout the entire assembly hall as well as at all medical areas, firefighting equipment and alarm points.
- Brightness must be at least one lux on the least lit floor in the premises.
- Brighter lighting (five lux) is recommended for stairs and other changes in level.
- Lighted signs with pictograms must be available to indicate the direction to evacuation routes.

5.5.3 After-dark inspection
In order to find out where in the event venue there is a need for lighting, the promoter can conduct an after-dark inspection, preferably together with the relevant agencies. This means that the event area is inspected after dark and that areas unlit by existing lighting are identified. This way, the promoter learns where extra lighting is needed.

5.6 Water
Good access to water is important, both at large events and at small events that last longer than a couple of hours. However, the need varies depending on the event’s size and length; events that last for an entire day or that contain campsites will require a greater amount of water.

5.6.1 Drinking water
The human body consumes water, particularly when moving around, when in warm temperatures and when consuming alcohol. Lack of water can lead to dehydration, which in turn weakens the body, which entails increased risks. A weakened visitor runs a much greater risk of having an accident, e.g. during audience movements in front of the stage.

Dehydration also affects the judgement of both visitors and staffers, which can lead to misjudgements and poor decisions. Good access to free drinking water is very important at events where you can expect that visitors and staffers will have to rehydrate. This applies both to indoors and outdoors events. The need for drinking water depends on the weather, the length and size of the event, the number of visitors and whether alcohol is consumed:

- Heat, sunshine, poor ventilation or high audience density will increase the need for water.
- The longer an event is, the greater the need for drinking water.
- Water should be available within reasonable distance of all visitors and workers.
- Plan for one water station per 3,000 visitors.

Consumption of alcohol increases the need for drinking water. The promoter should ensure access to drinking water at the following locations:

- Parts of the event area that the visitors has access to
- Areas for those who work at the event
• Areas for vendors
• Campsites
• The stage pit.

It is important that you prevent the occurrence of bacteria and other contaminations in the drinking water. Therefore, you should make sure that the water source is not sensitive to the weather and that it cannot be damaged.

If the event uses municipal drinking water, water quality should be checked if temporary water pipes are used. If the event uses another water source, water quality should be inspected before use.

In general, all water should preferably come from one main source. If this is not possible, an alternative would be to set up water depots in the form of cisterns.

Cisterns for water supply impose rigid requirements in terms of maintenance and hygiene tests, and all water depots should:
• have free access
• be clearly indicated
• be lit up at night (if they are to be used at night)
• have a self-closing device, i.e. water should not come out when no one is using it
• be placed on a drained surface
• be placed and designed to accommodate people with disabilities.

5.6.1.1 Distribution of water to visitors
When the event staff hands out water to visitors at the stage pit, among other places, you should make sure that:
• the staff handing out the water are given an opportunity to wash their hands
• the staff has access to disposable towels
• the staff hands out the water in disposable cups
• the staff does not have to fill the cup completely (since it will probably be thrown away after the visitor has quenched his or her thirst)
• the staff avoid having several people drinking out of the same bottle if water is handed out in water bottles
• the water source is clean and cannot accidentally be contaminated during the event.

5.6.2 Water for hygiene
Running water is needed in order for visitors to be able to look after their personal hygiene. Therefore, running water should be installed in connection to the event’s sanitation areas and possibly next to food vendors, depending on the distance to the nearest sanitation area.

Make sure that there is enough water. Remember that showers, washbasins and other water depots for sanitation needs use up a lot of water. Read more about hygiene and sanitation in Chapter 10.
The stage is the heart of the event. The crowd gathers here to be part of the experience. The stage is also often the event’s largest focal point. Therefore, the stage and area around it require well-developed safety planning and an implementation of safety-related measures.

6.1 The stage and stage area

The stage and stage area do not involve just the performance area itself, but also the area around the stage: the backstage, the stage pit, the front of the house, and the audience area.

Example of siting of areas and objects around the stage.

When booking a stage, the promoter should ask the supplier for the technical specifications of the stage, or what is known as a structural report.

A structural report can or should include:

- Stage floor plans
- Stage wind resistance
- Ballast requirements
- Load plans
- Total weight of the stage and what ground loadbearing capacity is required.

Ask the stage supplier to explain how the limit values should be interpreted and which safety regulations apply in managing the stage.
6.1.1 Stage pit

The area between the stage and the crowd barrier is called the stage pit and is a working area mainly for pit staff, but also for stage staff and photographers. Anyone who does not work in the stage pit should not have access to it during an ongoing gig.

The stage pit should be large enough for it to be possible to work there. The depth of the stage pit – that is, the distance between the crowd barriers and the edge of the stage – should be dimensioned based on several factors:

- Sufficient work space. There should always be plenty of work space for the pit staff.
- Stage height. The higher the stage, the deeper the stage pit.
- Depth of the stage. If the artist is standing far back on the stage, the pit needs to be deeper so that the audience up in front can see the artist.
- Need for a media pit. If a special media pit is used, the stage pit should be deep enough that there is still adequate workspace for safety staff.
- Height of the visitors. An audience with short people generally needs a little deeper stage pit in order for those standing up in front to be able to see the artist. Stand in various places on the stage and in the audience space to check the views.

A rule of thumb could be that the dimensions of the stage pit between the crowd barrier and the edge of the stage should be around a metre deeper than the stage is high.

Example: At larger concerts, the height of the stage is usually around 2.5 metres. The stage pit should thus be at least 3.5 metres deep. A stage that is 1.5 metres high should have around 2.5 metres of space for the stage pit.

The stage pit should under no circumstances be less than 1 metre deep, but a stage pit should not be too deep, either. Too great a distance between the audience and the artist could lead to the audience losing contact with the artist, which worsens the experience and may cause irritation.

It’s a good idea to have a gate between the stage pit and the audience area, which should be placed in the ‘blind spot’. The lines of sight there towards the stage are such that it is not in the audience’s way. The gate is used to admit and let out journalists, and to let out audience members who end up in the pit, for example through crowd surfing or being lifted over. Also make sure that there are passageways at the edges of the stage to the backstage area so that audience members can be transported to emergency vehicles or first aid staff at the side of the stage.

All passages should be guarded if there is a risk of unauthorized use.

6.1.2 Backstage

The area behind the stage is called the backstage. This space most often contains facilities for the artists, stage staff, and production staff. Activities behind the stage for an outdoor stage often need proper transport routes and places for parking trucks and tour buses.

The area behind the stage should be designed so that trucks can be parked next to the loading bay. It is also important that the area be dimensioned so there is space for first aid and, in certain cases, also space for emergency vehicles.

6.1.3 Media pit

If there is enough space, a special media pit can be established on larger stages.
The purpose is to separate pit staff from the photographers so that both groups do not get in each other's way. The media pit can be fenced in or marked off so photographers can avoid moving outside it.

The media pit should be dimensioned according to the expected number of photographers. An alternative is to limit the number of photographers according to the size of the stage pit. At smaller concerts where the media pool is not as large, their presence in the stage pit can be managed through guarding and clarity as to where the photographers have permission to be. Read more about photography in front of the stage in Section 16.4.6.

6.1.4 Front of House
The Front of House (FOH) is the area where the light and sound technicians control and mix the stage’s sound and lights.

The FOH is thus a work space for sound & lights crew. Avoid using the FOH as a spectator area for guests or your own staff. The FOH is normally placed directly in front of the stage, some distance away from the audience area where audience density is expected to be lower. For the FOH to fulfill its function as a control point for sound and lights, there are technical limits to where and how far from the stage it can be located. Place the FOH in consultation with the light and sound suppliers.

The FOH must often be guarded in order to avoid damage or unauthorized access. A very densely packed crowd can lead to a risk of being crushed around the FOH. A good idea is to fence off the area with crowd barriers and to have it guarded by pit staff.

In most cases, the FOH limits the lines of sight. This means that the area behind it is often devoid of audience members. First aid, safety posts, or vendors stalls, for example, can be located here. Or you could try to build an elongated FOH to reduce the loss of lines of sight. To avoid losing the audience area behind the FOH, one or several large video screens can be used to compensate for the restriction of the lines of sight. Read more about lines of sight in Section 6.2.6.

6.1.5 First-aid area by the stage
First aid staff should either be near the stage or on site in the stage area. At large gigs and at gigs where high crowd pressure is expected, first aid should always be by the stage.

It is a good idea to establish a first aid area in direct connection with the stage pit and, if possible, also behind the FOH. In the first aid area, the event’s health care workers can take care of audience members who feel ill or who have injured themselves.

The first aid area by the stage should:
• be sufficiently staffed
• be placed separately from normal footpaths
• be shielded from view from the audience area be shielded from view from the press out of respect for the injured and so staff can work undisturbed
• be located near access routes for emergency vehicles be equipped with mats, blankets, and water.

At larger events, an ambulance can be stationed near the stage’s first aid area so as to shorten departure time. Read more about organising the event’s first aid work in Section 3.7.
6.1.6 Large video screens
Large distances between the stage and the rear of the audience can create strong forward pressure. Large video screens next to the stage provide the audience in the back with a better experience, which can reduce forward pressure. Large video screens are usually placed on the sides of the stage or behind the FOH.

The following are good to think about when using a large video screen:

- The artist must be notified that a large video screen is being used.
- Do not place large video screens so that they block the audience’s lines of sight to the stage.
- Choose a large video screen that fits the area of use. Not all video screens are optimized for daylight viewing or text display, for example.
- Make sure that the scaffolding, stage, or base the screen is placed on can handle the weight. It could be a good idea, for example, to consult with the stage supplier or analyse the load bearing capacity of the ground before a large video screen is hung up.

6.1.7 Guest stands
Many events make use of guest stands to offer specially invited guests a more comfortable way to experience the show. This is most often an issue of guests and sponsors of the artist or the promoter. Locate the guest stand in a suitable place that offers the guests a good experience of the show, without taking up too much audience space.

6.1.8 Stands for the disabled
At indoor and arena events, people with disabilities can often make use of existing audience space; think, however, about ensuring that the paths to these spaces are accessible to people in wheelchairs. At outdoor events, the promoter should establish stands reserved for people with disabilities. These are often called wheelchair stands but should also be used by others who, because of their disabilities, must be able to sit down. Read more about how these stands should be designed and where it is suitable to locate them in Chapter 13.

6.2 Siting of the stage
The stage, the siting of the stage and its surrounding area are especially important to plan from the point of view of safety, since many people will be gathered on the stage. The safety coordinator at the event should be part of the discussion on locating and dimensioning the stages and their audience areas.

In locating the stage, attention should be paid to the following aspects:

- the capacity of the audience area
- the surface of the audience area
- geographic factors
- entrances and exits in the audience area
- evacuation routes and access routes for emergency vehicles
- lines of sight.

6.2.1 Audience area capacity
The audience area in front of the stage must be large enough to accommodate everyone who wants to see the show. Be careful to estimate the capacity of the audience area based on the actual audience area. Read more about audience capacity in Section 4.3.
6.2.2 Audience area surface

It is important that the surface of the audience area is durable and can take the wear and tear the visitors subject it to. Think about the fact that the stresses are greater with precipitation. The surface of the audience area by the stage should be level, and free of objects and irregularities that people can trip over. Read more about various types of surface in Section 4.1.2.

Poorer surfaces, such as meadowland and sod, can be strengthened favourably by spreading out wooden chips or bark. The bark sucks up moisture and reduces both the risk of slipping and wear and tear on the base. These measures, however, can be expensive to implement since it is costly to restore the surface to its original condition.

At indoor events, the floor may need to be protected from damage. There are fireproof tarps or mats that can be used, but make sure there is no risk of tripping involved.

6.2.3 Geographical factors

The stage should be placed with allowances for those living nearby. If possible, locate the stage aimed away from residential areas to reduce the noise level. Try also to use natural sound barriers – forests and level differences, for example. Also think about whether the surroundings can disrupt the performance – for example, the noise from a heavily travelled road or airport.

Locate the stage so that it is placed suitably in relation to the sunrise and sunset, and use this to the advantage of the experience. Read more about other factors in Section 4.1.1.

6.2.4 Audience paths to and from the stage area

The stage and stage area should be located so there is plenty of opportunities for the audience to get in and out of the audience area. The paths the audience uses to reach the audience area should be properly dimensioned so as to avoid crowd congestion when entering and exiting. These focal routes are especially vulnerable before and after the performance. Read more about focal routes in Section 4.3.1.4.

The evacuation routes should be located so that all sections of the audience can easily reach an exit from the audience area. If possible, locate emergency exits on both sides of the stage. The evacuation routes must always be clearly marked, and the audience should be informed of them. Read more about evacuation routes in Section 7.5.
6.2.5 Transport and access routes at the stages
Artists and production staff need transport routes to the area behind the stage. These transport routes, moreover, need to be quite ample, as large trailers are often involved. Make sure these transport routes are separate from the audience area so as to reduce the risk of audience members being knocked down or rushing the artist’s vehicle.

A rule of thumb could be that transportation should never be driven through an audience area.

In an emergency situation, emergency services vehicles must be able to reach both the backstage area and the audience area unhindered. Discuss the siting of access routes for emergency services vehicles at the stage with the local fire & rescue service. Read more about transport and access routes in Section 5.3.5.

6.2.6 Lines of sight
A line of sight is a line of unobstructed visibility between the audience and the performance being watched. Lines of sight affect how the crowd moves and where they prefer to stand and avoid standing.

Review the lines of sight of the stages. This can provide information on where the audience will want to stand. In this review, it can also be discovered whether there are areas that can be made more or less attractive for the audience through changing the lines of sight. For example, angling the stage a little bit can change the lines of sight radically.

It is important that the audience have wide lines of sight with the stage. This prevents the audience from moving forward and towards the centre of the stage to see better. Sufficiently broad lines of sight discourage too much audience density in front of the stages, thereby reducing the risk of injuries.

Sometimes it may be necessary to limit the visibility of the stage for the audience. This can be done by removing visibility in certain areas in front of the stage with planking, fabric covering, or similar things. In some cases, such ‘sight dampeners’ can be used strategically to reduce audience volume in certain areas, such as by a gate in the crowd barriers, at an ambulance access point, or in the first aid area. This can also be done to create ‘blind’ areas at the edges of the audience, where people can go to cool down.

Avoid offering good lines of sight to the stage at the points where visitors come in. The audience will be very willing to stand right there, and it can be difficult to fill the whole audience area efficiently.

6.3 Crowd barrier
In almost all cases, some type of crowd barrier will be needed to separate the audience area from the stage. Different types of barriers can be chosen, depending on the gig and the crowd load.

A crowd barrier serves several purposes. It must:
- offer the audience support in the form of a solid, level surface at the proper distance from the stage
- give the pit staff a defined work space in front of the stage
- prevent the audience from reaching the stage and the artist.
At a gig where little or no crowd pressure is expected, the crowd barrier tends most to screen off the stage from the audience area, prepare a work space, and be primarily a symbolic barrier. The crowd barriers thus does not need to be of the same quality and design as for a gig with high crowd pressure.

At gigs where high crowd pressure is expected, a crowd barrier that is especially designed for the purpose should be chosen. A crowd barrier should be constructed to handle crowd pressure and should not collapse under any circumstances.

Check also if it is possible to run multi-unit cables through the crowd barrier from the stage to FOH. Read more about safety work around the stage in Section 17.5.

6.3.1 Crowd barrier construction

Modern crowd barriers are A-shaped and have a foot plat for increased stability. It is advisable to mount the crowd barrier free-standing in front of the stage, but it can also be connected to the stage for extra support if the stage is constructed to handle lateral forces.

There are currently no regulations on how much pressure a crowd barrier must take. It is, however, recommended that crowd barriers that can handle at least 10.0 kN per metre length of horizontal crowd pressure be used.

Check the following to reduce injuries in the audience due to crowd barrier construction and instalment:

- Is the front side of the crowd barrier smooth, with no jagged edges or openings where hands, feet, or other body parts can be crushed under crowd pressure?
- Is there any risk that the crowd barrier will move or fall under pressure so that hands, feet, and other body parts may be injured?
- Does the stage barrier have a rounded crossbar to facilitate lifting of crowd members?
- Does the construction of the crowd barrier have any bolts or screws sticking out that the audience, or those working in the pit, can injure themselves on?
- Are there any footplates the crowd can stand on, thereby fixing the barrier in place? The bigger the footplate, the better the crowd barrier will stand under crowd pressure.
- Does the footplate on the crowd side of the barrier present a tripping risk for the crowd?
- Is there a footstep on the stage side of the crowd barrier? A footstep makes lifting work easier for the pit staff, and also works as an observation site where the pit staff can get a general view of the crowd.

6.3.2 Surface for the crowd barrier

The surface the crowd barrier stands on plays an important role in how high of a load it can manage and how it behaves under crowd pressure.

Hard surfaces – asphalt, paving stones, or concrete – could mean the crowd barrier slides towards the stage under high pressure. This can be remedied through increasing the friction between the crowd barrier and the surface with rubber mats or similar things. Another alternative is to place box pallets from the barrier right up to the stage. This requires, however, that the stage is constructed to handle some lateral pressure. Consult with the stage supplier before box pallets are used.

Keep in mind that a crowd barrier with large footplates reduces the risk of the crowd barrier being dislodged under crowd pressure, and that a muddy surface can make the barrier slide, with a risk that audience members either slip or fall.

6.3.3 Erecting the crowd barrier

Which barrier arrangement to choose depends on the size and type of the concert, the crowd profile, and the expected crowd size. The crowd barrier should therefore be arranged so that it is relatively easy for crowd members to get out of high-pressure areas.

Regardless of how the crowd barrier is built, all sections of the crowd barrier that the audience comes in contact with should be manned. There is always a certain risk that crowd members can get stuck, or be injured, by being pressed against the barriers. Unattended crowd barrier (or ‘surge barriers) should thus not be set up out in the crowd.

Keep in mind the following when erecting crowd barrier:

- **Angles.** Sharp angles in the barrier arrangement should be avoided. Angles should be made as wide as possible so that there is no risk of crowd members getting stuck or having problems getting out of the area because of high crowd pressure. If any crowd member gets stuck in an angle, it can be difficult to get out of it. Pit staff should therefore be extra attentive to angles in the crowd barrier.

- **Podium, catwalk, stage lip and risers.** In certain gigs, a long podium, or catwalk, is used so the artist can go out to get nearer to the audience. A podium should always be lower than the stage itself, otherwise the lines of sight are lost for the crowd on the sides. The podium should also be equipped with crowd barriers. The crowd barrier should cover the entire length of the podium and provide enough work space for the pit staff between the podium and the crowd barrier.
6.3.3.1 Straight barrier arrangement
For smaller gigs, gigs with limited space, or gigs where low crowd pressure is expected, using a straight barrier arrangement is advisable. If there is space and it is feasible, however, a convex or angled barrier is recommended.

**STRAIGHT BARRIER ARRANGEMENT**

Advantages: Easy to construct
Disadvantages: Do not prevent occurrences of crowd waves. No increased work space in areas with high crowd pressure.

6.3.3.2 Convex barrier arrangement
For medium-sized gigs where a certain amount of crowd pressure is expected but there is little risk of crowd swells, a convex stage barrier may be used. This arrangement is rounded, or angled, and curves outward towards the crowd in the middle. The curve can vary as needed.

Make sure that there is always space on the sides if a convex barrier arrangement is used, so that the crowd ‘sliding’ out towards the sides has enough unobstructed space. A curved or angled barrier should never be concave – that is, it should never curve inward towards the stage in the middle.

**CONVEX BARRIER ARRANGEMENT**

Advantages: Larger work space where crowd pressure is greatest. Easier for crowd members to get away from the middle of the stage. Increases the number of spots in the front row for spectators somewhat.
Disadvantages: The stage pit takes space from the audience space. Increased distance between artist and audience can reduce the audience experience somewhat. There should be space on the sides of the crowd barrier.
6.3.3.3 Barrier arrangement with ‘pier’ (or ‘finger arrangement’)
At large concerts where there is a high risk of crowd movement and crowd swells, a barrier arrangement with a ‘pier’ (also called finger arrangement) can be used.

This formation involves a convex barrier arrangement with a ‘pier’ jutting out into the crowd area. The length of the pier can vary, but the width should be sufficient for the pit staff to be able to work in it. A crowd arrangement with a pier should be constructed so that sharp angles are avoided. Try to keep the angles as large as possible.

Advantages:
- Good protection against crowd swells and lateral audience movement.
- Large work space where crowd pressure and crowd concentration is greatest.

Disadvantages:
- The pier takes space away from the audience area. Increased risk of turbulent crowd movements, or crowd members getting stuck at the base of the pier.
  (Heightened attention from the pit staff can reduce this risk.)

6.3.3.4 Double or multiple barrier arrangement
At large gigs where high crowd pressure and a risk of large crowd movements can be expected, a double or multiple barrier arrangement should be considered. This means that a barrier system with two or more stage pits is built, which is also covered by a barrier in the back. The barrier that forms the back side should, however, not be of the same quality as the crowd barrier on the crowd side.

The extra stage pits divide the audience into ‘enclosures’. Through entry control, the promoter can control the crowd density in each enclosure. When an enclosure is full, the promoter can close it to further entrance, and this way avoid it being overcrowded. All pits and sections of the barrier system should naturally be monitored by pit staff.

If a double or multiple barrier arrangement is chosen, it is important to review the evacuation opportunities from the different enclosures. There should be adequate evacuation opportunities and routines for evacuating the audience from the enclosures. Using a double or multiple barrier arrangement imposes stringent requirements on crowd management. It is important that the promoter sees to it that sections are filled to a reasonable level and that the crowd is informed about how to get to different enclosures.
DOUBLE/MULTIPLE BARRIER ARRANGEMENT

Advantages: Good opportunities to control both crowd density and crowd pressure. Good opportunities for pit staff protection against crowd swells and lateral crowd movement. Large work space where crowd pressure and crowd concentration is greatest. No crowding at the back of the section means quiet areas where crowd members can go if they do not feel well.

Disadvantages: Somewhat reduced experience for those crowd members who wish to, but have no opportunity to, get to the first section. Difficult to provide the crowd closest to the stage with adequate evacuation opportunities.
CHAPTER 7
ENTRANCES AND EXITS

Photo: Malin Sjöblad
Entrances and exits are two of the event’s largest focal points. Statistically, they are also some of the event’s greatest risk areas, since they involve bottlenecks in a large crowd flow. All the visitors at certain events will pass through the event’s entrances and exits several times, which will likely generate lines or crowds. Therefore the risk of high crowd pressure and irritation among visitors also increases.

Well thought-out siting, dimensioning, and management of the event’s entrances and exits can reduce many of the risks.

### 7.1 Siting of entrances and exits

Siting of entrances and exits should be well thought out, as this affects the crowd flow both inside and outside the area. There should be plenty of space in front of and behind the entrances for those standing in line, for any queuing system, and for visitors who have just passed through.

The area around entrances and exits should be kept free of traffic and focal points, e.g. vendors and performances. Make sure the area after passage through the entrance or exit is not too attractive – that is, visitors don’t remain standing after the passage but are instead encouraged to move on.

### 7.1.1 Surfaces for entrances and exits

An entrance/exit should be placed on a level surface. Sloped or level differences in front of or behind can involve undesirable pressure in the direction of the incline, and therefore risks.

The surface should be such that wear from visitors and precipitation do not make it unusable. Grass, meadowland, and suchlike easily become muddy and slippery after precipitation. Try, therefore, to locate entrances and exits on asphalt, gravel, or reinforced grass.

### 7.1.2 Siting versus crowd flow

It is important to map crowd routes to and from the event venue. Often, there are more or less popular crowd routes, so if there are several entrances and exits it is good to locate them so that crowd pressure is distributed.

The placement of the entrance or exit affects crowd routes both at and outside the event. If possible, try to angle the entrances and exits so that they meet the crowd flow at the correct angle. Visitors tend to go towards the part that is closest, which means that the visitor load is not distributed evenly along an obliquely angled entrance or exit.

Think about placing the entrances so that the audience area in front of the stage is adequately filled. Visitors usually stop as soon as they enter the lines of sight for the stage, which may mean that they don’t spread themselves evenly over the audience area. It may be a good idea to locate entrances into the public area from furthest back, or that there are several entrances that fill the audience area from several directions.

Visitors who stop just inside the entrance can be an obstacle for those entering. It is therefore important to get visitors to continue further into the area. Focal points should thus not be located next to the entrances, and focal routes should not go straight past.
The following measures can reduce the risk of the crowd stopping right inside the entrance:

- Set out safety staff who can direct the visitors, pass out fliers, maps, and so on, and get the visitors to continue further in.
- Locate any property depository’s a little bit further into the area or premises.
- Make sure there is proper signage indicating the stage, food service, toilets, etc.
- Separate entrances and exits where there are large visitor loads. In such cases, provide signage for the exits so the crowd is aware that the exit is not in the same location as the entrance.
- Setting up organised meeting spots for the for visitors a little bit inside the area, within sight of the entrance but with no risk of crowding, is a good idea.
- Avoid clear views of the stage just inside the admission area so that visitors do not remain standing there.
- The crowd flow to and from entrances and exits should not collide with each other. This is especially important when the entrance and exit are near each other. Also avoid situations where queue formations for different entrances overlap. Read more about lines of sight in Section 6.2.6, about focal points in Section 4.3.1.3, and about focal routes in Section 4.3.1.4.

7.2 Dimensioning of entrances and exits

Entrances and exits involve bottlenecks that disrupt crowd flow, since visitors stop moving, and a crowd is formed. In and of itself a crowd is not dangerous and it is difficult – almost impossible – to prevent a crowd forming in front of an entrance or exit.

On the other hand, there are certain negative consequences to under-dimensioned entrances and exits which the promoter will want to avoid, in the form of high crowd pressure and irritated visitors:

- **High crowd pressure.** A crowd at an entrance or exit can mean that pressure on the entrance or exit increases. The better the promoter is at managing and reducing the risks in queue formation, the smaller the risk of increased crowd pressure.

- **Irritated visitors.** Standing in a line that isn’t moving is frustrating for many people. Even if it is difficult to prevent a line forming in front of an entrance or exit, the promoter can make queuing easier through making sure that passage goes smoothly.

The following rules of thumb can apply in dimensioning entrances and exits:

- Dimension to avoid bottlenecks.
- Always assume that there will be more visitors at any one time than planned, and dimension from that. Read more about safety & security work around entrances and exits in Section 17.2.

7.2.1 Dimensioning of the entrance

How large an entrance should be, and how many entrances there should be, depends on how many visitors are expected, and over how long a period they are expected to arrive. Estimate how many visitors are expected to come at various points in time. This can vary widely depending on what type of event is being arranged.
If it is a matter of a single concert, or a relatively short event, the entrance must cope with managing all of the event’s visitors over an acceptable but relatively short time.

During all-day or multi-day events, the visitor pressure at the entrances is not equally high. On the other hand, such events require a more careful investigation of when the audience can be expected to arrive and how many will come on different occasions.

Always dimension the entrance based on the fact that more visitors can come at the same time than planned, as well as on the fact that people who use wheelchairs must also be able to use the entrance.

All admission areas must have their capacities calculated, and must be built to cope with the most intensive crowd flow. Alongside this, the entrances must have a capacity to cover the event’s crowd peaks so that the entrance of people always occurs smoothly and under control, without lines becoming far too long. Read more about entrance capacity in Section 4.3.2.4.

An entrance should be dimensioned so that the capacity can be increased as needed. It is therefore a good idea to build a few extra holding enclosures.

If the event has several entrances, you should try to estimate where the visitors are expected to arrive at the event and ensure that these more exposed entrances are dimensioned to manage the expected audience load. An entry holding enclosure:

- Should not be narrower than 80 cm.
- Should be at least 1.2 metres wide to be counted as an evacuation route. Read more about evacuation routes in Section 7.5.
- Should be at least 1.3 metres wide, level, and free from obstacles in order to be accessible to disable people. Read more about accessibility in Chapter 13.

### 7.2.2 Dimensioning of the exit

The exits should also be properly dimensioned. The visitors will probably choose the exit closest to them at the end of the event, or the exit that lies in the direction they want to go after the event. The exits nearest the stage are used immediately after a gig, and the exits towards the campsite or parking are used by many visitors at the end of the event.

Study what exits the visitors will use, and dimension them based on the planned visitor load. Ensure that people are always prepared to open up the exit and enlarge it as needed.

Always dimension an exit based on the assumption that more visitors than planned will use it. At most events, the audience in general will leave the event venue at the same time. This means greater pressure at the exits.

If possible, the event should set up special exits that open when the event is finished. These extra exits are only used when the entire event area is emptying out - not during the event itself. Read more about exit capacity in Section 4.3.2.5.
7.2.3 Queuing system

If it is expected that a large audience will arrive over a short time, it may be good to have a queuing system, which will reduce the risk of disorder and crowding at the entrance. When the visitors are in the queuing system, the area must be safe. Pressure will then be less attractive, and increased pressure at the entrance itself is avoided.

The queuing system can be constructed so that pressure from the back cannot propagate forwards.

It is important never to construct a queuing system that people who line up cannot get out of. It is therefore not suitable to construct a queuing system with construction fencing, since this makes the opportunity to leave the queuing system, and any relief of those lining up, more difficult. Use waist-high fencing instead.

A queuing system will only work if the visitors feel it is worth it to line up, that something is always happening, and that the queuing system will get them inside quicker. A sluggish queuing system may very well be abandoned by visitors in favour of more uncontrolled queue formation.

The formation of a queuing system may vary, with either straight or zigzag lines, or a gate system. A straight-queue formation takes up less area and can be used where space is limited, but on the other hand does not always offer any reduction of pressure at the entrance.

A zigzag queue takes up more space, but reduces the pressure at the front. A queuing system with gates can be used at larger arena performances where all visitors pass through the entrance over a short period. Staff will decide when the gates are opened and the visitors can be let in. The gates make it possible to manage large queue formations and carry out various admission elements while in line. For example, the audience can be searched at one gate and have their tickets checked at another.

Note: If the admission areas are also used as evacuation routes, the queuing system can become an obstacle to the evacuating visitors. Make sure, therefore, that admission with a queuing system is not used as an evacuation route, or be prepared to dismantle the queuing system quickly in an emergency evacuation.

7.3 Information at the entrances

Entrances are excellent places for the promoter to keep visitors informed. The visitors are guaranteed to pass through the entrance, and in many cases will also be standing in line. This means they have plenty of time to take in information. Clear information teaches the event’s visitors. Activities such as searching and cautions become easier if the visitors are aware of what applies.

The event should inform visitors around the entrance through loudspeakers or megaphones. It is a good way to convey urgent information, for example calming suggestions in rowdy situations in line, or information that there are plenty of tickets left, or that tickets are sold out.

It should also be apparent from signage whether visitors can leave the event through the entrance or if the exit is located a short distance away from the entrance.

Provide information on signs or large video screens about:

- What is not allowed in the area, e.g. alcohol or recording equipment
• What visitors are not permitted to do in the area, e.g. crowd surfing or stage diving
• What is important to think about – e.g. bringing drinking water along, taking care of each other, and keeping an eye on valuables
• Opening times
• Changes in the line-up
• Other rules.

Make sure that all event visitors can understand the information. Clear information, with a well-arranged layout and good readability is good for everyone. Certain information may be required in alternative formats, e.g. as spoken information so it can be understood by people with vision impairments.

It is also important to mark entrances, exits, and most of all evacuation routes with high-contrast signal colours. It is then easier for people with impaired vision to orient themselves. Be careful, however, to locate information so that visitors do not stop in places where they obstruct crowd flow and cause bottlenecks. Place the information outside the entrance or a good distance inside the entrance. Read more about information for the audience in Section 14.4.3.

### 7.4 Lighting and signage

Proper lighting and clear signs are important conditions for queuing and passage to occur smoothly and safely. Crowd management at the entrance is significantly facilitated with clear signage.

It should also be apparent from signage whether visitors can leave the event through the entrance or if the exits are located in another direction.

The signs should be of standard design, large, and located so that as many people as possible see them. This is especially important for emergency exit signs. Read more about signage in Section 5.2.

Make sure that there is proper lighting for people in line and for those working around the entrance and exit. Poor lighting makes the work of entrance and safety staff more difficult and can cause rowdy behaviour among the visitors. Read more about lighting in Section 5.5.

### 7.5 Evacuation routes

It must always be possible for event visitors to evacuate the event area and premises if needed. All evacuation routes – both inside and outside – must be clearly marked and lit. The audience, moreover, must be informed of the evacuation routes.

The area in front of and behind an evacuation route must always be readily accessible – that is, free from obstacles and focal points. Make sure that the evacuation route leads to an area that involves freedom from danger. Evacuation routes, for example, should not lead out onto a heavily-travelled road or into a large crowd.

All evacuation routes should be accessible to people with disabilities. Read more about accessibility in Chapter 13.
7.5.1 Evacuation routes for indoor events

An evacuation route for an indoor event involves not only an exit from the actual premises, but also corridors, stairways, access balconies, and other routes to a safe place.

Base this on the event premises having adequate fire prevention according to the Swedish Accident Protection Act (SFS 2003:778), and that the premises are suited to event operations and the audience size. Read more about evacuation route capacity in Section 4.3.2.6, read more about evacuation routes adapted for accessibility in Chapter 13.

7.5.1.1. Evacuation routes for assembly venues and event tents

An assembly venue is defined as premises intended for more than 150 people, which in effect means that all event premises are classified as assembly venues. The same rules apply to event tents – that is, tents intended for more than 150 people. Read more about tents in Section 11.6.3.

The requirement for a number of evacuation routes in an assembly venue and event tent is based on how many people the premises can accommodate. The following rules are taken from the code of statutes of the Swedish Board of Housing, Building, and Planning and apply to fire cells intended for more than 150 people:

- The unobstructed width of each evacuation route must be at least 1.2 metres.
- The capacity of the evacuation routes is calculated at 150 people per metre of unobstructed door width.
• If the widest evacuation route is blocked, the other evacuation routes together may take a maximum of 300 people per metre of unobstructed door width. Read more about how evacuation routes affect audience capacity in Section 4.3.2.6.

The requirement for evacuation routes may vary depending on the nature of the event. The fire & rescue service may, after supervision, come up with further requirements applying to the number, dimensions, and management of the evacuation routes.

Ensure that:
• the evacuation routes are marked
• the evacuation routes are free of obstacles
• the doors on the evacuation route swing outwards in the direction of evacuation
• it is easy to open the doors to or on an evacuation route
• there is always high preparedness to open the evacuation routes in the event of an emergency situation.

7.5.2 Evacuation routes for outdoor events
An evacuation route at an outdoor event can, for example, be made from several sections of fencing which are opened in an emergency situation.

There is nothing in Swedish rules and guidelines for outdoor events that applies to the size, siting, and number of evacuation routes. For outdoor events, however, the following rules of thumb may apply:
• Ensure that there are evacuation routes from all parts of the event area.
• Locate evacuation routes around the audience area of the stage. The audience should be able to evacuate the audience area in all directions. Evacuation routes should, therefore, be located on all sides of the audience area of the stage.
• Locate evacuation routes around entrances and exits. In an emergency situation, a large part of the audience will try to get out the way they came in.
• Make sure that there is always high preparedness to open the evacuation routes in the event of an emergency situation.
CHAPTER 8
CAMP SITES

Photo: MSB
This chapter deals with safety around the event’s campsites – regardless of whether they are temporary or permanent.

The campsites at an event should be included in the same safety review as the rest of the event, since service and safety should be just as good there as in the event area.

8.1. Siting of the campsites

Often the event’s campsites are temporary; that is, they are not used as campsites during the rest of the year. This presents a challenge, as there is no permanent infrastructure, and they must have the capacity to manage a great many visitors all at once.

At permanent campsites there are often showers, public conveniences, and paved roads, and plantings and fences that function as lot dividers and fire-breaks. Often there is also permanent electricity, marked fire areas, and opportunities for cooking.

A temporary campsite, on the other hand, must often be put into order quickly prior to an event and then restored immediately after the event is over. The campsite should preferably be located in a flat, open area. The surface should be properly drained and adapted to the strains that several days of camping can involve. Avoid high grass, stumps, and stony ground.

Locate the campsite adjacent to the event venue. It should be possible for visitors to get from the campsite to the event area without having to cross heavily travelled roads.

8.2 Area of the campsite

The area of the campsite should be dimensioned with regard to the expected number of visitors. How much area is needed varies, depending on the type of event and the crowd – the audience at a rock or pop concert generally requires less area per tent than the audience at a family event.

The following can serve as targets:

- **Rock or pop event**: approx 430 tents/ha
- **Family event**: approx 215 tents/ha

(One hectare [ha] is equal to 10,000 m² – that is, 100 m x 100 m.)


Overestimate when you calculate the space. It is not unusual for parts of the campsite to be unusable; for example with heavy precipitation, or because the space is not being optimally used due to haphazard tent placement or inadequate ground quality.

Tent fronts and tarpaulins between tents often take up large amounts of space, and it is up to the promoter to decide if they are allowed on the campsite. It is important to take a position on this and inform people in advance, so that visitors understand this before they arrive.
During the permit process, the promoter submits a proposal on how many people the planned campsite can accommodate. The role of the police and the fire & rescue service is to then review the proposal for staff numbers in relation to such things as physical conditions, organisational fire prevention, and risks.

It is a good idea to guide campsite guests to a suitable tent area to ensure:
- that the capacity estimate is kept.
- that the fire prevention regulations are kept and that tents do not take more space than estimated.
- that no ‘dead’ areas develop and take up capacity space.

Guidance can be managed by special campsite hosts who show visitors to their locations, for example, or through clear information on signs. Read more about signage in Section 5.2.

To reduce the risk of fire, the grass in the campsite can be cut continuously prior to the event. A campsite full of new-mown grass that can easily catch fire is thereby avoided at the same time as the risk of allergic reactions is reduced.

8.3 Layout of the campsite
A campsite should be easily surveyable. Aim for a clear, simple structure where it is easy for visitors to find their way. The facilities and functions available at a campsite depend on the size, event type, and how long the campsite will be occupied. The following areas and functions may be found in a campsite area:

- **Infrastructure**
  - campsite areas
  - entrances
  - waste management areas
  - transport routes for service vehicles

- **Visitor services**
  - access to food and drink
  - toilets, washbasins, and showers

- **Staff and authorities**
  - area for campsite staff and licenced security guards
  - area for medical servic, police, and fire & rescue service access routes for emergency services vehicles

- **Safety**
  - fire-breaks
  - safe marked fire areas
  - observation sites
  - lighting.

Consider dividing the campsite up into different areas – separate areas for trailer camping, motorcycle camping, and family camping, for example.

8.3.1 Campsite entrances
The campsite entrances should be given the same attention as the entrances to the event area; that is, they should be capacity controlled and designed according to the same principles as a normal entrance. Read more about entrances in Chapter 7.
The campsite entrances are good places to inform visitors of what rules apply in the campsite and the festival area. Here, the visitors can be informed of different rules that apply, for example what applies to party tents or grills, special rules of conduct, the latest playlists, etc. At the entrance, the promoter can post information on where the most important facilities are located – marked fire areas for cooking, toilets, vendors, and so on. A detailed map or explicit signage work wonderfully.

8.3.2 Access routes for emergency vehicles and transport routes at the campsite

Both access routes for emergency services vehicles and transport routes to and from the campsite area are required. Access routes should be planned in consultation with the fire & rescue service. It should be possible to reach all parts of the campsite, as well as the medical service site, from the access routes.

Transport routes should also be set up within the campsite. Heavy vehicles are often required for maintenance of public conveniences and waste management. Set up fixed transport routes where heavy vehicles can drive without risk of injuring any campsite guests. Read more about transport and access routes in Section 5.3.5.

8.3.3 Availability to food and drink

Since the campsite functions as a residence for event visitors, there should be opportunities to purchase food at the campsite area. Concentrating food sales to a central site makes cleaning and waste management easier.
The advantages of food sales at the campsite are that the campsite is more enjoyable, and unnecessary streams of visitors leaving the area to eat are avoided. The opportunities for visitors to buy food in the area can also limit the use of single-use grills, open fires, camp stove, and similar equipment that involve a risk of fire.

There should always be access to clean drinking water at a campsite. At larger campsites, there should be several water caches to increase accessibility. Access to drinking water should be ample enough to cover increased need – for example, in hot weather. Read more about food sales in Section 9.4.3, and about drinking water in Section 5.6.1.

8.3.4 Sanitation areas at the campsite
It is important that people living at the campsite have the opportunity to attend to their hygiene. Visitors don’t enjoy a campsite where the toilets are not serviced, or where there aren’t enough of them. It is therefore important to dimension access to toilets and washroom facilities according to peak need; that is, in the mornings and after event closing times. Read more about sanitation areas in Chapter 10.

8.3.5 Areas for campsite staff and public authorities
It may be a good idea to establish special areas for campsite staff, police, medical services, and the fire & rescue service. At smaller campsites, a common area may be enough, while at larger campsites several separate areas may be needed.

The siting of such areas depends on the needs of the different groups for access routes, isolation, and proximity to the campsite. Siting and design should take place in dialogue with the respective organisations. Read more about the need for separate areas in Section 2.3.

8.4 Campsite safety
The campsite functions as a residence for event visitors, but also as a gathering place where visitors go to hang out and party after the end of the event. This means the campsite, in many cases, requires safety coverage around the clock.

Safety measures at a campsite should be given as much attention as safety measures at the event venue. The risk profile for a campsite is, however, different than the risk profile for an event venue. Safety work at a campsite deals a lot with the management of crowd flow, fire safety, monitoring to maintain general order, safety, and security against crime e.g. theft, assault and rape.

Safety work also indirectly affects the opportunities of the campsite to satisfy the visitor’s needs. A campsite that is improperly equipped with sanitary areas and waste management, or which lacks access to food, is difficult to keep safe. A structured, well-kept campsite invites tidy behaviour. Read more about safety work at the campsite in Section 17.4.

8.4.1 Campsite lighting
At night-time, the campsite requires sufficient light so that people can orient themselves among the tents. There should also be sufficient light for staff on patrol and staff at the sentry posts and observation towers to have a good view of the campsite area. Equip staff with proper torches if it is not possible to arrange fixed lighting installations.
Proper lighting should be given special priority at:

- Entrances
- Sanitation facilities
- Information areas
- Observation towers
- Firefighting equipment posts
- Dark areas and crowded spaces.

Keep in mind, however, that the campsite is also a sleeping area for the event's visitors. Avoid disturbing their sleep with excessive lighting. Read more about lighting in Section 5.5.

### 8.4.2 Fire safety

The risk of fire is often high at a campsite, and the consequences of a fire in a crowded campsite can be devastating. The Swedish Civil Contingencies Agency’s general guidelines and commentary (SRVFS 2004:12) on fire prevention at campsite facilities are recommendations for the purpose of guaranteeing fire safety at campsite facilities, but do not apply to temporary campsites. The guidelines, however, do contain useful information on such things as fire prevention work, distances between tents, training, and much more that could be of use even at a temporary campsite.

The promoter should have a discussion with the fire & rescue service about which safety measures should be taken for fire safety at the temporary campsite to be as high as possible. At large events, the possibility of having a fire engine stationed at the campsite should also be considered. Read more about fire safety in sections 2.1.2 and 2.3.3.

#### 8.4.2.1 Safe distances between tents

At a temporary campsite, it can be difficult to maintain a safe distance between tents as recommended for normal campsite facilities in SRVFS 2004:12. At a number of larger events the promoter has taken the following measures in consultation with the municipal fire & rescue service to ensure a high level of fire safety:

- Divide the campsite up into sections surrounded by high-quality fire-breaks. As many of these fire-breaks as possible should be of the same quality as the access routes for emergency services vehicles.
- Issue and uphold a total ban on open flames except in marked fire areas.
- Prohibit padded furniture.
- Increase supervision.

Fire-breaks at a campsite fulfil several functions. Their primary function is to prevent any fires from spreading over a larger area. They also function as transport routes for people living and working at the campsite, as well as for the emergency services. Furthermore, they divide up the campsite and make it easier to for people to orient themselves.

A fire-break should never stop at a dead end. Set up loops of fire-breaks instead, so that vehicles always have the opportunity to drive around. A common method is to set up a grid of fire-breaks. Each section can then be approximately 50 x 50 metres.
Even the campsite sections used for trailers can be divided up into sections surrounded by fire-breaks. A safe clearance of 4 metres between trailers is ideal.

Permanent fire-breaks that are either ploughed or paved with asphalt, gravel, sand, or chips, are better than temporary fire-breaks that are cordoned off or marked with chalk. Permanent fire-breaks are easier to keep free of tents and other obstacles, and they are still functional after heavy precipitation or any damage from event participants. It can, however, be economically difficult to advocate an investment in permanent fire-breaks at a one-time event.

8.4.2.2 Grills and fire pits

Fires in a campsite are a serious problem. Fires often start as a result of inaccurate knowledge of how to handle gas stoves, single-use grills, alcohol burners, and tent stoves.

In most temporary campsites connected to an event, there is a prohibition on open burning so as to avoid fires and burn injuries. The event should therefore offer visitors alternatives for cooking. One way to reduce the risk of fires while simultaneously facilitating cooking for visitors is to set up marked fire areas, where it is possible for them to cook food over an open flame.

Dimension the size and number of fire pits according to the number of visitors. A fire pit should consist of an area with a fireproof surface such as gravel, earth, or asphalt. The fire pits should be clearly marked and separated from the tent area. They should also be guarded or supervised by safety staff with access to firefighting equipment. Read more about guarding the campsite in Section 17.4.

8.4.2.3 Inflammable objects and waste

Rubbish is the biggest source of fires at a campsite. It is therefore important that a campsite has working waste management. See also Chapter 10 – Sanitation, Hygiene, and Waste Management.

Flammable objects increase the risk of deliberately set fires that can be difficult to put out. This concerns mainly padded furniture, as well as so-called ‘party tents’ and tarps. The promoter has the right to prohibit such objects from the campsite.

8.4.2.4 Liquefied petroleum at the campsite

Liquefied petroleum involves the risk of both fire and explosions, at the promoter should, if possible, seek to limit its use at the campsite as much as possible. The promoter has the right to prohibit visitors from bringing liquefied petroleum into the campsite. Keep in mind that many food vendors depend on liquefied petroleum for their operations, and that they should therefore be suitably located within the campsite. Read more about handling liquefied petroleum in Section 9.4.1, and about food vendors in Section 9.4.3.

8.4.2.5 Firefighting equipment

Information on firefighting equipment can be found in the Swedish Civil Contingencies Agency’s general guidelines, SRVFS 2004:12. These do not cover temporary campsites, but can be applied advantageously to them as well.

Below are some useful tips and ideas. Some of them can be found in SRVFS 2004:12, but others are specially adapted for temporary campsites connected to an event:

- No tent should be more than 50 metres from the nearest place with fire extinguishing materials.
• There should be clearly marked signs so that visitors and staff know where the firefighting equipment is.

• The entire campsite area should be guarded by trained safety staff that knows where the fire extinguishers are and how they are used. Guarding can be done from observation sites or by patrolling for the purpose of spotting any fires as early as possible. Read more about safety staff training in Section 3.4.2.

• Set up special fire equipment posts. They can contain more advanced firefighting equipment, such as fire extinguishers, hoses, and fire blankets, as well as first aid equipment.

• Make sure that all firefighting equipment on the campsite is guarded. In an emergency, firefighting equipment must be operational and within arms reach. Unguarded firefighting equipment can be stolen or destroyed.

• Make sure that used firefighting equipment is replaced.

• A suitable type of hand fire extinguisher is the dry extinguisher. If fire patrols on rounds are used, hand fire extinguishers (6 kg) can be used in a sling on the back. This is a suitable weight for carrying over longer periods.

• At larger campsites the promoter, along with the fire & rescue service, can set out water hoses connected to a hydrant as a preparatory measure. When the risk of fire is greater than usual, for example at certain points in time or in drier weather, these hoses can be pressurised and made ready for use.

8.4.3 Clean-up and waste disposal
The campsite functions as a residence for event visitors. Rubbish that remains lying around (or waste containers) is often subject to deliberately set fires. It is therefore important that the campsite be continually maintained with clean-up and waste disposal, as well as taking charge of all waste collected. Read more about waste management in Section 10.3.
CHAPTER 9
PERIPHERAL ACTIVITIES

Photo: Olle Kirchmeier
Many events consist of more activities than the main event itself: food vendors, a marketplace, promotional showcases, and rides are common features. Here, these are called peripheral activities.

**9.1 Liability, contracts and insurance policies**

Peripheral activities are generally classified as weak focal points, but there are several important safety aspects concerning the siting and management of peripheral activities. Read more about focal points in Section 4.3.1.3.

Certain types of peripheral activities require the supplier to be certified, while others require special permission or special safety regulations. Goods that are illegal or violate licensing, copyright, and marketing regulations may not be sold or marketed.

What all peripheral activities have in common is that they involved risks that must be observed and managed – for example, queue formations or changes in crowd flow. All peripheral activities should therefore be dealt with in the event risk analysis.

The promoter is responsible for the event. This involves the promoter making sure that peripheral activities in the area are not conducting illegal operations or involve health or safety risks. The promoter must also make sure that the business owners follow the regulations, laws, and rules specific to their operation so that the peripheral activity is safe.

The promoter is also responsible for the business owner managing the peripheral activity receiving sufficient information on safety regulations and rules at the event.

The promoter should conclude an agreement with the business owner to both ensure that the rules and laws are observed, and to be clear on the conditions for the activity at the event.

In the agreement between the promoter and the business owner it could be agreed, for example, that the business owner:

- has a responsible person on site as long as the peripheral activity is open
- has the licenses, permits and standards required
- follows the event’s specific rules and policies, for example regarding prohibited goods
- follows the regulations, laws, and rules concerning the operation
- manages any handling of liquefied petroleum in accordance with applicable laws. Read more about handling liquefied petroleum in Section 9.4.1
- has valid liability insurance.

It can also be a very good idea to clarify other divisions of responsibility between the promoter and the business owner. Who is responsible, for example, for guarding, or damages to, the business owner’s equipment?
9.2 **Staff for peripheral activities**

The peripheral activity is often run by the business owner's own staff. The promoter should, through agreement or other method, make sure that the staff of the peripheral activity:

- is informed of which policies and rules apply at the event
- know the location of the nearest fire extinguisher and emergency exit
- know who their contact person at the event is
- know their role, if any, in the event’s emergency plan and knows what they are expected to do in an emergency situation.

The event should require that a responsible person from the business owner should always be on site while the activity is open. How the business owner can be contacted during times the activity is not open should also be agreed upon. This facilitates communication and the opportunity to fix any problems.

9.3 **Siting of peripheral activities**

The following factors come into play in the siting of a peripheral activity:

- the space required for the activity itself
- the space for queue formations
- infrastructure requirements – for example water, parking or access routes
- the impact of the activity on crowd flow.

Health and safety risks associated with the peripheral activity should also be observed when locating it. *Read more about general siting tips in Section 4.4.1.*

9.4 **Specific rules for peripheral activities**

Different peripheral activities are governed by different rules and sections of the law. Below, the rules and advice for some of the most common are discussed.

9.4.1 **Handling of Liquefied Petroleum Gas (LPG)**

LPG (Liquefied Petroleum Gas) is often used in catering and outdoor food sales. It is also common in heating systems for tents and trailers. Special care is required in handling LPG because of the risk of fire and explosion. The handling of LPG is regulated in the Inflammable and Explosive Goods Act (SFS 2010:1011) and the additional regulations issued in connection with the law.

Handling LPG and other flammable goods over a certain amount requires a permit from the municipality. If the amount of LPG is more than 60 litres outdoors, or more than 0 (zero) litres indoors, a handling permit is required.

There are exceptions to the permit requirement; for example, public functions such as exhibitions, festivals, markets and the like that last for less than two months. Since most events last for less than two months, an LPG handling permit most often does not need to be applied for. On the other hand, the user is required to submit a report to the municipal fire & rescue service in advance.

Moreover, the user must designate and report a person as a supervisor for the LPG at each consumption site. This person, along with the business owner, is responsible for handling LPG according to the prescribed rules. It could also be a very good idea to designate, in advance, a person responsible for getting LPG bottles to safety when there is a risk of fire.
The municipal fire & rescue service need to know the location of LPG bottles so that they can be carried to safety in the event of a fire. Each LPG consumption and storage site should therefore be clearly marked with signs. The tent or building should be marked with prohibition and warning notices in a clearly visible location. The warning signs can best be supplemented with a sign that states: LIQUEFIED PETROLEUM GAS.

For amounts of LPG greater than 30 litres indoors, or 250 litres outdoors, prohibition and warning signs for LPG are required.

LPG bottles bigger than 5 litres connected via a hose without a relief valve must be protected from gas leaks through hose rupture using a hose rupture valve or steel hose.

Fire extinguishers (carbon dioxide or ‘dry’) are required wherever LPG is used. An extinguisher must be easily accessible and marked with a highly visible sign according to Swedish standards: a white symbol on a red base.

The fire & rescue service normally tests gas installations before the event is opened to the public.

LPG users must be able to show the following, during emergency services inspection:

- Verification that a report has been submitted to the fire & rescue service
- Proper knowledge of the gas, the risks use may involve, and how these are to be avoided. For LPG handling inspection, a check-list based on Appendix D to the Swedish Inspectorate of Explosives and Flammables’ regulations and general guidelines (SÄIFS 1995:3) on handling permits for inflammbable gases and liquids may be used. See Appendix B.

9.4.1.1 Siting of a peripheral activity using Liquefied Petroleum Gas (LPG)

A peripheral activity that uses LPG (Liquefied Petroleum Gas) in its operations must be positioned so that the risk of flames spreading in the event of a fire is minimal. This implies the following:

- The operation should not be positioned directly in front of a facade. Contact the municipal fire & rescue service for information suitable sites.
- A gas bottle should not be positioned so that the risk of fire and explosion, or injuries resulting from them significantly increase through its proximity to other gas bottles or to other flammable goods.

9.4.1.2 Liquefied Petroleum Gas (LPG) storage

Only the day’s need for LPG (Liquefied Petroleum Gas) should be present at the consumption site. If more LPG is needed at the consumption site, the fire & rescue service should be contacted.

Devices for LPG holders should be positioned so that unauthorised people do not have access to them. LPG bottles should be stored where they are protected against fire and damage, but are easily accessible so that they can be quickly carried to a safe place if a fire should break out. They should always be stored upright and level against the surface, and be protected against collision.

9.4.2 Vendors

All activities that have applied to the promoter for permits to conduct some form of sales belong to the vendor group. Sales in an event area come under the Swedish Temporary Sales Act (SFS 1990:1183). Make sure that:
• there are opportunities for the vendor to dispose of waste
• the vendor has a valid permit, certificate, and insurance
• the vendor has reported possession of LPG (Liquefied Petroleum Gas), that the equipment is labelled and stored correctly, and that the staff has the correct training in handling it.
• the vendor’s communication equipment does not disrupt the event’s internal communications
• handling and transport of goods to and from the vendor’s storeroom takes place in accordance with the event’s safety regulations and transport management plan
• the goods sold are not dangerous, illegal, or unsuitable (e.g. weapons, fireworks, or air horns)
• the goods sold do not violate applicable licensing, copyrights, marketing laws or trademark laws.

9.4.3 Food sales
Food sales require special treatment both as regards hygiene and safety. Each food vendor is responsible for the food they sell being safe – that is, that it isn’t hazardous to people’s health or unfit for consumption. Food vendors should, before sales begin, contact the municipality to find out what requirements there are for registration or approval of food handling.

Make sure that:
• the food vendor has access to a toilet with hand washing facilities and running water. There should be at least one water toilet for every ten food vendors and, if possible, the food vendors should have also have access to showersthe water for food operations remains drinkable
• the food sellers have access to waste management
• the food sellers have a valid approval, a written certificate that they are registered, or a formal verdict from the relevant environmental agency or local environmental office that none of these are required
• LPG (Liquefied Petroleum Gas) handling takes place in accordance with the applicable laws and ordinances.

9.4.4 Alcohol sales
A permit to serve alcohol or a alcohol licence is required to sell alcohol at an event. The business owner who is to sell the alcohol should apply for the permit. This means that the event does not need to apply for a alcohol licence if an external business owner is in charge of the alcohol sales. Alcohol sales are, however, taken into account in the police’s evaluation of the event’s permit review.

The permit is issued by the permit authority in the relevant municipality. The permit application is then normally referred to various authorities. The serving and consumption of alcohol may only occur in the area regulated by the permit. If consumption takes place in a limited area within the event, orderliness, sobriety, and age checks are required at the entrance to the area, and possible guarding to prevent alcoholic beverages from being taken out of the serving area or brought in illegally.

The person holding the alcohol licence is responsible for public order at the sales location – in accordance with the Swedish Public Order Act, the Swedish Alcohol Act, and the municipality’s own ordinances. The permit holder must mark off the serving area in an appropriate manner. The type of boundary required varies, depending on the crowd profile at the event and the hours of
operation. Simpler markings might be enough at a family event, while a youth event might require clearer boundaries - construction fencing, for example.

The following are some basic Swedish regulations:
- Alcohol may not be served before 11:00 AM.
- The serving area must serve food in order to be able to serve alcohol.
- Alcohol may not be served to people under the age of 18.

The application of rules in the permit process varies from municipality to municipality. Contact the local government office well before the event.

Make sure that:
- all alcohol serving areas have valid permits
- the sales area has the number of licenced security guards indicated on their alcohol licence
- the stores of alcohol stand on stable, flat ground out of the reach of unauthorised people
- bottles and glasses used in serving alcohol are covered up (plastic and paper containers are safer than glass bottles)
- alcoholic drinks are not taken out of the serving area.

9.4.5. Amusements
Amusements and similar activities are often hired out by a provider who also manages the operation. Look for a well-known and competent provider when choosing. It is also a very good idea to require and verify references from other events where the provider had a contract.

Providers of amusements should be able to show:
- documentation - for example certification, inspection certificates, and risk analyses
- a logbook for each amusement, which functions as a journal for information on set-up inspection and ongoing supervision
- that the provider has knowledge of the operations and work with the operations
- that the provider has trained staff for management, set-up, and winding up of the operations
- that the provider can manage and eliminate risks around management, set-up, and winding up of operations.

Make sure that:
- time for set-up, winding up, and management of the amusement or activity is estimated and settled; setup/winding up and test runs should be done before there are visitors in the event area
- suitable space has been allocated to the amusement or activity; make sure that there is also sufficient vertical space and that there are no obstacles in the air – for example electrical wires or tree branches
- no one can get in the back or into the area where they can be injured or impact operation of the amusement – fence it off if needed
- the event’s risk management is supplemented with risk management from the provider of the amusement or activity.
CHAPTER 10
SANITATION, HYGIENE, AND WASTE MANAGEMENT
Most visitors expect a clean and tidy event with enough toilets and good washing facilities. From a safety viewpoint, hygiene and waste management are important because:

- rubbish and disorder invite further littering and damage.
- a dissatisfied crowd is harder to manage than a satisfied one.
- rubbish and dirt increase the risk of disease, cuts and infections.
- piles of rubbish at campsites can easily be turned into fires.

This chapter describes how to achieve a clean and comfortable event with good service and safety for the visitors.

10.1 Sanitation or toilet area
A sanitation area is an area containing toilets and washing facilities for the event visitors. Dimension the sanitation area according to the conditions of the event. Find out approximately how many visitors are expected and based on that, create a sanitation area with the correct number and type of toilets.

Contact an established supplier of temporary sanitation areas and discuss the siting of the sanitation area, and type and number of toilets.

Keep the following in mind when dimensioning the sanitation area:
- Expected liquid consumption.
- Capacity to handle “peaks”, e.g. morning and evening at campsites and between gigs.
- Need for any temporary campsites. Toilets accessible to people with disabilities.

This table suggests an approximate number of toilets per visitor.

<table>
<thead>
<tr>
<th>FOR EVENTS THAT ARE OPEN FOR MORE THAN 6 HOURS</th>
<th>FOR EVENTS THAT ARE OPEN FOR LESS THAN 6 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>1 toilet per 100 women</td>
<td>1 toilet per 500 men, as well as 1 urinal per 150 men</td>
</tr>
</tbody>
</table>


Count on fifty percent men and fifty percent women for most events and make sure you have good margins.

Design the sanitation area so that the visitors are protected from bad weather and accidents involving tripping or slipping. Floors, ramps and stairs should be covered with anti-slip materials.

10.1.1 Location of the sanitation area
At large events it can be a good idea to have several sanitation areas. This increases accessibility and service for the visitors. It also reduces the risk of long queues forming. At events with large areas and long distances (e.g. city festivals) it is extra important to bear in mind that the toilets should be spread out. Place them by roads and in parks.
However, also keep in mind that locating the sanitation areas too far from each other will render maintenance more difficult, as certain toilets need to be emptied regularly. Sanitation areas with “Portaloos” should be located so that a sewage lorry can easily access them. There should never be more than 20 metres between a sanitation area and an accessible road.

Sanitation areas result in odours. Avoid locating a sanitation area near food vendors and areas with high crowd density. The distance between sanitation area and food vendors should be at least 50 metres, if possible. Proper signage helps visitors find the sanitation areas. Read more about signage in Section 5.2.

10.1.2 Maintenance of sanitary areas
Emptying is usually not necessary at one-day events. At multi-day events it is a good idea to empty the toilets in the morning and make sure there is a sewage lorry on standby. Try to calculate toilet use and schedule toilet emptying when the area is closed to visitors or when there is the lowest number of visitors.

Make sure that there is staff available that can service the toilets. The toilets should be kept clean and paper and soap should be refilled at regular intervals.

10.2 Different types of sanitation facilities
Choose sanitation facilities that are suitable for the event. Suitability is determined by the location, access to water, roads and budget. Discuss this with the municipality, with other promoters who have organised similar events, and with suppliers of sanitation facilities.

10.2.1 Existing toilets
Some events only need existing toilets, i.e. public toilets nearby or already on the event premises. However, at larger events where there are existing toilets (e.g. arena events and city festivals), need may exceed capacity. The resources should then be increased with temporary toilets.

At many events only temporary toilets are chosen. This avoids the risk of criminal damage and considerable expenses for maintenance of existing toilets.

10.2.2 Temporary toilets
Temporary water toilets, aka toilet booths, can be used if there is access to drainage, a septic tank or equivalent and access to water with the correct pressure. Contact the municipality staff in charge of water and drainage, and check whether you can use previously installed drainage if you are going to use temporary water toilets that need drainage. Drainage should always be installed by a qualified HVAC fitter.

The most common temporary toilets are chemical toilets, aka Portaloos. They have separate tanks and need to be emptied by a sewage lorry. Sewage lorries must be able to empty their load at a sewage disposal plant. Make sure to put the toilet units on a flat surface and attach them so they cannot tip over.

Gutter urinals are another type of temporary toilet. They can be used to lessen the burden on temporary toilets. However, bear in mind that urinals are only used by men.

10.2.3 Sinks
Sinks should be available adjacent to sanitation areas. If it is not possible to erect sinks the promoter can supply antiseptic creams. If sinks are used there should be drainage or other means to dispose of the waste water. Otherwise the
area around the sinks will become marshy and muddy. Plan for one sink per ten visitor toilets and make sure that there are sinks by the toilets that are used by food vendors.

10.2.4 Showers
Shower facilities may be needed at multi-day events with campsites. Beaches or swimming baths near the event can also be an alternative.

Keep the following in mind if showers are installed:
• Showers use a lot of water. Make sure that there is enough water and the possibility of treating used water.
• There should also be shower facilities for food vendors.
• Think about what level of service the event wants to offer its visitors and dimension the number of showers accordingly. At a campsite it is suitable to have at least 1 shower per 500 visitors.
• Make sure that there are showers available for the disabled. Read more about how to make the event accessible in chapter 13.

It can be advantageous for the event to charge the visitors a fee to use the showers. This will enable the event to offer a greater number of showers, making it easier to service and check the showers.
10.3 Waste management

All events, regardless of their size, generate a large amount of waste. It is the promoter’s responsibility to take care of the waste in a correct manner. If waste management functions well then no one will notice it. However, if it does not work then everyone will complain about it – visitors, the municipality, the authorities, and local residents.

Good sanitation in the event area increases the well-being of the crowd and thus also their safety. However, a messy and dirty area risks lowering the crowd’s well-being and causes more mess and dirt. Lacking maintenance increases the risk of the crowd perceiving the event as unstructured and in the worst case as “lawless”. This could in turn lead to criminal damage or other undesirable incidents.

Clean-up and waste management fulfil three important functions:

- **Well-being and safety.** A clean and tidy event can have a positive effect on the atmosphere and the attitude of the event visitors. This makes it easier to maintain order and rules of conduct.

- **Reduced risk of fire.** The assessments of the fire & rescue service show that fire in rubbish is the most common cause for emergency responses at events, primarily at campsites connected to events. Make sure that there are never any piles of rubbish in the area.

- **Reduced risk of injury.** Objects left lying around can be used as weapons and constitute an injury risk. Increased cleaning reduces this risk.

The promoter should contact the municipality staff in charge of sanitation for help and advice on how to manage the waste from the event. The municipality is usually responsible for managing all household waste, i.e. normal rubbish. However, the event will need to hire a contractor to take care of all the producer waste, i.e. glass, paper and metal. Consult the municipality staff responsible for sanitation in order to find a suitable waste management contractor.

10.4 Waste management staff

Many events hire local organisations to clean up the event venue. Hygiene is extra important for waste management staff. Make sure that there are washing and shower facilities and access to warm water and antiseptic creams. Waste management staff must be equipped with work gloves and other suitable equipment, e.g. safety shoes, safety glasses, litter pickers and the like. Work gloves should be durable and changed often. **Read more about responsibility for work environment in Section 2.1.3.**

10.5 Waste collection

Waste collection often involves heavy vehicles. Make sure that they are guided or watched so as to minimise the risk of injury. Find out whether it is possible to establish transport routes in the event area. **Read more about transport and access routes in Section 5.3.5.**

10.6 Waste recycling

The event should try to recycle all waste. This can be done in two ways: The event staff, or a committed organisation, can sort collected waste and take it to
the appropriate recycling site. Alternatively the visitors can be encouraged to sort their waste themselves in recycling bins which are then transported to a recycling site. Often a combination of the above alternatives is recommended.

Examples of waste that event visitors can be encouraged to sort for recycling in separate bins are:

- glass
- paper
- batteries
- plastic
- metal.

Contact a local environmental and recycling company or the municipal sanitation staff for advice.

10.6.1 Bins for waste management

Consult the municipality staff responsible for sanitation and the contractor hired for waste management about what kind of bins should be used for waste management.

Bins for waste collection can be placed in the event and campsite areas. These bins should be emptied regularly in order to prevent them from overflowing and to reduce the risk of deliberately set fires. There are bins for storing waste until it can be transported to a recycling site. These bins should be kept out of the reach of unauthorized people. It can be a good idea to lock them, in order to prevent deliberately set fires.

It can also be a good idea to establish a sorting centre where waste can be sorted before being transported to a recycling plant.

10.7 Sustainability

There are different kinds of environmental management standards, primarily ISO 14000, which you could consider using in order to quality assure the event’s waste and environmental work. This can often be a powerful tool to increase the quality of the event.

Work on an international standard for sustainable events, ISO 20121, is under way and introduction is planned for 2012. This standard will relate to, among other things, employer responsibility, waste management and accessibility.
CHAPTER 11
TEMPORARY STRUCTURES

Photo: Magnus Nylen
Temporary structures can be found at most events, and are often used to establish the event venue based on the event’s needs – for example stages, crowd barriers, scaffolding, tents or stands.

This chapter provides guidance on what a promoter should keep in mind regarding temporary structures.

11.1 Contracts with suppliers
To avoid problems regarding the allocation of responsibility for the structure’s safety, the promoter, supplier and the party that erects the structure must enter into an agreement that regulates the allocation of responsibilities. For example, the agreement could regulate responsibility as follows:

The supplier is responsible for:
- maintain safety around the structure until it has been delivered to the event
- the structure being flawless on delivery
- assembly instructions being supplied to those responsible for assembly
- safety regulations being supplied to the promoter.

The fitter is responsible for:
- ensuring the safety of the fitting
- staff the structure being assembled and disassembled correctly, according to assembly instructions and applicable work environment legislation.

The promoter is responsible for:
- crowd and staff safety regarding the structure as long as it is at the event
- obtaining necessary information and skills to handle the structure correctly and safely.

11.2 Siting of temporary structures
The siting of temporary structures depends to a large extent on what kind of structure it is and what it is going to be used for. General advice on the siting of temporary structures can be found in Section 4.4.1. For more activity-specific advice in locating an entrance or a stage, for example, please refer to their respective chapters.

11.3 Selection of suppliers
Temporary structures are usually hired from a supplier. The event must be able to trust that the products rented are flawless, tested and suitable for the activity. That is why it is important to look for a well-known and competent supplier. Ask for references from previous assignments from the suppliers in question.

According to the Swedish Product Safety Law, or PSL (SFS 2004:451), business owners must supply services and products that are safe. However, PSL does not describe in detail how the business owner should ensure that the services are safe and this is assessed on a case by case basis.

When assessing whether a service is safe or not, “good practice for product safety” in the relevant sector must be observed in accordance with PSL. This
means that the supplier must follow the general guidelines, etc. published by the relevant authorities or trade organisations. This is voluntary, but as a promoter you must include "good practice for product safety" in your supplier assessment.

If you are unsure, contact the Swedish Consumer Agency for advice. Read more at www.konsumentverket.se.

A supplier should:

• have knowledge of the product and the work on the structure
• be able to handle and eliminate risks during assembly and disassembly of the structure
• have trained its staff in assembly and disassembly
• be able to supply the necessary documentation – for example assembly plans, certificates and standards
• display a schedule for the delivery
• have liability insurance
• be able to show that the structure is approved or inspected during manufacture
• be able to show a log book or other documentation that shows that the structure is checked regularly.

Companies or contractors that assemble and disassemble temporary structures should have a risk analysis for assembly and disassembly of the structure. The risk analysis should include the safety of people moving about near partially assembled and partially disassembled structures.

If there is the slightest doubt regarding the siting, assembly, use or handling of a temporary structure, or regarding whether it meets all the requirements and certifications you should, as the promoter, ask the supplier for a safety review. This review should be attended by the person who is to be responsible for the assembly of the structure. If the user of the structure is not the promoter, then the user should also be present. It can also be a good idea to invite the authorities concerned to the safety review.

11.4 Documentation of temporary structures

Demand the necessary documentation from the supplier before you choose temporary structures. This documentation will facilitate the safety reviews that events and authorities must conduct. A supplier being able to provide the event with documentation for the structure can also be seen as a guarantee for the quality of the supplier.

11.4.1 Design drawings of the structure

Design drawings contain calculations and information about how the structure is constructed. There are no requirements that design drawings must be provided, but they should be available if an independent control body is hired to ensure that the structure is correctly assembled and safe.

11.4.2 Installation instructions for the structure

A temporary structure is often constructed to have certain properties. For example, how stable the structure is when subjected to side winds, or its ability to withstand a certain load. There is a risk that these properties are compromised if the structure is assembled incorrectly. This is why assembly and disassembly must always take place in accordance with the assembly instructions.
The supplier must always be able to show assembly instructions. The supplier is legally obligated to supply assembly instructions if the structure is handed over unassembled.

**11.4.3 Standards and test results for the structure**

Many temporary structures have been put through various tests. For some structures there are various kinds of standards that they can be tested against. A standard or a test in itself is not necessarily a sign of quality – the tests performed and standards issued must also be relevant in the context. Finally, it is important that there is documentation of tests performed or standards.

Find out what the standard entails. Is it relevant to the safety of the structure?

**11.4.4 Inspection certificate for the structure**

By law, large temporary structures, primarily structures designed to house or bear people, must be inspected. The supplier must be able to show documentation to the effect that the structure is inspected and free from serious complaints.

**11.5 Assembly and dismantling of temporary structures**

The following details should be assured to prevent incorrect assembly and incorrect use of a temporary structure:

Assembly must take place according to the available assembly instructions. Use of spare parts or supplementary parts that are not originally designed for the structure must be avoided, unless they are tested and approved for the purpose.

For many temporary structures, staff must climb scaffolding and structural elements during assembly. Caution must be observed while doing so, and there must be safety structures in place that adhere to current work environment legislation.

All components must be checked before assembly and disassembly for signs of deformation or other visible damage. Damaged components must be replaced.

If parts of the structure reach into the crowd areas – e.g. tent pegs, ropes or other objects – this should be indicated or remedied with information signs or by covering them so that they do not pose a risk of tripping or other injury for people.

Staff involved in assembling the structure must be certified in some cases. Some structures or work tasks require certified fitters, for example high altitude work and erecting scaffolding.

An assembled structure must be checked by a person with the required competence.

Make sure that a fully assembled structure is safety checked so it is in accordance with the applicable plans and calculations. This safety check must be documented.

A temporary structure is vulnerable to strain such as weather, wind, incorrect use or crowd pressure. If you suspect that the structure has been subjected to strain it should be safety checked so it is free from flaws before the audience is allowed near it.
11.5.1 Rigging
Installing equipment for sound, lighting and special effects is called rigging. Rigging among several tons of equipment in scaffolding, ceiling beams and floor surfaces is not risk-free. Rigging requires both knowledge and experience. Improper rigging and inadequate safety procedures for rigging work can pose a risk to the audience, staff and artists. It is important that the people who perform the rigging have the necessary competence for the task.

If you as a promoter hire rigging staff, make sure that the supplier designates some of them as ultimately responsible for the rigging process and for the people who work on it.

The person responsible for rigging can then sign a guarantee that the rigging was performed correctly and inspected. If there is any uncertainty regarding rigging, the promoter should contact an external inspection body for inspection.

It is important that the floor or attachment points do not give way under the weight of the equipment being rigged. The supplier of the equipment and the property owner are required to provide information about durability and maximum loads. Contact the stage supplier, for example, for information about the stage’s durability. Read more about event venue durability in Sections 4.1.2 and 4.1.3.

11.5.2 Working at heights
Assembly, disassembly and rigging of temporary structures often means that assembly staff work at great heights; concert tents, stages, sound and lighting installations are often impossible to assemble without staff who work at heights. It is important that work at heights is carried out according to all the existing safety precautions and that there are routines for rescuing staff working at heights in an emergency. Read more about rules for working at heights in the collection of Work Environment Provisions (AFS) from the Swedish Work Environment Authority.

11.6 Special rules
The term temporary structure is very general because it covers everything from circus tents that can house thousands of visitors to a radio mast situated well away from the audience area. Different temporary structures require different safety precautions. This section deals with specific rules and things that are good to keep in mind regarding the use of the most common temporary structures at an event.

Also read the general advice and guidelines provided earlier in the chapter about legal liability, selection of suppliers, and assembly of temporary structures.

11.6.1 Scaffolding
Scaffolding is part of most temporary structures, including everything from large, complex structures like stages to simpler structures like entrances, FOH, and observation towers.

Scaffolding work is regulated by the Swedish Work Environment Act. In AFS 1990:12 there are regulations that cover type inspection, marking, and safety precautions for scaffolding used for work. According to the regulations, some scaffolding with a work area that is over 1.25 metres high must be type inspected by an accredited body. In Sweden, only SP marking is currently valid.
11.6.2 Stages

Stages are one of the most complicated temporary structures at an event. There are many different kinds of stage, and depending on their construction the regulations applying to them vary. For example, a ground support stage is not subject to the same rules as a stage made from scaffolding.

The following is important to keep in mind:

• The stage must be tested for durability and quality assured.
• All tarps and fabrics used on and around the stage must be fireproof.
• It is common practice that stages used for large gigs are around 2.5 metres high. A low stage could mean that part of the audience cannot see the performance and this could generate more crowd pressure. Consult the stage supplier with questions in this regard.
• Stages should be lightning proof to reduce the risk of lightning strikes. Contact a supplier of electric installations for help.
• Some stages are not constructed to handle lateral strain. Therefore you should never lean the crowd barrier against the stage, for example using pallets, without first having checked that the stage can withstand the strain.
• If the promoter hires things that are to be placed on stage, suspended from the stage roof, and so on, then weights, loads, attachment points and the like must be approved by the stage supplier and documented.

11.6.3 Tents

What separates tents from other temporary structures is that they house people. This means that more stringent requirements for fire safety and dimensioning than for other kinds of structures.

Tents designed to house more than 150 people are classed as event tents and must be inspected and approved, according to Chapter 2, § 12 of the Swedish Public Order Act (SFS 1193:1617). According to the European standard, there must be a “tent book” for each such tent at the tent – that is, a log book that contains construction documents and assembly instructions as well as information about approved inspections, reparations and modifications. The tent book must accompany the tent and be on site at the event venue.

The following is important to keep in mind:

• The tent must be dimensioned for the intended crowd size.
• The tent must meet fire & rescue service requirements regarding evacuation routes and evacuation alternatives. The same rules apply to event tents as to assembly venues.
• The tent must be approved according to Swedish standards.
• The tent must be constructed from fireproof, approved tarps and fabrics.
• Tents must be lightning-proof to reduce the risks should a lightning strike occur. Contact a supplier of electric installations for help.
CHAPTER 12
SOUND AND SPECIAL EFFECTS
Sound and special effects are part of the experience during an event. The sound, and in many cases the special effects as well, are natural and expected elements at concerts and other activities, so it is not possible to eliminate the associated risks by removing the source.

Safety measures regarding sound and special effects are largely focused on preventing risks through knowledge, correct use and implementation. For safety measures at an event, sound is also an important tool for spreading information and handling crisis situations.

### 12.1 Sound

Loudness and pressure level are measured in decibels (dB). 0 decibels is the quietest sound that a healthy ear can hear. The decibel scale is logarithmic, which means that the sound pressure doubles for every three decibels. So an increase from 80 dB to 83 dB means that the sound pressure is doubled. An increase of 30 dB means that the sound pressure has increased nearly 1000 times.

Loud noises can be harmful for the human ear and cause hearing damage – tinnitus or permanent hearing loss, for example. As well as the level of the sound, the time during which you are exposed to it also has an affect on how harmful it is. A person’s physical condition also affects their sensitivity to noise; physically demanding work, smoking, high blood pressure and infections reduce resistance to noise.

The sounds that are most harmful to human hearing are high-frequency, i.e. explosions, bangs or impact noises. Low frequency sounds, i.e. bass notes, are tolerated better.

<table>
<thead>
<tr>
<th>dB(A)</th>
<th>EQUIVALENT</th>
<th>UNPROTECTED EXPOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Whisper/rustling leaves</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Footsteps on gravel</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Normal conversation</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Loud voice</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Work Environment Protection limit. When working at levels over 85 dB Leq, hearing protection must be used.</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>Heavy traffic</td>
<td>should be less than 45 minutes</td>
</tr>
<tr>
<td>97</td>
<td>Maximum level for places where people under 13 are allowed</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Maximum level for places where only people aged 13 and up are allowed</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>Loud level at discos</td>
<td>should be less than 1 min. 30 sec</td>
</tr>
<tr>
<td>115</td>
<td>Loud level at concerts</td>
<td>should be less than 10 sec</td>
</tr>
<tr>
<td>125</td>
<td>Pain threshold. The human ear instantly registers discomfort. NB! Lower sound pressure levels can also be harmful.</td>
<td></td>
</tr>
<tr>
<td>140</td>
<td>Jet plane</td>
<td>should be avoided</td>
</tr>
<tr>
<td>190</td>
<td>Highest possible sound level in air</td>
<td>should be avoided</td>
</tr>
</tbody>
</table>

#### 12.1.1 Permissible noise level

The Swedish Board of Health and Welfare has set down some general guidelines for the highest permissible sound level at public events. The environmental department in each municipality decides which sound levels are allowed for a certain event, based on the general guidelines from the Board of Health and Welfare.
The promoter is ultimately responsible for the stated sound levels not being exceeded, regardless of what causes the increased sound level – the artist’s own staff, for example. The municipality may issue a fine if the stated sound level is exceeded.

Contact the municipal environmental department to find out which sound levels apply in your municipality.

The following should be done to ensure that the permissible sound level is not exceeded:

- Inform the event production staff of the permissible sound levels.
- Inform the artist and the artist’s own staff about the permissible sound levels.
- Add a paragraph to the artist contract in which the artist (and staff) pledges to follow the stated maximum levels.
- Establish your own measuring routines to check that the maximum levels are observed.

### 12.1.2 Hearing protection

The pain threshold is at 125 dB, but sound levels far below 125 dB can be harmful. Hearing protection, when used correctly, prevents its wearer from exposure to louder sound levels than the recommended lower limit, i.e. 85 dB(A).

The promoter must make sure that there is hearing protection available for everyone in the event area – staff, artists, visitors, companies on site, other staff etc. Everyone in the event area should receive, or have the opportunity to buy, hearing protection.

There are two kinds of hearing protection:

- hearing protection that lowers the harmful frequencies
- hearing protection that lowers the sound level of the entire frequency spectrum.

There are many products on the market that cover the span between these two categories. The hearing protection that lowers the harmful treble frequencies changes the sound image, creating a "noisy" impression. This kind is most common and cheapest.

The hearing protection that lowers the sound level across the entire frequency range does not affect the sound image in the same way as the cheaper kinds. The sound experience is not lost in the same way. This kind of hearing protection is usually more expensive, but is available in various qualities and several price ranges.

It can be a good idea to hand out cheap but good ear plugs to visitors, and to supplement this by selling higher quality hearing protection.

### 12.1.3 Sound and workers

The staff at an event must receive adequate information about sound levels, limits, risks of hearing damage and other possible measures to reduce exposure.
The Swedish Work Environment Authority has set limits for sound levels during work as follows:

- highest equivalent sound level during an eight hour work day: 85 dB(A)
- highest sound level (not including impulse noises) 115 dB(A).

Everyone working in environments where the sound levels exceed the limits mentioned above must be offered hearing protection.

Often the staff who work on the sound want to be able to hear the same sound level as the audience in order to be able to adjust the sound correctly. This often results in overexposure to loud sounds. However, if possible the event should try to reduce staff exposure to noise. Use the following points as a guide:

- Inform people about the sound levels and their effect on hearing.
- Offer all event workers free hearing protection.
- Limit the time that the staff spends in environments with high sound levels.
- Close off the areas where you do not have to hear everything to be able to perform your work duties, e.g. behind, under and next to the edge of the stage, in the first aid area, and the area behind the stage (backstage).
- Use hearing protection in the areas where you can not reduce sound levels to under 85dB(A) in any other way. Read more about responsibility for work environment in Section 2.1.3.

12.1.4 Sound and visitors
The sound level varies between different areas around the stage. If older speaker systems are used the level difference is more noticeable, while newer speaker systems are designed to emit an even sound level to the audience area.

If possible, prevent the crowd from getting closer than 3 metres away from the speakers. The crowd should not be allowed closer than 1 metre away from a speaker under any circumstances. At some events without wheelchair stands, wheelchairs are sometimes put in the pit, directly in front of speakers. This is definitely not recommended. Read more about accessibility in chapter 13.

It is easiest to ensure a “clean” area around the speakers with a fence or barriers, but the very best option is to suspend the speakers. This achieves better sound dispersion, and also avoids subjecting visitors to close exposure.

Also consider other sound sources than speakers, e.g. pyrotechnical explosions, machines and sound systems that are part of vendor areas, fairgrounds or the like.

Air horns and the like can generate sounds as loud as 120 dB(A). Today there are no bans on these but it is at the promoter’s discretion to forbid the audience from bringing them into the area. Read more about what the promoter can choose to ban in section 17.2.2.2

12.2 Special effects
12.2.1 Pyrotechnics
Pyrotechnics is an umbrella term for various special effects that contain a pyrotechnic charge. There are a number of different pyrotechnical effects that are used at events – everything from outdoor fireworks that require a greater safety distance and free height, to stage fireworks and arena effects designed to go off safely near the artist and audience.
12.2.1.1 Permits
According to chapter 2 § 20 of the Public Order Act (SFS 1993:1617) it is forbidden to use pyrotechnics at a public gathering or public event held indoors without a permit from the police. Also, according to chapter 3 § 7 of the same law, it is forbidden to use pyrotechnics without a permit from the police, if the use as regards time, location and other circumstances entails a risk for injury to, or notable inconvenience for, a person or property. Regarding the use of pyrotechnics at events, a permit is virtually always required. You must always check what applies in each case with the police.

The handling of pyrotechnics is regulated in § 16 of the Inflammables and Explosives Act (SFS 2010:1011) and the additional regulations issued in connection with the law. According to this regulatory framework, a police permit is required for the use of what is known as professional pyrotechnics. A permit is generally also required for the storage of all types of pyrotechnics. This permit is applied for in the municipality involved. More information about the regulations for pyrotechnics storage can be found in the Swedish Civil Contingencies Agency’s regulations and general guidelines (MSBFS 2010:5) on the storage of explosives.

It is primarily the promoter who is responsible for all the event activities that require a permit. If pyrotechnics are part of the event then this must be made clear in the promoter’s application and the event permit certificate. The promoter is then responsible for hiring staff with the necessary competence for the task.

12.2.1.2 Suppliers of pyrotechnics
Pyrotechnics must always be handled by a person with the required competence. Sweden does not have a certification for pyrotechnics staff, so the promoter must gain an understanding of the suitability of the pyrotechnics staff. To be on the safe side, you should always choose a well-known and competent pyrotechnics company.

Choose a pyrotechnics company that uses approved devices. All pyrotechnics used in Sweden must be approved by the Swedish Civil Contingencies Agency or CE-approved. If foreign companies are hired (e.g. when the event is visited by foreign artists) you should check that the pyrotechnical devices are approved for use in Sweden.

12.2.1.4 Review and test firing
The promoter and pyrotechnics staff must review the chain of events and safety precautions regarding the firing of pyrotechnic devices with the municipal fire & rescue service and the police. It can also be a good idea to ask the pyrotechnics staff to perform a test firing, so that both the promoter and authorities can gain an understanding of the size of the pyrotechnics show.

12.2.1.5 Safety distance
All pyrotechnic devices approved by the Swedish Civil Contingencies Agency have a safety distance that must be observed. Note that the safety distance applies to people and inflammable materials.

The pyrotechnics technician is responsible for supplying the police with correct information about the pyrotechnical devices and their safety distance. The promoter is responsible for ensuring that the safety distance is observed using guards and temporary fencing.

12.2.2 Stroboscopic effects
A stroboscope is a device that emits strong, rapid pulses of light. There are no regulations regarding the use of stroboscopic effects in Sweden, but research...
shows that long stroboscopic sequences can trigger epileptic seizures in epileptics. It is hard to establish which levels of stroboscopic effects trigger epileptic seizures because it varies from one person to the next. However, it is clear that the contrast, frequency and exposure time are all factors.

If stroboscopic effects are used then information signs can be posted so that people with epilepsy can avoid these events.

12.2.3 Smoke effects
Various smoke effects are common at events and are used both indoors and outdoors to create everything from a smoky atmosphere indoors to fog at outdoor concerts.

Make sure that the smoke does not risk triggering fire prevention or sprinkler systems. Promoters of indoor events should contact the fire & rescue service and discuss whether the fire alarm can should be turned off in some or all of the venue, if there is a risk that the smoke effects will trigger the fire alarm.

Smoke machines must be operated by competent staff and the operator must always be able to see the entire flow of the smoke, from the place where it is activated. Extended use of smoke and smoke machines may also result in a thin layer of slippery by-products forming on the ground of the floor, which is worth noting.

12.2.3.1 Heated smoke (light smoke)
Heated smoke (also called light smoke) rises upwards. This smoke is often used in clubs and dance venues but is also often used as a special effect at outdoor concerts.
Always make sure that the manufacturer’s instructions are followed to the letter when using smoke machines with heated smoke. Incorrect use can result in toxic by-products or fire. Never manipulate the smoke machine’s built-in thermostat, and always try to maintain the temperature stated in the instruction manual.

Use coloured filters on light that illuminates the smoke if you want to change the colour of the smoke. Never add any paint to the smoke machine fluid.

12.2.3.2 Cold smoke (cryogenic smoke)
Cold smoke (also called cryogenic smoke) is used to create smoke fog on the ground level. Cold smoke is heavy and does not rise upwards in the same way as light smoke.

Always make sure that the manufacturer’s instructions are followed to the letter when using smoke machines for cold smoke, and also handle the smoke material according to the manufacturer’s instructions.

Always consult the supplier for detailed advice on how the smoke material should be handled and stored. Always use well insulated protective gloves when handling dry ice. Extra precaution must be observed when storing and handling liquid nitrogen. Anyone handling liquid nitrogen must always wear long insulated protective gloves and protective glasses or a visor. The liquid nitrogen storage container must be ventilated or it risks cracking.

Cold smoke sinks, partly because of its low temperature are partly because carbon dioxide is heavier than air. When the smoke effect has worn off the smoke and vapour becomes invisible and so it is hard to assess the gas concentration with the naked eye. The by-products of cold smoke (carbon dioxide and nitrogen gas) can cause breathing difficulties, which means that a high concentration of these gases may pose a risk to the audience and event staff. Therefore, always make sure that all parts of the venue where people will be present have sufficient ventilation.

Be extra careful with the orchestra pit, stage pit or work areas under the stage. No one should be allowed to lie down in cold smoke under any circumstances.

12.2.4 Fire effects with Liquefied Petroleum Gas (LPG)
Fire effects with LPG (Liquefied Petroleum Gas) are created by igniting LPG or, in some cases, methane. This effect is primarily used as a stage effect but also in some sports arenas.

Anyone handling and firing the fire effect must have the required competence. Use a so-called “dead man’s handle” for fire effects of this kind, where the LPG is stopped instantly when the person firing the effect lets go.

No special permit is required to use LPG effects. However, the promoter must always report the use of LPG to the fire & rescue service if the fire effect is used indoors. If the effect is used outdoors, the amount of LPG must be reported to the fire & rescue service if it exceeds 60 litres. Read more about handling LPG in section 9.4.1.
People with disabilities should naturally also be able to take part in an event. Making an event accessible means that it is accessible to everyone, with the same rights and opportunities for experiencing the event in a safe way.

13.1 Good accessibility

Making an event accessible doesn’t only mean making it wheelchair-friendly or that the event is only adapted to people with visible disabilities. It also means that you make the event accessible for people with impaired hearing, impaired vision, allergies, visitors with prams or people with intellectual disabilities.

The following parts of an event should make be accessible and usable for everyone:

- information
- evacuation procedures
- event area/venue
- parking
- entrances, exits
- emergency exits
- spectator areas, preferably in different parts of the venue
- stands for people with disabilities (“wheelchair stands”) near stages
- ramps
- toilets
- food vendors.

Good accessibility is good for the entire event, because good accessibility and usability, clear information and a high level of service benefit everyone. Therefore, you should strive as often as possible to use general solutions that work for as many people as possible. It is always better to use general rather than special solutions to make the event accessible and safe for people with disabilities.

Work on an international standard for sustainable events, ISO 20121, is under way and introduction is planned for 2012. This standard will relate to, among other things, employer responsibility, waste management and adjustments for accessibility.

In the Swedish Board of Housing, Building and Planning regulations and general guidelines (BFS 2003:19 HIN) you can read more about how to make events more accessible and usable. The regulations apply to current public venues and public places and describe simple ways to handle obstructions.

13.2 Information on accessibility

It is good to provide information on websites, tickets, and so on, about the event’s accessibility and which parts have good and bad accessibility.

At the event there should be clear signs indicating toilets, entrances, exits and focal routes that are accessible to people with disabilities. Text information should be written in larger letters and high-contrast colours, so it can be read by people with impaired vision. In order to convey information to people with impaired hearing or vision, information desks can be supplemented with audio
equipment (e.g. audio induction loops), visual information, or information in sign language. Information desks should also be low enough to enable communication with wheelchair users. Read more about audience information in section 14.4.3.

13.3. Evacuation procedures

Information about evacuating the event venue must also be made accessible to people with disabilities. Communicate the evacuation alarm in several ways – preferably with light, sound and written messages.

If certain emergency exits are specially adapted for people with disabilities, inform people of this before the performance starts – for example, via information near the entrances and via an announcer if there is one.

There should be staff to guide and help people with disabilities in the event of an evacuation. For example, it can be difficult to navigate large crowds in a wheelchair. Contact the fire & rescue service, who can suggest how safety staff can help with this.

13.4 The event venue

It is important that the venue surface is even and hard. Asphalt, concrete blocks or paving bricks are good, as is hard gravel of the kind used for football pitches and gravel roads. A gravel surface also permits the burial of cables.

Poorly drained grass areas, gravel paths with shingle, and other loose gravel, however, are not recommended as they reduce access for people with disabilities. Read more about surfaces in section 4.1.2.

Crowd flows can be affected by wheelchairs or people who walk slowly. Have margins when calculating flows that include visitors with disabilities.

It is important that there are staffers to help visitors with disabilities in strong crowd flows if necessary, e.g. during evacuations and when the event ends.

13.5 Parking

Make sure that there are parking spaces reserved near the event venue for people with disabilities, no further than 25 metres away from the entrance.

You should be able to park a minibus and there should be enough space at the sides so you can get in and out with a wheelchair. Calculate for parking spaces being at least 3.6 metres wide and preferably there should also be some extra wide spaces of around 5 metres. Read more about parking spaces in section 5.3.4.

13.6 Entrances and exits

The smallest unobstructed width of an opening that can be passed through with a wheelchair is 0.90 metres. The width must be 1.3 metres, however, in order for entrances, exits or emergency exits to be considered accessible, and the area in front of and behind the entrance or exit must be flat and free from obstructions. There should also be sufficient space to turn a wheelchair round on both sides of the entrance and exit. A suitable turning radius for an outdoor wheelchair is a circle with a diameter of 2 metres.
It is also important to mark entrances, exits, and most importantly evacuation routes with high-contrast signal colours and warning signs. This will help people with impaired vision find their way around, but these measures will also facilitate evacuation for the rest of the crowd. Read more about entrances and exits in chapter 7.

13.7 Evacuation routes and emergency exits

People who use wheelchairs should be able to use as many of the evacuation routes as possible. There should also be one of these evacuation routes adjacent to any stands for people with disabilities. Try to ensure, however, that all evacuation routes have the same high level of accessibility. You should not have to direct visitors to a special emergency exit in case of an evacuation. Read more about evacuation routes in Section 7.5.

An evacuation route should preferably be 2.0 metres wide (at least 1.8 metres) and have turning zones at regular intervals. All evacuation routes should be indicated with high-contrast colours.

Emergency exits for wheelchair users should be positioned on flat surfaces with no obstructions, so they can pass through without any problems. Evacuation routes with high level differences or stairs cannot be used by people with disabilities. Obstacles near evacuation routes should be clearly marked with
high-contrast colours and warning signs, so they can be understood by people with impaired vision.

13.8 Stands for the disabled

When there are fixed places it is preferable that people with disabilities, e.g. wheelchair users, are able to sit among others and also be able to choose between various distances from the stage. This is often the case at indoor venues.

This is also preferable at outdoor venues, but not always possible to implement. Therefore, at outdoor events a special stand near the stage can be a good way to offer the experience to people with disabilities. These stands are often called “wheelchair stands”. However, bear in mind that there are people with disabilities who do not use wheelchairs but still may have trouble experiencing the event from the audience area. These people should also be granted access to the stand.

The most common kind of wheelchair stand is a raised platform in the audience area. The stand should be sited on flat ground outside the area with the highest crowd density. It should be easy to reach and easy to exit. The height of the stand means that it obstructs the view of the audience behind it, and this must be considered when planning its positioning. Also, because of the increased sound level, avoid siting the wheelchair stand directly in front of the speakers.

If the wheelchair stand is positioned in front of the stage it can be a good idea to cordon it off, and possibly staff it so as to prevent people from injuring themselves on or misusing the stand. It should also be equipped with a wheelchair ramp.

Calculate for a wheelchair user needing 1.5 – 2 m² of space. The stand should preferably be equipped with extra space and chairs for friends and assistants. The stand needs to be at least 1 metre high to enable its users to see the performance properly.

13.9 Ramps

Ramps are used to bridge level differences in the event area/venue. These can be stairs, thresholds or cables, which without a ramp would be an obstacle for wheelchair users or people with impaired vision.

The ramp surface should be made of non-slip material. It should be at least 1.5 metres wide, and have a gradient of no more than 5 cm per metre, i.e. 1:20. It should also be equipped with handrails, roll-off prevention and signs.

13.10 Toilets and showers

For a toilet to be counted as accessible for people with limited mobility, it must have an area of 220 x 220 cm and an unobstructed door opening of 90 cm. It should also be equipped with handrails, mixer taps and a grip on the inside of the door. There should be an alarm device and a description of whom it alerts.

For a shower to be accessible for people with a disability, it should be possible for the user to sit down in the shower. There should also be handles, to make it easier to stand up and to get back to any aids.
Toilets and showers should be sited so that they are easily accessible, have a ramp and a space in front of the entrance where it is possible to turn a wheelchair around.

If there is no access to existing toilets and showers for people with disabilities, they can be rented. Read more about sanitation areas in section 10.1.

13.11 Food vendors
The promoter must require that food vendors at the event venue inform the visitors what the food contains, to make it easier for people with various food allergies to find appropriate food. Read more about food vendors in section 9.4.3.
Visitors come to an event for the experience. It could be to see their favourite artist, or to get together and party. The majority of the visitors, in any case, come to the event to experience it, express themselves, and have a good time.

Satisfied visitors whose expectations have been met make the event safer and more secure. An angry or disappointed audience, on the other hand, can create a range of different problems that can lead to risks or undesirable incidents.

It is therefore important that all event workers, not just safety staff, have an understanding of how a crowd can function and how best to work with an audience so that it experiences the event positively and safely.

14.1 The individual

Understanding an audience is a question of seeing and understanding the relation of individuals to the crowd, and the crowd’s behaviour as a group.

Human beings are complex creatures. All individuals are unique, and make their own choices. But it is also possible to discern several patterns in human behaviour. Some of these patterns are described below. These are generalisations, naturally, but no less interesting and good to know in work with crowd management.

Humans are driven by needs and goals. People, in most cases, are driven by their desires or needs. By analysing different situations and thinking about what the visitors might think of doing, assumptions about where they are headed can be made. The more a promoter understands of the needs and goals of a crowd, the better the planning for crowd management at the event.

Human beings are pack animals. Human beings are social animals with a strong need for social interaction and acceptance. This can, for example, mean that individuals gathered in groups or crowds can adapt or forgo aspects of their normal behaviour to become part of a group – from choosing a certain type of clothing to fit in, to committing acts they would never have committed under normal circumstances.

People move in certain ways. They tend to choose their paths according to certain patterns. In planning focal routes and dimensioning passages, it is good to know the following:

- People choose the path seen as the simplest way from A to B; that is, the straightest path with the smallest number of turns.
- People make use of visible shortcuts. It is therefore a good idea to identify shortcuts and either use them as ordinary audience routes or close them off. Read more about focal routes in Section 4.3.1.4.

It is a good idea for safety staff to function as models, for example in an evacuation. It is also good if the crowd can relate to the safety staff, which is made easier if the staff are seen as equals and also seem to be having a good time, even
if they are working at the festival. This should, however, not be exaggerated; staff should not be clowns; rather the crowd must obviously feel confidence in the safety staff.

14.1.1 Stress
Stress is an automatic defence reaction that develops in a person when the body “prepares” to act physically – i.e. fight or flight. In other words, to fight or to flee a perceived physical danger. When under stress, a person’s ability to think logically is limited, and even social ability becomes gradually more instinctive.

Stress is a subjective reaction – when the needs an individual experiences exceed the ability the individual feels s/he has to manage the situation. At an event, stress can thus arise when difficult decisions must be made quickly without sufficient information, or when someone in the audience feels either too crowded in the sea of people or too far back in line to have a chance at getting tickets.

14.1.2 Extreme stress
In extremely stressful situations, or situations where an individual experiences strong agitation, the body prepares for fight or flight. In these situations, the intellect is limited to acting for the individual’s survival. In many cases, it is therefore practically impossible to communicate with a person experiencing extreme stress. This also naturally involves limitations on the possibilities of communicating with a stressed or agitated audience.

A person experiencing extreme stress or agitation will preferably flee from the perceived danger, or towards something perceived as safe and secure, or lastly towards something recognisable. Promoters can make use of this knowledge. For example, the event area can be designed so that emergency exits are always visible, and care can be taken to clearly inform the audience in advance (e.g. through an announcer before the concert) of safe places to go in an emergency situation. This way, emergency exits, escape routes, and protection are known to the audience, and the chances that they will go there even in situations of extreme stress and agitation increase.

14.2 The crowd
Particular individuals who are not taking care of themselves, or who are subject to great stress, can often be managed. A crowd, however, is harder to control. It is important to understand that a crowd is not a homogeneous mass; it consists of many different individuals who all perceive, think, and react in different ways. When communicating with a crowd, communicate with them as a whole – for example through a loudspeaker, a megaphone, or signs. Spreading information by word of mouth can easily result in unverified and false rumours.

A crowd offers an opportunity for anonymity. An individual in a larger group in many cases feels that the risk of being revealed or identified decreases, or disappears entirely.
This is essentially not negative. Many attending an event want to achieve a feeling of anonymity— an opportunity to express their needs, dance, dress as they like, and hang out without being pointed out or treated as different or strange. The negative side is that certain people also act out in ways that are not allowed or dangerous to others— acts that normally wouldn’t be committed due to the risk of being revealed or because it violates their normal social codes. It can be a matter of violent or inappropriate behaviour such as fighting, crowd surfing, or throwing objects at the stage.

A good way to reduce the risk of such acts is to identify disorderly people early on, thereby reducing or removing their anonymity. In many cases it is enough for the pit staff to show that they saw what happened for the undesirable behaviour to stop.

Another possible measure is to increase and make the presence of safety staff plain to the audience, for example through reflective vests. If the crowd constantly sees safety staff around, the risk of disorderly individuals feeling they won’t be revealed is reduced. It is, however, very important that the audience feels that the safety staff are there for their safety and well-being—not to monitor them.

**A crowd needs structure.** The promoter will, in most cases, want to avoid surprises at the event. This includes, obviously, how the audience acts or moves in the area. Since the crowd itself cannot communicate internally, it will most often adapt itself if the event offers a clear structure.

To get a crowd to act as desired, people need to be given information and a clear structure. In this case, structure means making it as simple as possible for the audience to do what the promoter wants and as difficult as possible to do what the promoter doesn’t want.

A simple method is to ask ‘How do we want the audience to act here?’ and then ‘What can we do to get them to do this?’ The most effective tool for giving the crowd structure is a well thought-out design of the area and clear information. Read more about area design in Chapter 4.

**High crowd density in a audience can give rise to unwanted incidents.**

Up at the front, near the stage, the crowd density can be quite high during a concert, sometimes more than 7 people per square metre. Low crowd density is often found further back in the audience or at quieter concerts. An audience with a high crowd density has characteristics it can be useful to recognise:

- With a density of more than 6-7 per square metre, individuals could lose control over their own movements. This means, for example, difficulties in moving or fending off lateral movements. This results in a person being “swept along” in crowd movements, and that it is very easy to fall if a pressure surge moves through the audience.
- The feeling of being unable to control one’s own movements is felt to be very unpleasant by many. If one or a couple of people in a tight crowd is struck by strong agitation or anxiety but cannot get out of the area, this agitation can spread to other individuals in the crowd.
- “Pressure surges” in a crowded audience propagate through the crowd and sometimes don’t stop before the crowd disperses.
- “Pressure surges” can involve temporarily high crowd pressure, and what are known as “craters” can more easily occur. A crater forms when several people fall in a kind of “domino effect”, often as a consequence of a wave in the audience. When the crowd later “closes in”, it can be difficult for those who have fallen to get up again. Read more about how to manage these phenomena during a performance in Section 17.5.4.1.
14.2.1 Emotional charges in gatherings

A gathering can be defined as a group of individuals sharing a common focus. The audience at an event comes to the area to have fun and for a good experience, and the crowd is, hopefully, charged with positive feelings. But, in certain cases, external factors can charge the crowd with negative feelings, for example aggression or fear. The charge occurs most often over a longer period of time and comes from external circumstances.

Examples of factors that can “charge” a crowd:

- functional circumstances (cancelled concert, delayed artist, sold-out concert)
- incidents at the event (special effects, video displays)
- the artist’s behaviour (shocking behaviour, requests, challenges)
- spectator factors (crowding, alcohol intake, rush for good spots, thrown objects)
- safety/security or police factors (violence, provocation, arguments with the crowd)
- social factors (rivalry, nationalism or racism, anarchism, gang activity)
- weather factors (heat, humidity, rain or hail, lack of ventilation)
- other serious incidents (collapse of a building, stand, tent, or fence; fire)


The charged atmosphere of a crowd usually builds up over a longer period of time, but often it is a particular incident that sets everything off.

As promoter, it is important to get a feel for the mood in different parts of the audience early on and to counteract factors that could negatively charge the crowd. In many cases, the audience needs to take control over their situation and get structure. It is often enough to clearly inform people of why a delay has occurred and for how long, or to identify and remove the element of agitation or irritation, such as false rumours, unnecessary lines, or problematic people, for example.

14.3 Know the audience

If the promoter knows what kind of crowd is coming to the event, it is possible to predict to some extent how they will behave in a given situation, what type of undesirable behaviour can be expected, and what needs the audience will have.

The promoter can divide the audience into several different categories – age and sex, for example. It is also important to remember that different artists have different audiences. Artists are often included in the “identity package” of young people – they like a certain artist, or a certain type of artist, and therefore dress and behave in particular ways. This means that there is a certain crowd profile for an event with certain types of artists. Read more about artist profiles in Section 15.1.1.

14.3.1 Crowd profile

An event profile is a compilation of relevant facts about a certain audience group. With the help of an event profile, an idea can be formed and a deeper understanding of how the probable audience at the event will act and react in different situations can be obtained.

An event with only one concert or a thin supply of several similar artists can attract a relatively uniform audience. One event profile for the entire audience
is often enough. For events with a large variation of artists and attractions and a broad offering that attracts the general public – everyone from families with children to youth and older people – several different crowd profiles could be needed.

The audience’s background – physical conditions, outlooks and attitudes, mental states, and possible experiences, for example – are charted in the crowd profile. Assumptions on what needs or desires the audience have are also made. The crowd profile can give the promoter an idea of such things as:

- What goals the public has – to be seen, for example, or that the artist will see them, or to get drunk.
- What actions can be expected from the audience – being right next to the stage, for example, or to engage in “moshing” (throwing oneself headlong in different directions), or to fight. Read more about these behaviours in Section 17.5.4.2.
- What reactions can be expected in different incidents?
- Note that crowd profiles are based on assumptions, and the conclusions that can be drawn from them cannot be treated as facts. A well-designed crowd profile can, however, indicate a suitable focus for safety work, staff treatment, and other crowd management. See Appendix C, ‘Crowd profile’, for a number of headings that can function as a guide.

14.4 Crowd management

Crowd management involves everything from thoughts on how each individual visitor must be treated to how larger gatherings and crowd movement patterns during an event are managed. There are two approaches when it comes to handling a crowd, and the concepts “crowd management” and “crowd control” are often used:

- Crowd management stands for communication and efforts with positive overtones to get a crowd to act as desired.
- Crowd control intends more to force a crowd to act as desired through being cordoned off, for example, or sometimes the threat of repression or violence.

Within event safety, crowd management should always be aimed at – that is, to get a crowd to want to do what the promoter wants without feeling compelled or inconvenienced. The goal of crowd management is to get the audience to want to do what the promoter wants, and that the audience thinks that what the promoter planned is the easiest, most pleasant, and best way to do it.

Practical crowd management consists for the most part of planning and preparatory work, but also of continuous work with the crowd during the event. This means crowd management according to established routines, but which is still flexible when conditions (e.g. crowd flow, the resource situation, or the moment) change. Crowd management changes based on information and predictions, both of how the crowd is moving and how it is expected to move.

There are three basic conditions for proper crowd management:

- understanding the situation
- a structure that favours crowd management
- good communication.
14.4.1 Understanding the situation
A promoter who does not understand the audience will find it difficult to meet their expectations, needs, and desires. An audience whose expectations of the event experience and service are not met can be disappointed, irritated, or in the worst case angry. An audience charged with negative emotions is a bad foundation for a safe event.

Prior knowledge
The promoter and the promoter’s staff need knowledge and understanding of the following:

• Human behaviour at events
• The type of people civic attending the event.

All crowd management should be based on such knowledge and understanding – the deeper the knowledge the better. Theoretical knowledge in combination with personal experience is the absolute best combination.

Information acquirement
It is, however, not enough to have only prior knowledge of the audience and the situation. Events are changeable, so the promoter should have the opportunity to spot greater changes and problems in the crowd flow. To have satisfactory control over the crowd flow, those in charge need continual situation reports from the event area in general and risk areas in particular. This can be done, for example, through CCTV or observation posts with staff who record and warn of predetermined incidents or larger changes in crowd flow. See also Section 14.1 The individual, 14.2 Crowds, and 14.3 Know the audience.

14.4.2 Structure that favours crowd management
“Structure” here means the event’s organisation and staff resources, crowd management routines and plans, and how the event area is constructed. Planning and developing a structure that supports crowd management saves the promoter a lot of work and makes the event safer and more enjoyable. The following are important to keep in mind:

• Organisation and staff resources. For proper crowd management, an organisation constructed for crowd management is required; that is, that there are functions that report changes in crowd flow and which have the knowledge and skills to act when needed. The organisation should be flexible, and possibly somewhat oversized so that there are always staff resources that can be brought in case of an intervention. Read more about organisation and staff in Chapter 3.

• Plans and routines for crowd management. Prior consideration and being prepared for whatever happens as well as for the fact that everything may not go as planned is the be-all and end-all of crowd management. It is much easier to direct a crowd in a stressful situation if how it is to be done was anticipated and planned in advance; the action can thus be carried out according to a routine or plan. Read more about plans and routines for crowd management in Sections 14.5 and 14.5.1

• Structure of the event venue. Design the event venue so that it supports proper crowd management. This means, among other things, that the event should be constructed free of possible bottlenecks through entrances, exits, and audience routes being properly dimensioned and correctly positioned, and that there is a queuing system. Proper signage is also an important part of the structure of the event area. Read more about event venue design in Chapter 4.
14.4.3 Communications in crowd management

Good communications is perhaps the most important factor in successful crowd management. This applies to both communications before the event and communications in the event venue. Well-informed visitors manage better alone and are easier to manage than uninformed visitors. Visitors who receive good service and proper access to information enjoy things more. This is an important prerequisite for a safe event.

Everyone working with the event should be focused on service and sufficiently well-informed so as to be able to answer questions and provide information. If they cannot answer themselves, they should be aware of who does know and be able to refer people.

What should be common to all information for the crowd is that it is simple, clear, and redundant. Read more about simple, clear, and redundant information in sections 1.1.3 and 18.4.2.

Information sent out to larger crowds should be prepared, and preferably written down, so as to reduce the risk of misspeaking, lack of clarity, and misunderstandings.

14.4.3.1 Information in advance

The audience can find out information concerning times, prices, offers, artists, and different stages through a web page, tickets, posters, programme leaflets, and more. They can also be informed of the rules and policies that apply to the event, such as what may not be brought into the area. The visitor thereby gets a kind of basic education about the event. It is, however, important to remember that many visitors do not find out all advance information.

14.4.3.2 Reference information

Reference information means information that makes it easier for the visitor to find things in the area and in its vicinity. With the help of reference information, the visitor knows where the stages, other amusements, exits, catering, toilets, and other services are located. The information can be disseminated through signs, information panels, brochures, and staff. Read more about signs in Section 5.2.

14.4.3.3 Enabling information

Enabling information means information that encourages the visitors towards a certain action – for example, asking the audience to stay calm in front of the stage, choose another entrance in the case of long queues, or that the event is closing for the night and it is time to leave.

If the crowd needs to act in a certain way, it is a good idea if all the individuals in the crowd get the same message from the same source of information. Different messages from different sources increase the risk of misunderstandings or rumours. It is important to keep in mind that when communicating with a large crowd to get it to act in a certain way, the information given must be simple and clear. It should also be repeated several times.

Information sent out to larger crowds should be prepared, and preferably written down, so as to reduce the risk of misspeaking, lack of clarity, and misunderstandings. The following media are suitable for communicating with larger crowds:

- Announcers on the stage. An announcer is a transmitter that goes up on stage before or during a performance and sends a message at a point in time when the audience is, in many cases, very receptive to information. Think about choosing an announcer the audience feels confidence in. Read more about the importance of a script in Section 18.4.2.2.
• **Sound equipment.** Sound equipment has similar advantages to an announcer, but the disadvantages are that it can sometimes be difficult to get visitors’ attention, and that it can sometimes be difficult to understand the message.

• **Megaphone.** A megaphone is a good portable alternative when there is no access to sound equipment or during a power outage. It can be a very good idea to equip all sites that entail potential audience risks with a megaphone.

• **Temporary signs.** A sign has the advantage of requiring relatively little effort. It can, moreover, communicate a message in one direction and be read by several people at the same time. For example, getting the audience to understand that a certain entrance is closed is much easier with a clear sign. Read more about signs in Section 5.2.

• **Large video screen.** A message that rolls across a large video screen prior to a performance is read by a large part of the audience. Make sure, however, that the text and animation shown on large video screens is clear and simple so that it is not misunderstood. Read more about how large video screens can be used in Section 6.1.6.

• **Personal suggestions.** The safety organisation’s staff on patrol can talk to or call out to passers by in thoroughfares where many people are passing through, for example when arriving audience members need to be directed to less congested entrances.

For increased clarity, the same thing should be communicated in different ways. To combine temporary barrier fences, a temporary sign, personal suggestions from the staff and an announcer from the stage has a much greater effect than just a sign.

### 14.5 Crowd management plan

A crowd management plan is a tool to ensure that event crowd flows do not represent a risk to visitors or staff. It could help the promoter to think through the whole event in advance so as to see what could happen and what could be done about it.

The crowd management plan should have two components: an analysis section and a management section:

- In the analysis section, a picture of crowd movement patterns and the conditions at the event venue is created so that crowd flow does not cause problems.
- Those areas or situations where the crowd flow could be complicated are then remedied in the management section, either by adapting the event area or through measures to change the audience movement patterns.

The analysis is a good tool not just for identifying risks related to crowd flow, but also for creating a picture of what the promoter can expect during the event. The analysis section of the crowd management plan should also be included in the total risk analysis of the event. Read more about risk management in Section 1.5.

The crowd management plan should contain information on the following:

- **Focal points**
  - strong focal points; that is, the places where all or most of the visitors will pass through or visit (e.g. the stage, the entrances, or the campsite)
  - weaker focal points; that is, places that draw visitors but not to equally large extents (e.g. toilets, food vendors, or peripheral activities). Read more about focal points in Section 4.3.1.3.

- **Focal routes to and from the event as well as within the event area:**
  - strong focal routes; that is, footpaths that all or most of the visitors will use (e.g. between the entrance and the stage)
– weaker focal routes; that is, the footpaths that will not be used by all participants (e.g. between the stage and the toilets). Read more about focal routes in Section 4.3.1.4.

- **Bottlenecks or risk areas**
  – the bottlenecks that were identified (e.g. entrances or footpaths with poor surfaces, curves or footpaths that taper off)
  – focal routes that risk being heavily encumbered at certain points in time
  – areas or focal points that risk being congested at certain points in time (e.g. audience areas in front of the stage, queuing areas in front of the entrance or the campsite.) Read more about bottlenecks in Section 4.4.3.3.

- **Times**
  – when a large number of the visitors are expected to arrive at or leave the event
  – when some focal point is especially interesting to visitors (e.g. a certain stage during a certain performance, the entrance, the train station or campsite area)
  – when many are expected to be moving along a certain route in the area (e.g. to a stage right before a concert).

- **Audience behaviour that can impact crowd flow, both where and when it can occur, e.g.:**
  – a rush for good spots
  – crowding and pushing
  – picnics, ball games, or other activities that require space.

- **Management**
  – how it is planned to identify bottlenecks in order to avoid accidents or crowd congestion.
  – where the visitors should go, and how to make it possible to do that.
  – where the promoter doesn’t want the visitors to go and how to prevent them from doing that.
  – which areas and focal routes risk being overcrowded and which measures should be taken to prevent that. See Crowd management routine below.

The risks and problems uncovered in the crowd management plan can be managed in two ways:

- **Change the event** – e.g., increase the number of pens at the entrance, broaden the crowd paths or postpone the time.

- **Change the crowd’s behaviour** – e.g., increase the clarity and intensity of the information for the crowd or increase the number of staff, which can ease the flows.

There are different tools to change crowd flows at the event either temporarily or permanently. Some examples:

- **Signs.** A good sign strategy with informative, clear signs that show the way make safety measures easier. Read more about signs in Section 5.2.

- **Appeal.** The places and paths where it is desirable for the crowd to go should be as attractive as possible; at the same time as the appeal of places where the visitors are not supposed to go should be reduced.

- **Protection of lines of sight.** A well-placed sight barrier or line of sight barrier can direct where the audience places themselves in relation to what they want to see. Read more about lines of sight in Section 6.2.6.

- **Guide fencing.** Use guide fencing for things like queuing systems at entrances or to guide the crowd past a bottleneck. Read more about queuing systems in Section 7.3.3.
• **Light and shade.** Light, in most cases, is interpreted as open, active, and interesting, while shade is often interpreted as closed, inactive, and uninteresting. Use lights to mark desirable paths. Read more about lighting in Section 5.5.

• **Information.** Inform people about which way is most suitable or about what’s happening when at the event through things like signs, verbal information from safety staff, or announcers. This gives the audience the right options. Read more about information in Section 14.4.3.

• **Crowd management routine.** If it is found that a potential crowd flow problem cannot be eliminated, the event should create a routine for handling the problem – a crowd management routine. Read more about crowd management routines below.

14.5.1 Crowd management routine

A crowd management routine is a predetermined way to manage various phenomena around crowd flow and gatherings of people. A crowd management routine – in contrast to an emergency plan, for example – is rarely initiated by a dramatic event. The purpose of the routine is, instead, to prevent dramatic events from happening – that is, before something serious happens.

A crowd management routine is initiated when something that was understood during planning to lead to increased risk happens – for example, the rush of visitors at the entrances increasing, or an audience area filling up completely.

To create a functional crowd management routine, three functions are needed:

• **Alarm functions** in the form of people whose task it is to report to the decision-maker when certain predetermined criteria are met – for example, the queue outside the entrance is longer than 10 metres, or that the audience area is filled to more than 70 percent.

• **The decision-maker** – that is, the person who makes the decision to escalate or scale down the routine based on the reports from the alarm functions. The decision-maker should be located as far down in the organisation as possible so as to avoid long decision times. This person should, moreover, always be accessible and have a deputy. Read more about the deputy in Section 3.1.4.

• **Resources** that can be engaged when the routine is activated. The resources can consist of staff, extra fencing, or extra management forces.

The advantage of a predetermined, rehearsed routine is that the staff are prepared for likely scenarios and know what to do if they arise. Furthermore, the need for complicated internal information is reduced where orders are given verbally or via radio. The only communication required is actually the decision-maker saying: “Activate the crowd management routine.”

A properly elaborated crowd management routine can solve several types of problem, and having several crowd management routines for various incidents is an advantage for an event. A crowd management routine can, for example, be used to quickly change the crowd flow on a focal route, or cut off the inflow into an audience area that is becoming too full.

Another crowd management routine can be used to intensify event resources in relation to the expected number of visitors, for example when the number of visitors increases prior to admission. In this case, a crowd management routine can maximise the admissions capacity of the entrances, for example through more staff and more open pens.
How to create a crowd management routine:

1. **Identify the problem or risk that is to be managed.** It could be generally an issue of any audience dynamics problem at all – for example, the audience area in front of the stage is too full, a focal route is too heavily travelled, or that tension at one of the entry’s is too high.

2. **Decide on measures to eliminate the problem or reduce the risk.** This could, for example, involve sending extra staff to the area, opening more pens at an entrance, or redirecting a crowd flow. Also decide how the measures are to be carried out. The routine here should be very clear and relatively detailed: Who sends staff, and how many? Who is responsible for carrying out the various measures?

3. **Decide on the predetermined criteria that are to be reported to the decision-maker.** This could involve, for example, a long queue in front of an entrance, that the crowd flow along a certain focal route is increasing, or that the audience area is full.

4. **Designate alarm functions for the various criteria.** These should consist of management staff or staff who both have the skills to make an assessment and who are in a place where they can safely make a decision whether the criteria have been met.

5. **Make sure that the routine is operative, fail-safe, and can be escalated.**

   *Read more about plans and routines in section 1.4.8.*

6. **Write down the routines** and operational instructions for the key people in the routine.

7. **Practice the routines** with everyone involved.

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An example of a crowd management routine for counteracting an area becoming too full: Crowd management routine A should prevent the area in front of the stage from becoming too full. The stage safety manager is the decision-maker; the staff at the entrance to the area are the alarm function.

**Step 1:** Area 80 percent filled – prepare for steps 2 and 3: Staff are activated, fencing and signs are taken out, and mental preparedness in the entire organisation is increased.

**Step 2:** Area 90 percent filled – soft closedown: The entrance to the audience area is narrowed and the rate of admissions is reduced. A line forms outside.

**Step 3:** Area 100 percent filled – hard closedown: The area is closed off completely with the help of fencing. Information that the area is full goes out via signs, staff, and loudspeaker system, if any.

**Example** of a crowd management routine at an entrance: Crowd management routine B is to prevent long lines with the risk of crowd pressure and an irritated audience outside the entrance. The safety manager for the entrance is both the decision maker and the alarm function.

**Level 1** – When the line at the entrance reaches Target 1, the safety manager for the entrance activates the first level of the crowd management routine: Several entry pens are opened and more staff resources are sent to the entrances.

**Level 2** – If this is not enough, and the line grows past Target 2, the entrance safety manager activates the second level of the crowd management routine: All pens except one exit pen are used as admission pens, additional staff are dispatched, and the extent of admission inspections is reduced. The entrance safety manager informs the crowd via megaphone: “Please stay calm. Don’t push forward. You’ll get in soon.”
CHAPTER 15
ARTISTS
The artist is the focus of everyone’s attention at an event. This also means that the artist has the strongest influence on the crowd.

As well as performing, artists can also affect the crowd in other – not necessarily positive – ways. For example, an irritated artist can make the crowd agitated or violent. By the same token, a well-informed and understanding artist can help the promoter quell agitation in the crowd or spread information about the event, during pauses in the concert or in case of an evacuation.

This chapter deals with the safety aspects of artists’ stays at events and the rights and obligations that exist between the promoter and artists.

15.1 Preparations

By creating artist profiles and entering into agreements on how performances should take place, work on safety precautions at artist performances becomes more predictable and thus easier to implement.

15.1.1 Artist Profile

An artist profile is simply a description of an artist. The artist profile can be used to create an image of what kind of crowd is expected, how the artist is expected to act during the performance and how the artist will affect the crowd.

In order to be able to create an artist profile, the promoter needs to know how the artist has previously acted towards promoters and crowds and, what kind of crowd behaviour the artist’s performance encourages. This information can be obtained by talking to the artist’s contact person and with promoters who have hired the artist in the past. Of course you can also search the internet for information about the artist. Read more about what a completed artist profile can look like in appendix D.

The artist profile is then summarized in a risk analysis with the following components:

- Previous risks experienced
- Risk of material damage
- Risk of crowd or staff injury
- Special measures

15.1.2 Artist Contracts

During an event mix-ups and disputes can arise between promoter and artist. These could be about changed circumstances, one of the parties thinking they have been treated badly or behaving inappropriately, or if one the parties’ responsibilities is questioned. In these cases it can be an advantage for both parties to have an agreement to fall back on. The promoter and artist should therefore enter into an agreement – an artist contract.

The artist contract can regulate things that are not directly regulated by laws or statutes, e.g. rules and policies about things that the promoter considers not to be allowed at the event, who is responsible for things happening, and which times apply. The contract should also clarify the safety commitments expected from the artist and the staffers, and what level of security the artist can expect at the event.

In many cases the booking agency, artist agency or the production company write their own contracts and send them to the promoter. As a promoter you
should read the contracts carefully and then contact the artist agency for any changes or additions to the contract.

It is important to remember that the contract is an agreement between two equal parties who must both make sure that it is adhered to. The contract should therefore be written so that all the relevant points for both parties are included. It is better to write too much than too little, and also include things that may seem obvious.

The following details can be included in an artist contract:

- When the artist has access to the stage and backstage areas
- What insurance the promoter and artist have
- Limits regarding vehicles in the area
- Sound level limits based on stated maximum levels
- Requirements for application for use of pyrotechnical effects and reservation that such use can be stopped by the promoter
- Safety arrangements for the artist – guarding, crowds etc
- Situations where the artist is responsible for his/her own security
- Responsibility for equipment – whether the promoter is responsible for guarding the artist’s equipment and whether the promoter is liable to pay damages if equipment disappears
- Information about the safety organisation
- Information that the head of safety at the stage has the right to stop the performance, entirely or temporarily
- Information and regulations on the media’s work conditions near the stages
- Information on whether members of the crowd has the right to take still pictures from the crowd
- Information about what is not allowed, e.g. jumping into the stage pit, crowd surfing and throwing things into the crowd
- Confidentiality – is this agreement to be considered confidential or can either of the parties communicate it to the press?

Event after the contract is signed there should be a continued dialogue between the promoter and artist, or a representative for the artist. When the artist arrives at the event it can be a good idea to have a verbal run-through of the rules. A quick run-through can also take place as the artist prepares to go on stage.

A supplement to the contract is called the artist’s rider, and can be described as the artist’s wish list. The artist may send a rider containing all kinds of things – equipment, safety, how the dressing room should be decorated etc. Basically it can include activities both in front of and behind the stage, and it can be a good idea to inform the event safety staff about the rider.

Sometimes the artist has requests about safety work, e.g. the position of the crowd barrier or the number of pit staff. These requests must naturally be considered but they must never be allowed to have an adverse effect on the event’s safety.

### 15.2 Artist safety

The artist is at the centre of the visitors’ attention and may need guarding during his/her entire stay at the event. The need for guarding varies according to the artists’ popularity and the crowd profile. For less well known artists guarding in conjunction with the performance may be enough. Well-known artists may need guarding from their arrival until the end of the event.
The promoter should open a dialogue with the artist, or the artist’s representative, around their requests and needs as concerns safety and guarding at the event. However, an artist’s wishes must never be allowed to impair safety at an event.

The following occasions and areas related to the artist may need to be guarded by the event staff:

- Artist transport to and from the area
- Artist accommodation and parking space
- Artist’s private area
- Artist’s movements around the event area
- Stage pit and area around the stage
- Side activities e.g. interviews or autograph sessions.

15.2.1 Transport to and from the event
The artist should receive information about how to reach the event, where to park and when it is suitable to arrive. If there is a major risk of the artist’s transport to and from the event attracting a lot of attention, the transport should be guarded and if possible take place so the visitors do not notice it. The artists should be allowed to use entrances and exits that are not available to the event visitors. In this way you can avoid rowdy incidents and crowding among visitors who are trying to get close to the artist. This also applies to artist parking spaces and equipment. It can be a good idea to site these parking spaces near either the stage or the artist’s private area.

15.2.2 The artist’s private areas (“Backstage”)
The artist needs a private area for preparation and recreation before and after the performance. Access to private areas may vary depending on the event’s size and the artist’s pulling power. Backstage areas should be guarded. It is
important that only authorised people have access to these areas. Read more about backstage and the area around the stage in chapter 6.

15.2.3 The artist’s movements at the event
In some cases the artist will move around the event area. This could be for autograph sessions, interviews, or simply a request from the artist to move from one place to another. For these occasions the artist may need to be escorted. The promoter should open a dialogue with the artist, or the artist’s representative, about planned activities in the event area where they may need to be escorted. If the artist is popular then a record signing session or an escort may attract a large crowd. The activity should then have a safety level similar to that of the performance.

15.2.4 Guarding equipment on stage
Before and after the performance, the stage pit and area around the stage may need to be guarded, to protect the artist’s and event’s equipment and to prevent unauthorised individuals from accessing the stage or stage area. The contract can regulate who is responsible for guarding the equipment, and who is liable to pay damages for stolen or broken equipment, respectively. Note that there is a difference between being responsible for guarding and being liable to pay for damage to the artist’s equipment.

15.2.5 Event staff around the artist
To reduce the risk of unauthorised individuals trespassing, the areas around the artist should be access-reserved and the number of staffers working around the artist should be kept to a minimum. These staffers can be equipped with special proof of access related to their job, including avoiding irresponsible staffers bothering the artist with requests for autographs or the like. The artist’s private area and backstage should only be accessible to those staffers who have tasks related to those areas. Read more about safety staff requirements in section 3.4.

15.3 Safety surrounding the performance
The section below is about the artist’s role in safety measures and artist safety in connection with the performance. Section 17.5 describes in further detail how the promoter and event safety staff handle crowd safety during a performance.

15.3.1 The artist’s impact on the crowd
The artist’s behaviour on stage may affect the crowd – an artist that acts in a positive way can charge the crowd with positive feelings while an artist who acts in an irritated, irresponsible manner may charge the crowd with anger, e.g. towards the promoter and its staff or to other parts of the crowd. Read more about safety work during a performance in section 17.5.

Well in advance of the event, the promoter should make sure that the artist knows what he or she is allowed to say and not say and do during the performance and at the event in general. Have a discussion with the artist, or the artist’s representative, and put the relevant rules in the artist contract. As promoter you should think through in advance what you will do if the artist does not follow the agreements made.

15.3.2 Review prior to the performance
Well before the performance, the promoter should review the safety aspects regarding the artist’s performance with the artist or artist’s representative:
• Review the sections in the artist contract about safety again and make sure that neither of the parties have missed or misinterpreted anything.
• Review the safety procedures that apply on and around the stage.
• Inform the artist about the event’s procedures for an emergency show-stop in the performance and the artist’s role during such a stop.

The parties should also review the planned pattern of the performance. Check that nothing during the performance contravenes any laws, rules, agreements or policies. Check the following:
• Does the artist intend to throw objects into the crowd? Some things are more dangerous than others, e.g. broken guitars.
• Will there be pyrotechnics and special effects? If so, at which point/points in the performance?
• Are there any plans for the artist to go out into the crowd?
• Are there any plans to allow the crowd onto the stage?
• How long is the performance? Is there a risk that the artist will overrun the agreed-on time slot?

The review with the artist gives the promoter an opportunity to again call attention to what is forbidden, but also to facilitate permitted activities with increased preparedness during the performance. Read more about safety work during a performance in section 17.5.

15.3.3 The artist’s safety during the performance
The artist’s safety during the performance should be ensured by guarding all entrances to the stage and stage area. It is especially important that unauthorised people do not have access to these areas while the performance is taking place. If there is no backstage area the artist should be escorted by safety staff when going to and from the stage.

The promoter should also take measures to reduce the risk of the crowd throwing things at the artist. For this reason, if possible all visitors should be searched at the entrances. The promoter can also increase the depth of the stage pit to increase the distance between the crowd and artist and make sure that the crowd area is free from objects that can be thrown. Read more about the stage pit in section 6.1.1.

15.3.4 The artist’s actions in a possible emergency
The artist has the crowd’s attention during a performance. In an emergency, the right information and suggestions from an artist can help spread information and facilitate evacuations. Artists can help the promoter to inform the crowd about what has happened and how they should act in an emergency.

Note, however, that incorrect information and incorrect suggestions from the artist are highly likely to result in undesirable effects. It is therefore important to not involve an artist in the safety measures during an emergency, if you are not completely sure that the artist will convey the information that the promoter wants.

If the promoter wants to involve an artist in the work during an emergency this should be discussed carefully before the performance and be prepared in accordance with the event’s emergency plans. Read more about who has the right to pause or stop a performance and how this is done in section 17.5.5.

Do not change the safety procedures after the review.
CHAPTER 16
MASS MEDIA
If a large crowd, famous artists or something else newsworthy is expected, this will interest the mass media who will send journalists and photographers to the event. The mass media will then become another partner that the promoter needs to actively work with.

There may be a conflict between safety measures that limit the media’s movement, on the one hand, and the media’s task to freely cover events on the other. This means that an event’s safety planning must include safety for the mass media, while the mass media’s effect on event safety must also be considered.

16.1 Media organisation
A specific media organisation is needed if there is a major media presence at the event. This is especially important if something unexpected happens. A media organisation’s task is to satisfy the needs that the media’s presence at the event demands. It must also establish and maintain guidelines and rules for the mass media.

16.1.1 Press officer
The event’s media organisation should be run by a press officer. This person must make sure that everything regarding the mass media’s presence at the event functions properly. The press officer is usually the mass media’s contact at the event.

The press officer may have the following tasks:
- Develop a media policy and rules in consultation with the event safety coordinator and production manager
- Lead the media organisation
- Accredit the mass media
- Be the event’s spokesperson under normal circumstances and during any emergencies
- Ensure that there is a functioning press centre
- Inform the mass media about their rights and obligations
- Inform the mass media about the rules that apply to the event.

16.2 Rules and policies
16.2.1 Media policy
The media policy consists of guidelines for how the event staff should act towards the media and what the service for media representatives should include. The media policy should be created by the press officer in consultation with the safety coordinator and other appropriate representatives from the event management.

All of the event staff have the legal right to voice their personal opinion in the media. However, it can be a good idea to appoint a press officer or a similar function that makes statements in the media as a representative of the entire event.

16.2.2 Obligations and rights of the media
The promoter should develop rules and guidelines for people who work with the media. This will avoid any mix-ups and irritation as a result of the media’s work at
the event. These rules and guidelines should be distributed to both media and staff. The following can be regulated by a promoter:

- Who is accredited and the number of accredited photographers and journalists
- Where, and at what times, photographing and filming is allowed and prohibited
- Who has the right to stop the media’s work at the event, and on what grounds
- Who has the right to use the event’s press centre
- Which parts of the event the media have access to
- Further rules that are regulated in artist contracts etc.

The media has the following rights:

- The media is allowed to freely depict incidents at the event.
- The media has the right to not have its photographs or equipment seized.
- The media has the right to photograph and film in marked locations, as long as they are not in the way or affect security or safety work in any other way.

### 16.3 Accreditation

Accreditation means that a journalist receives an official permit to work at the event. Usually journalists send in an accreditation application well in advance of the event, which gives a good idea of how big the media pool will be. The amount of interest from the media determines, in turn, the size of the event’s media organisation.

Often the number of accredited mass media representatives is regulated based on the event’s capacity to receive them. The stage pit can only make space available to a certain number of people, and the number of photographers in front of the stage must sometimes be limited. For this reason the accreditation application should contain an opportunity to request which performances the photographers will prioritise.

The accreditation system is also a useful means of communicating the rules that apply to the media’s work at the event – the event’s safety regulations, for example.

The following applies regarding the information about the media’s working conditions:

- It should be available via a website during application for accreditation.
- It should be sent with the accreditation applications.
- It should be handed over in person when the media arrives.
- It should be posted in the media centre.

### 16.4 The media’s work at the venue

#### 16.4.1 Special access for the media

The media’s need for access to the artists means that they should generally be granted access to the areas where the audience cannot go. One of these areas is the space nearest the stage, between the crowd barrier and the edge of the stage, often called the media pit.
In order for the media to be able to work undisturbed it is also recommended that the event establishes a press centre or a media backstage area to which only accredited members of the media have access.

16.4.2 Photography
The basic principle is usually that the media is free to work in all of the areas of the venue that the audience has access to.

Restrictions on photography in other places than audience areas can be for safety reasons, but also for other reasons. For example, artists can have opinions on when and where photography can take place in connection with the performance. All of this should be agreed upon and communicated clearly well in advance.

While audience photography at the venue is sometimes limited to small cameras without interchangeable lenses, professional photographers are usually free to choose their equipment.

16.4.3 Television production
Television production at an event is usually controlled by the event. An agreement is usually concluded with a TV producer about what can be filmed and shown. Safety work in connection with TV production is primarily aimed at making sure that no one is injured by the equipment and that the equipment is not tampered with. Sometimes equipment is used above the audience, sometimes moving cameras sweep over the heads of the audience.

The artist may have opinions on when and where photography can take place in connection with the performance. As a promoter you should communicate this to the photographers.
Make sure that camera cranes are far enough away from the audience, that the audience does not risk getting too close to the equipment and that the equipment has been assembled properly.

Naturally, TV production in the stage pit must not obstruct the safety work in front of the stage. Special podiums or marked-off areas for TV production can be a good idea. Read more about stage pit design in section 6.1.1.

## 16.4.4 Staff expertise

It is important that the safety staff working closely with the media has knowledge of and understands the media’s task. The media policy is an important instrument here. It should clarify which rules apply to the media and which member of the event staff will communicate with the media on safety issues.

Some points:

- All safety staff should be familiar with the basics of the media organisation so they can refer the media to the right person to discuss regulations and statements on behalf of the event.
- All safety staff must understand the media’s task in general and at the event so that disagreements can be avoided.
- All safety staff must know the difference between the rules that apply to the media’s work, the safety rules and other rules (e.g. conditions from the artists).

## 16.4.5 Press centre

The event should establish a press centre, within a separate area that the audience cannot access, so that the media can work undisturbed. Only event staff and people with media or photographer passes should be granted access to this area.

## 16.4.6 Photography near the stage - media pit

For safety reasons there is a space between the audience and the edge of the stage, called the stage pit. Sometimes part of the stage pit can be cordon off to provide a work area for the pit staff and a specific area for photographers. The area is then called the media pit. The stage pit can only accommodate a certain number of photographers. Therefore the event should decide in advance how many photographers and which photographers will receive photographer passes to the stage pit and inform the photographers in question when they are accredited. It is also an advantage if the press officer stays near the stage during major performances, so that there is always a person that the mass media can turn to with their questions.

### 16.4.6.1 Stage pit practice

Safety work has the highest priority in the stage pit. The ground rule is that photographers must never disturb or affect safety work. Likewise, no photographer’s work can be disturbed as long as the photographers follow the relevant rules and instructions.

It is common practice for photographers to take pictures during the first three songs of a performance. It is a good idea to use a number of songs as the limit, because then no one has to look at their watches and everyone knows when the media pit should be cleared. If a serious situation occurs that requires increased working space in the stage pit, the stage safety manager can evacuate the photographers earlier than agreed upon. The stage pit should be large enough so that minor safety incidents, e.g. lifting over audience members in normal circumstances, can be handled without an evacuation.
The following practice is used for handling the media in the stage pit:

- The word of the stage safety manager is law in the stage pit.
- Photographers are escorted in groups by staff from the event media organisation, who hand them over to the stage safety manager.
- Access to the media pit is valid for a certain number of songs or amount of time depending on what has been decided upon (common practice is that photography is allowed for the first three songs). After that the photographers should leave the pit when requested to do so by the stage safety manager.
- The stage safety manager can cut short the photographers' work in the pit if safety work requires it.
- All photographers must be provided with valid passes.
- Equipment must not be placed so that it affects or interferes with safety work.
- The stage safety manager should inform the media if there will be pyrotechnics during the period that the photographers are in the stage pit. The stage safety manager should also make sure that the media do not stand in inappropriate places when the pyrotechnics are ignited.

If, as a promoter, you accept other, more restrictive terms from an artist you must also take the consequences of informing the media of this during accreditation or least well in advance of the concert. For example, this could concern during which songs photography is allowed, whether flash photography is allowed, etc. However, this is the responsibility of the media organisation, not the safety organisation. Read more about work in the stage pit in section 17.5.

16.4.7 The media’s work during an emergency

If a serious incident occurs, the mass media’s interest in the event will increase. Non-accredited media may turn up, while the accredited staff on site will take on the role of incident reporters. Cordoned off areas, evacuations, and so on must be respected by the media and they must not impede safety work. However, the media must not be hindered in their work to freely depict the event. Read more about communicating with the media during an emergency in section 18.4.2.
CHAPTER 17
SAFETY MEASURES DURING AN EVENT

Photo: Malin Sydne
When everything is in place – entrances, stages, artists, vendors, crowd, and staffers – then begins the practical work of seeing that the event runs without incident.

Every partial area at an event has its own special tasks and its own mode of operation. At the same time, all safety staff regardless of work group, aims for the same goal – a safe, secure, and enjoyable event for everyone involved. This chapter deals with safety measures while the event is ongoing.

17.1 Safety, peace of mind, enjoyment

The goal of safety work during the event is to ensure the safety, security, and comfort of the crowd. This is the foundation of a good event experience.

The practical safety work during the performance thus primarily deals with two things, namely:

- Look after the crowd’s safety and provide good crowd service in order to prevent and avert safety incidents
- Have good advance planning and proper preparedness prior to undesirable incidents.

The main task of the safety staff is to provide the crowd with a safe, secure experience. This means that they must work pre-emptively, be observant, and prepared to act if something undesirable happens.

One of the biggest preventative factors is creating a good atmosphere among the visitors through information, service, and pleasant treatment. This contributes greatly to a safe event. Keep in mind, therefore, that safety staff should be provided with information about the event, for example in the form of a programme sheet or the like, so they can answer questions from the crowd. The safety staff must, however, naturally prioritise safety measures over service work.

17.1.1 The role of safety staff

The safety staff are the public face of the event and the crowd’s safeguard. They should be the eyes and ears of the head of safety, and must therefore be attentive to risks and potential incidents.

The role of safety staff is thus a broad one. Safety staff must also be able to shift tempo mentally; they should be pleasant, calm, and secure in safe situations, but quick on the ball and energetic if needed.

The ‘state of mind scale’ is a good illustration of the focus of consciousness for those working with crowd safety. The model can be applied to all crowd safety measures.
The two lowest steps are a normal situation, but staff should always be prepared to move up a step if the situation changes, and move down a step when the danger is over or if the situation becomes easier to handle.

Stepping down is also important; safety staff full of adrenaline always looking for a problem to solve can very well be perceived as a provocation by the crowd.

It is important to emphasize that safety staff are not the same as security guards. Safety staff have no official appointment, and rarely any training, for handling risky situations. It should therefore be clearly communicated, both in operational instructions and reviews, that safety staff are not to expose themselves to risks.

The precautionary principle should be applied here – that is, if safety staff are unsure of whether something is risky or not, it should be treated as risky and therefore the police, a security guard, or other person with training in this situation should be called. Read more about the precautionary principle in Section 1.1.4.

17.1.2 Preparedness and advance planning

Proper preparedness means that people:

- Are prepared for what could happen
- Have planned in advance
- Have access to resources that can be engaged as needed.
Advance planning is about being able to step-up a response and prepare oneself gradually in order to confront an undesirable situation. The goal is to be one step ahead of the progress of events at all times; that is, to have a buffer zone between the pending accident and what is in fact happening. The safety organisation must be able to read the situation, react to it in time, and prepare staff and resources before the situation gets out of control and results in a problem that is difficult to manage, or into an accident.

Many situations can be predicted. For example, staff can find out whether a large number of crowd members are coming, whether there is a risk of rain so that people will crowd together in small areas under roofs, or if there are indications that parts of the crowd are violent. Through proper advance planning, situations can be spotted, prevented, avoided, or managed before they lead to problems or deteriorate into accidents. It could be a good idea to practice plans and responses in practice scenarios or management exercises along with event management and the emergency services concerned.

A prerequisite for advance planning is analysis and planning prior to various expected or unexpected situations. But it is important to emphasize than events are variable, and it is not possible to predict all imaginable and unimaginable incidents. While the event is under way, the information picture should be constantly supplemented and updated through, for example, reports from safety staff and the emergency services, and information from observations points or internal TV.

The head of safety should always have a good idea of what is happening and of what could happen at the event – and make sure that he is prepared to manage it. When event developments cannot be managed with normal operations, there should be a predetermined way to act. Read more about identifying risks in Section 1.5 and preparedness prior to serious incidents in Chapter 18.

In many cases, the worst mistake can be not to do anything at all, or to ‘wait and see’. In general it is better to have a good plan on time than a perfect plan too late.

Being a step ahead carries a certain risk of overhasty decisions, for example in situations that are not as dangerous as previously feared. Improper activation of a plan should therefore be stoppable or reversible. Read more about activating emergency plans in Section 18.3.1.2.

A preparedness model is a good way to gradually escalate preparedness. Starting a large-scale safety response unnecessarily can thereby often be avoided. Read more about the preparedness model in Section 1.4.8.3.

17.2 Safety measures at the entrances

The entrance is one of the most critical areas at an event. Crowding and queues can arise when large numbers of the event’s visitors want to pass through at the same time. But the entrance is also an excellent opportunity to increase the safety and comfort level of the event as a whole though making the visitors’ first impression of the event a positive one. It is therefore important to have as few elements of irritation as possible, and that the visitors feel welcome.

Make sure that the entrance has the capacity for the expected crowd size – as concerns both entrance dimensions and staff. Always have good margins! Read more about entrance capacity and siting in Section 4.3.2.4. and Chapter 7.
Safety staff that have no direct tasks for the time being can focus on giving the visitors a pleasant welcome. They can also function as quick reinforcements for the entry staff as needed. Read more about the role of safety staff in Section 17.1.1.

17.2.1 Preparations at the entrance

The following are important to keep in mind at the entrance:

- **Determine when much of the crowd is expected to arrive.** At events with only one performance it is an issue of the hours right before the concert, but at events with several performances, not all of the visitors will arrive at the same time. Rain often contributes to visitors coming later to the event, whereas sunny weather often gets the crowd to come earlier.

- **Keep continual control.** This applies both to what happens at the entrance and if the crowd influx increases. Set up observation sites on focal routes towards the entrance, for example having someone with a radio reporting in when a lot of people start coming. What is meant by "a lot of people" should be determined in advance: agree on a clear level, for example a certain number of arrivals per minute.

17.2.2 Work at the entrance

Queues at the entrance are most often unavoidable, but the important thing is to keep order. It should not pay off to push through the crowd, and people should not need to fight to keep their places in the queue. If the visitors notice that it’s possible to jump ahead in queue, fewer people will line up calmly, and instead form a disordered cluster in front of the entrance. Disorder and a lack of structure cause irritation in those who are actually queuing up.

The really devoted crowd members who are first on site are also right at the front of the queue; they want the best places and therefore tend to rush in.

Try to be fair as regards letting people in through the entrance. Also encourage good crowd behaviour through “rewards” – letting those who queue quietly come in quickly.

With larger queue formations, it could be a good idea to deploy staff to tell the crowd what’s going on – how they should behave, what they’ll need to go through before they’re let in, and how long they can expect to stand in the queue.

Depending on the type of event, the various entrance elements can vary. The following elements could take place at an entrance:

- Ticket sales
- Access control (i.e. bracelets, stamps, or ticket check)
- Age check
- Inspection
- Property depository

All these elements take a certain amount of time, and each element should be part of the entrance capacity estimate. Read more about entrances and exits in Chapter 7.

Keep the following in mind to make an entrance efficient:

- Analyse which elements in the entrance process are bottlenecks. The entrances can thereby be made more efficient, for example through increased resources, space, or staff.
- Get a feel for the crowd at the entrance. Are visitors tired? Is there stress or tension? What attitude do they have towards the event? Such information can indicate imminent risks, and give the promoter the opportunity to prevent them.
• Increase access to water if the weather is warm.
• Give all visitors a pleasant reception and identify possible problem people if the visitors seem irritated.
• Locate ticket sales away from the entrance, as this element takes a relatively long time per person. It is also advantageous to locate the exchange of tickets for proof of access (e.g. bracelets) elsewhere than the entrance to speed up the process when visitors want to get into the area.

17.2.2.1 Access control

Showing that the right person is in the right place is important. This takes place via an access system. Common access systems are bracelets, stamps, or tickets, where various colours on the bracelets (for example) can represent functions (visitor, journalist, staffer, or artist) and thus which areas the wearer has access to.

Some areas around a stage are only permitted for certain groups of people, which can be due to artists wanting to be left in peace, for example, or there is equipment that is particularly attractive to thieves. A curious or drunken guest that gets into an area where they are not allowed access can get in the way – or be overlooked in an evacuation.

Keep the following in mind as regards access systems:
• The access system should function smoothly and painlessly, and be simple. Avoid including exceptions in the system.
• The proof of access should be checked carefully, since forgery attempts are not unusual. Bracelets are most easily checked through seeing if they are properly attached and are of the correct quality, design, colour, and material. Ticket manufacturers often have tips on how to detect if someone has forged a ticket.

Carrying out access control among visitors already in the queue at the entrance can be an advantage, as passage through the entrance can go more quickly.

17.2.2.2 Inspection

The promoter should set up signs outside the entrance with information stating that the promoter retains the right to inspect visitors. Inspection is conditional; visitors can of course choose not to allow themselves to be searched, but they will not be allowed into the event, either.

Having inspection take place early in the admissions process can be advantageous, as visitors who are denied access for refusing to leave inappropriate items behind can then easily leave the queue. There should be clear rules as to what it is not permitted to bring in. These rules should be clearly communicated to the visitors – for example, through text on the event’s website, on the tickets, and on clear signage at the entrance.

Below are several examples of what the promoter may choose to prohibit:
• Stuffed mattresses or furniture (fire hazard at the campsite)
• Animals
• Costume masks
• Glass bottles
• Alcohol
• Plastic bottles
• Knives or large scissors
• Markers
• Spray paint cans

As promoter, you may reserve the right to inspect visitors that want to come in. This is called conditional inspection and means that the visitors allow themselves to be searched of their own accord so as to gain entry to the event.
- Recording equipment
- Large quantities of posters (without a permit)
- Products for sale (without permit)
- Potentially harmful products, for example air horns
- Umbrellas, flags, and other items that could be used as weapons.
- Stereo equipment that runs on generators or car batteries.

Visitors should leave behind items that the event does not want to let in, but which are permitted by law, of their own accord. The alternative is denial of entry into the event.

Weapons and products that are prohibited by law are always forbidden, regardless of what the promoter thinks. In accordance with §18 of the Swedish Public Order Act, alcohol, wine, and beer may not be drunk or consumed at a public event if no permit has been issued.

The promoter’s staff cannot confiscate what they find in a search, regardless of whether it violates event rules or not – only the police or licenced security guards may confiscate items, and then only items that are prohibited by law.

As a result, licenced security guards should be at the entrances – both because people who are denied entry or who are warned about leaving items behind can act violently, and because there should be a person available with the authority to confiscate prohibited items that are found. If security guards apprehend a person or take them into custody, they will carry out what’s called a protective search in order to look for dangerous items.

Since licenced security guards are representatives of the public, they may not conduct conditional searches by virtue of consent from event visitors when they pass through the entrance. A conditional search of this type should preferably be carried out by crowd safety staff. Read more about licenced security guards in Section 3.6.

17.2.2.3 Age check

Certain events have an age limit – for example, if the event area is an area where alcohol is served, or if the promoter has an age policy for the crowd. Age checks may only be conducted by event staff. A licenced security guard has the right to ask visitors for identification, but there is no obligation for the person approached to prove his or her identity. Refusing to show identification to licenced security guards does not give them the legal basis to use any of their authority or to search the visitor. Read more about licenced security guards in Section 3.6.

17.2.2.4 Preparedness at entrances

An entrance is a crowd flow bottleneck where long queues can form quickly. A long queue is, however, not always an element of agitation, but problems can arise if what the visitors are queuing for is growing closer or if the crowd flow towards the line increases drastically. There should therefore always be preparedness for managing longer queues:

- Plan in advance for what should be done if the queues are too long or if the queue situation around the entrance is untenable.
- Open more entrances or bring in more staff if visitors are streaming in to a greater extent.
- Redirect the crowd, if possible to other entrances to reduce pressure.
- Specify what a “long line” is or what “many people on the way” means. For example, put down one or several marks outside the entrance to measure the queue against, or count how many visitors per minute are passing certain
points on the passage leading to the entrance, and compare it with the admissions capacity. Read more about crowd management routines in Section 14.5.1.

17.2.2.5 Sneaking in
Sneaking in is when someone enters the event area without permission. For example, it could be an issue of getting into a festival area without a ticket, or into a backstage area without proper accreditation. Sneaking in is a crime, according to the Swedish Criminal Code (SFS 1962:700, deceptive behaviour). It is punishable by fines or a prison sentence of up to six months.

People who sneak in is also a problem from a safety perspective. Those who sneak in can bring in prohibited items into the area, and can also injure themselves getting into the event area. If people sneak in it can also result in the estimation of the number of people in an area being incorrect, and can reduce revenues from the event.

Completely stopping people from sneaking in requires a large amount of resources in the form of planning and staff. It is possible, however, to reduce the risk through proper planning of fence placement, staff placement, and lighting. The promoter should aim at the area just outside and just inside the fence being well-lit, surveyable by staff, and that it is free from vegetation, buildings, or similar that can be used as an aid in climbing over the fence.

People who have sneaked in, discovered in the event area, can be removed by licenced security guards or the police but not by normal functionaries. Functionaries can, however, apprehend those who have sneaked in according to the principle of "citizen’s arrest". The person who have sneaked in must be turned over immediately to the police. The police are obligated to report the crime but can submit what is called a “report remission” if the crime is judged to be insignificant and it is obvious that the consequences will only be fines.

Keep in mind that there can be a large number of people who tries to sneak in at certain types of events, which can require more resources to prevent this and to manage the individuals who are caught. A promoter of an event normally may not have any form of debit system where the person who has sneaked in is charged a fee for entering the event area.

17.3 Safety in the event area
At many events, the crowd itself is an attraction; the crowd comes not only to see the performance but also to party, hang out, and experience the event area. There should therefore be safety staff in every area of the event where there are visitors. Heavily exposed areas should have stationary safety staff, while less exposed areas should be monitored by staff patrols. Read more about the selection and preplanning of the event venue in Chapter 4.

In many cases, safety staff are perceived as an assurance just by being seen. Visitors can, moreover go to safety staff to ask questions, get help, or report any incidents.

The safety staff are the “eyes and ears of the event” and it should be routine that everything the safety staff sees and hears that is relevant to safety work is reported immediately to the nearest manager. This increases the safety managers’ opportunity for advance planning.

Certain areas may be so critical that it is a very good idea to locate safety staff at fixed stations there as on-site observers, for example at bottlenecks or focal
17.3.1 Safety features at the event venue

There are a number of different safety functions in an event area with different tasks but the same goal – a safe, secure event and a good experience.

A description of various safety functions follows below. In reality, safety staff can have several of these functions:

- **Observers.** All safety staff are observers with the job of observing and either acting on their own in a situation or forwarding the information to the nearest manager.

- **Gate monitoring.** At most events there are a number of areas where crowd access is limited. Safety staff at the entrances to such areas check proof of access upon entry, and sometimes also what is being brought into the area. Since gate monitor staff stand in the same place, these staffers can also function as observers and disseminators of information. Read more about access control in Section 17.2.2.1.

- **Patrols.** Patrols mean safety staff without a fixed position. Patrols can be used to cover large areas, or areas that are more vulnerable to problems, or that are too difficult to monitor from a fixed position (e.g., an outer fence). Patrolling out-of-the-way spaces and areas where crimes may occur – for example, drug trafficking or violent crimes – is important. Read more about the role of safety staff in Section 17.1.1.

- **Night-time guarding.** Many event venues are situated outside and are relatively easy to get into. It is not unusual for equipment to be left in the area overnight, especially during a multi-day event. To avoid damages and theft, the event venue can be monitored during the night. If safety staff are to be used for night monitoring, you must ensure that they are over the age of 18. The alternative is to employ watchmen for night monitoring. The task of safety staff is not to take action, but to report or give the alarm.

17.3.2 Preparedness with additional resources

There will always be incidents during which the planned manning level will not be sufficient. There should therefore always be preparedness and the capacity to respond when something unexpected happens. This could, for example, be an on-call group or a staff pool that can come in and cover the need for extra resources in a certain area.

For larger events where the need for response operations exceeds access to resources, the event needs to have an emergency plan that describes how SOS Alarm should be contacted, and who does what while waiting for the police, fire & rescue service, and ambulance service to arrive. Read more about preparedness for serious incidents in Chapter 18.

17.4 Campsite safety

The campsite is not just a residence for event visitors, but also a gathering place where visitors go to hang out and party, for example before and after concerts. This means the campsite, in many cases, requires safety coverage around the clock.

Planning safety measures at a campsite should be given as much attention as safety measures at the event venue; keep in mind that the risk profile for the two areas differ somewhat.
Safety work at a campsite deals a lot with crowd flow, fire safety, and guarding to maintain general order, safety, and security against crime – theft, battery, and assault, for example. Read more about campsites in Chapter 8.

17.4.1 Advance planning at the campsite

The campsite standard affects safety measures. A campsite that has shortcomings in its service functions is more difficult to keep safe than a well-constructed campsite. A structured, well-kept campsite invites tidy behaviour.

It is important to have an idea of what time the crowd will arrive at, and depart from, the campsite. For example, keep track of when the most popular artists’ concerts end to get an idea of when visitors are expected to arrive at the campsite from the event area.

Knowledge and information acquirement is the be-all and end-all of safety measures at the campsite. There should be routines for how the event observes crowd flow to and from the campsite so that safety responses – for example at the entrances to the campsite or event – should be dimensioned in relation to the number of visitors. Read more about crowd management routines in Section 14.5.1.

Campsite area capacity estimates often tend to be shattered; this is because the campsite area could become unusable after heavy precipitation or if the visitors’ tents are not placed as planned.

Let the campsite safety staff guide newly arrived visitors to suitable tent locations to ensure that fire-breaks are not blocked and that the campsite capacity estimate is not shattered. It is good to have a reserve campsite if the ordinary campsite is expected to fill up. Routines to spot when the campsite is beginning to fill up and to redirect new guests to the reserve campsite should also be developed.

One of the bigger challenges for safety work at a campsite is to observe incidents while they are still controllable, and to manage the situation before it worsens.

There are good opportunities to identify risk elements at a campsite that could spread to the event area – for example, groups of rowdy visitors that you should keep an eye on when they go to the event area. Observation posts and active patrolling are good tools to observe events in their early stages. The staff working with this should have clear routines for how, and to whom, the information should be reported.

17.4.2 Preparedness at the campsite

There are many risks in a campsite area that could lead to accidents but which can be difficult to manage with existing staff. There should therefore be preparedness for how such incidents should be managed, and possibly an action plan for:

- Fires
- Large public disturbances
- Serious injuries.

For larger events where the need for responses exceeds the access to resources, the event needs to have an emergency plan. Read more about preparedness for serious incidents in Chapter 18.

17.4.3 Various safety functions at the campsite

The safety functions at a campsite are on the whole the same as at the event area, but the focus lies chiefly on:
• The campsite functions should be in operation around the clock.
• Fire safety.
• The promoter must maintain safety without infringing on the integrity of the visitors.

The task of the safety staff is to observe what is going on among the tents, but keep in mind that the tents are the visitors’ residences and should not be entered by safety staff, even if they can, naturally, ask if they can enter the tent. If there is suspicion of crime, the safety staff should contact the police, who may conduct a tent search.

The following could be some of the ways to increase safety at a campsite:
- **Observers at the campsite.** Observation sites or observation towers with an overview of the entire campsite are an excellent complement to patrols for spotting fires and public disturbances. It is important to construct the towers and use them so that the visitors do not feel like they are being monitored, but rather perceive them as a service function. For example, avoiding having uniformed staff at these locations.
- **Fire extinguisher and fire posts.** A fire post is a station where there is firefighting equipment – fire extinguishers and fire blankets, for example. The fire posts must be manned by staff that can manage the equipment; a fire extinguisher is useless if there is no one in the vicinity who knows how to use it. Staff at fire posts should respond in the event of a fire, and notify SOS Alarm if needed. No point in the campsite should be more than 50 metres away from the nearest fire extinguisher. Read more about safety functions in Section 17.3.1.

### 17.5 Safety at the stage

Large concerts at a stage with only one artist and possibly opening acts can last for three to four hours, with or without breaks. At a festival with several stages, a performance often takes 40-60 minutes and the next band performs after a break of an hour or so. The stress for both the crowd and the staff varies, but safety work is often run the same way. Safety measures at the stage are focused chiefly on safety during the performance as long as there is an crowd in front of the stage. Before and after a performance, stage safety is almost entirely guarding equipment and preparing for the coming performance. This section deals for the most part with work around the stage pit; it is also a part of the stage area where the most response in the form of staff and material is required.

#### 17.5.1 Safety functions at a stage

Safety work at a concert is based on close collaboration between safety staff and the staff working with the artists and production.

The stage safety manager is responsible for safety around the stage, leads the work in the pit, and should have the final say on safety issues around the stage. Furthermore, the safety manager should supervise what’s going on in the crowd during the concert and then delegate work tasks to the pit staff. It is therefore a good idea if the safety manager can work from a place with an overview of the crowd area and at the same time have the possibility of communicating with pit staff and the stage manager with the help of signs.

The resources should be sufficient so that the stage safety manager can concentrate on that work and not need to carry out other work tasks in the stage pit.

The stage safety manager should, furthermore, be given full authority to judge if something is not safe. This involves the right of veto in issues of whether...
a concert should be paused or if previous agreements should be changed; for example, sending photographers away earlier than planned if a concert is too rowdy or if safety or medical service staff need additional room to work.

Keep in mind:

- The pit staff are subordinate to the stage safety manager. During the concert, the pit staff work on serving the crowd with water and being watchful for crowd members who are not feeling well, who are signalling that they want to get out, or who are caught in something that requires intervention. The pit staff must be an assurance for the crowd.
- The entire length of the pit should be staffed; if one staffer disappears another one should step in. Organise the work so that every staffer has an area for which they are responsible.
- There should always be opportunity for backup. Lifting a person over the crowd barrier is heavy work, and sometimes rest is necessary. There should therefore be routines for how pit staff help and relieve each other without leaving any area unattended.

Other staff whose main task is not safety – for example, the stage manager and area manager – are often involved in safety measures around a stage. Since the various roles come from different parts of the organisation, it should be straightened out who has what responsibility and how collaboration should run.

- The stage manager leads the work and is in charge of everything that happens on the stage – everything from the artist during the performance to the technicians who are in charge of lighting and sound. The stage manager is often the counterpart to the stage safety manager in the production organisation. The stage manager can have fixed safety tasks, but is chiefly an invaluable contact between the technicians and the artists. It is important for the stage manager to be contactable at all times during the performance. It is also a good idea if the stage manager is positioned in an established place where it is possible to signal the stage safety manager. The stage manager should – just like the stage safety manager – be given authority to pause or interrupt a performance. Read more about pausing a concert in Section 17.5.5.
- The area manager is in charge of the artist before and after the performance, and of service around the stage area such as catering, accommodations, and logistics.

17.5.2 Safety prior to a performance

Proper safety requires preparation. It is not enough simply to man the stage pit with staff. Preparatory work on the stage is based on creating as good conditions as possible for the performance itself. Once the performance is under way, there is no room for large changes. Be far-sighted and study crowd and artist profiles to gain knowledge of what could be expected to happen, and how the artist and the crowd could act in given situations. This way, pit staff actions can be adjusted to the type of crowd that is expected to come.

The work of the stage safety manager prior to a performance covers checks of equipment, resources, and information for the pit staff, the stage manager, and the area manager, as well as creating good relations with the crowd.

17.5.2.1 Checks prior to a performance

The following should be checked prior to every performance:

- Access to expendable supplies – for example, hearing protection, water bottles or jugs, and water
- The crowd barrier – that it’s standing correctly and put together properly
• Fire extinguishers
• Medical service materials
• The crowd area – it should be free of hazardous objects and things that can be thrown.
• Show-stop equipment
• Emergency material, microphones
• Backup electricity
• Backup lighting.

Some performances lack crowd lighting. Dialogue with those in charge of lighting and sound about the possibility of getting extra crowd lighting for darker performances.

The stage safety manager is responsible for there being enough pit staff in the stage pit. The stage safety manager should also make sure that there are medical service staff and licenced security guards on hand as needed.

17.5.2.2 Information for pit staff

When the area has been prepared, the stage safety manager should have a brief informational meeting with the pit staff. Training in work tasks, working methods, and break plans should have been taken care of long before this, but prior to every performance the pit staff should be informed of the following:

• **Artist and crowd profile** – a shorter version of the artist and crowd profile, and what can be expected of the artist and crowd, how they are expected to behave or react, and possible risk elements.

• **Special effects** – pyrotechnics, fog, smoke, etc. The pit staff should know what is going to happen and where it is inadvisable to be when special effects are used. Read more about special effects in Section 12.2. Special events – the pit staff should know everything that will entail safety responses or an increased risk; for example, if the artist is coming down into the pit or out into the crowd, if the artist is going to throw things out to the crowd, or if the artist is going to pull crowd members up onto the stage.

• **Photographers** – how many photographers are expected, and at what times they have access to the stage pit or the media pit.

• **Division of labour** – who is responsible for various tasks; filling water or counting songs, for example.

After the information, the tasks during the concert are delegated. Someone may be needed to count songs so everyone knows when special effects are going to be set off, for example, or when something special is planned. In many cases a person responsible for getting the photographers in and out of the pit is needed.

17.5.2.3 Information for stage manager and area manager

The stage safety manager, stage manager, and area manager should always have a meeting prior to a performance to discuss new things that have occurred, and to check that everyone is aware of their role in any possible pauses or interruptions of a performance.

17.5.2.4 Pit staff crowd work prior to the concert

When the pit is manned, the pit staff should look for their places and take charge of early arrivals. The following are important to keep in mind:

• **Service and social contact.** Take the opportunity for small talk with the first arrivals and create a personal relationship. Include those who arrive later to create a positive mood in the crowd. Pass out water to the audience who have been waiting long and, if possible, hand out hearing protection for those who don’t have it.
• **People at risk.** Look for those who are at risk for getting caught up in trouble; young people and drunk people are often in the risk zone. Talk with them early on and make it clear to them that they can get help if the pressure gets to be too much. Tell them there is water available if it gets too hot during the concert.

• **Hazardous objects.** Take away hazardous things like flags or placards if the holder appears ‘irresponsible’. Bracelets with a large amount of rivets can also pose a risk. Keep them at the edge of the stage in order to return them later.

• **Problematic people.** Identify “problematic people” early. It is good to show you’ve seen them; it removes their anonymity and makes it less likely that they’ll be a problem during the concert.

Often, people in the crowd will want pit staff to take care of bags. Try to avoid this, however. If bags are allowed into the pit, it won’t be long before the stage pit looks like a cloakroom. Furthermore, it will be difficult to give items back to the proper owner, and they can get in the way of safety staff during the concert.

### 17.5.3 Safety during a performance

Carrying out the work itself is an issue of making sure the crowd can take in the performance without being injured or feeling unsafe. Since the stage safety manager is the one with the overview and makes decisions about activities in the pit, s/he should avoid going down into the pit to talk with the crowd or lift crowd members for as long as possible. The pit staff must always be able to get to their manager and always know where s/he is.

#### 17.5.3.1 Proper conduct in the stage pit

The pit staff should work without disturbing the experience for the crowd and try to be discreet as long as it does not affect safety. This means, for example, avoiding standing in a crowd member’s field of vision if it is not necessary, and not to draw attention away from the artist, if it is not part of the safety measures. The job of the pit staff is service work. Keep in mind that the pit staff is in full public view; the crowd sees everything they do and hear much of what is said prior to the concert. It is therefore good if the pit staff radiate friendliness, confidence, and a sense of well-being – not dissociation and being screened off. Sunglasses, crossed arms, and wrinkled brows should consequently be avoided.

#### 17.5.3.2 Lifting crowd members

It is not unusual for people to need to be lifted over the crowd barrier several times during a concert. If anyone shows signs that they are beginning to not feel well, the pit staff should attempt eye contact and go up to talk with the person. They should offer water and say that they are ready to lift the person if needed and if the person concerned asks for help to get out. People who are ill should be turned over to medical care. Avoid bringing medical service workers into the pit, however; instead, lead the person taken into care to the medical service workers.

If the person lifted over is okay, lead him/her back to the crowd area again. It is important to follow the person lifted over all the way to the gate – otherwise there is a risk of having crowd members running into the area behind the stage.

A good way to lift people is to turn them with their backs to the crowd barrier, getting a good grip, and lifting. Don’t forget to secure your back and lift with your legs. The person can then be “dragged” over the barrier. If people being lifted are turned the wrong way, they can be injured when the crowd presses against their legs and it is impossible to bend them forward at the knees.
17.5.4 Preparedness during performances

Concerts are the moments during events with the toughest conditions – loud noises, dark often combined with bright, blinding light, crowding and a high level of deindividuation. It is therefore important that the safety organisation is extra alert during the concert.

17.5.4.1. Risks during a concert

A number of hazardous incidents could arise during a concert. Many of them are natural features of a crowd during a performance and only need to be monitored, while others require the safety staff to act. The stage safety manager is responsible for observing the course of events or risks and making sure that the pit staff acts correctly.

The following risks should be noted:

**High crowd density.** 5-8 people per square metre is not unusual right at the front by the crowd barrier during a concert with a popular artist or a devoted crowd. A high crowd density rarely means constant high crowd pressure but that the pressure often comes intermittently. Pressure surges and craters can sometimes occur with high crowd density.

Keep the following in mind when there is high crowd density:

- Be observant for anyone shows signs that they are beginning to feel ill. Look at the faces of crowd members. If they look pale, tired, or afraid, attempt eye contact, go up to them, and talk to them.
- Offer water and say you are ready to lift them over if needed and if the person concerned asks for it.
- Note that high crowd density – and thus the risk of being crushed – can occur at the crowd barrier as well as at lighting and sound towers. If these areas are vulnerable due to a large number of crowd members or unsuitable placement, the lighting and sound towers can also be fenced in with crowd barriers and be monitored by pit staff.

**Craters** occur when waves develop in a crowd with a high crowd density and someone falls down. Crowd members fall in different directions and it looks like a crater in the crowd. It can be difficult to get up before the crater fills in and the risk of injury for crowd members who do not manage to get up in time is great. Keep the following in mind:

- If a crater develops, the pit staff and stage safety manager should ascertain whether everyone managed to get up before the crater filled in again. It can, however, be difficult to see if the crater occurs at a distance from the crowd barrier.
- Light up the crater area with a strong torch, and analyse the faces and reactions of crowd members. Does anyone in the crowd seem exhausted, afraid, or upset? Is anyone in the crowd looking down, or do they seem to be looking for something? This could be a signal that someone is still on the ground. If the crowd seems unconcerned, it can be assumed that everyone managed to get back up. Note that this is only an assumption, and it is smart to continue to monitor the area for a while as well, after everyone is believed to have gotten up.

**Waves.** Pressure surges in the crowd occur most often in relatively high crowd density. They may develop in connection with irritation, aggressive dancing, agitation from the artist, etc. Waves mean that large parts of the crowd move violently from side to side (or in some cases back and forth). Waves propagate, and a powerful pressure surge through the crowd often does not stop before it...
reaches the outer edges of where the crowd density is lower. Powerful waves entail a great risk of craters. Keep the following in mind:

- If waves develop in the crowd, the pit staff should increase contact with the crowd at the front and step up their observation of the sea of people.

17.5.4.2 Isolated incidents in the crowd

There are a number of risky behaviours in the crowd that should not be permitted for safety reasons. The ground rule for managing them is attention and eye contact.

Keep the following in mind:

- Use a torch to light areas up. If the guilty people know they are being watched, the impermissible behaviour may stop in many cases.

- Try communicating with the active people and try to get them to stop of their own accord.

- Be careful with direct intervention. Every measure provokes a counter-reaction. The job of the pit staff is to make sure that no one in the crowd is injured. If, for example, a pickpocket or someone lighting a hash cigarette is spotted in the crowd, the pit staff should remember the person’s face and inform the police or security guards as soon as possible after their own tasks are finished. The principal task of the pit staff is to ensure that crowd members are not injured.

- Even people who are obligated by law to apprehend should think over the consequences of the act. Sending the police or security guards into the sea of people during the performance to fix the problem can lead to undesirable consequences.

Be careful with direct intervention. Every measure provokes a counter-reaction.

The principal task of the pit staff is to ensure that crowd members are not injured.
Crowd surfing involves a person getting up onto the crowd’s hands and surfing forward over the crowd’s heads. It is a risky behaviour that should not be allowed, since there is an obvious risk that the crowd surfer will injure himself or others in the crowd. On the other hand, crowd surfing is an effective way for those who do not feel well to get out of the throng. Keep the following in mind:

- Take in crowd surfers by turning them so they lie alongside the crowd barrier
- Never pull on a crowd surfer
- More than one staffer should take in every crowd surfer
- Lead the crowd surfer out of the stage pit.

Stage diving involves someone from the band or from the crowd jumping off the edge of the stage or the crowd barrier out into the crowd and landing on the crowd’s hands. The risks associated with this are, for example, the person falling through the crowd to the ground, or that the crowd members the person lands on are injured.

A crowd member on someone else’s shoulders is a common phenomenon at concerts. The risk of serious injuries in a fall is great. Moreover, it causes irritation in those behind them, since it blocks the line of sight.

Rowdy people can be managed as follows:

- Point at the person concerned, make eye contact, and continue observing the person.
- Warn the person if the behaviour doesn’t stop and evict them if necessary.
- Call a security guard for the eviction if necessary.

Aggressive dancing (moshing) is more common among more aggressive genres (punk, hardcore, screamo, metal, etc.) A “mosh pit” means that several crowd members create an area where they jump and dance into each other. This can result in powerful collisions with injuries as a result, or crowd members falling, and so on. In many cases it can be difficult to prevent a mosh pit that’s already started in the middle of the crowd from continuing or becoming larger.

Dancing in a circle, often at high speeds, entails a risk if the extent is great enough. It can easily become disorderly when the circle breaks up, and there is a risk of crater formation from people falling over.

Flags that are not waved carefully should be taken care of and be returned after the concerts.

17.5.4.3 Incidents in the artist’s appearance
The artist’s acts can affect the crowd in many different ways. Before the concerts, the performance should be discussed in detail with the artist or the artist’s representative, and by the time the artist contract is signed, all the parties should know and accept how the gig is to be performed. Keep the following in mind:

- Pyrotechnics on the stage are a risk element that can be minimized through staff preparation. The stage safety manager should make sure that the pit staff have hearing protection and know which songs the pyrotechnics will be used in, as well as where the fire extinguishers are located. Just before they are set off, the pit staff should take a step forward towards the crowd. It is also important for the pit staff to gauge the crowd’s reaction very carefully after heavy pyrotechnics.
• **Agitational artists.** It can happen that artists agitate against the pit staff, which can easily make an involved crowd get out of hand. It’s an “us and them” situation that can be counteracted through communication with the artist prior to the gig and proper preparatory work with good crowd contact. If this happens anyway, the stage safety manager contacts the stage manager so the latter can communicate with the artist’s staff so that the behaviour stops.

• **Crowd on the stage.** Sometimes the artist will want to have someone from the crowd up on the stage. This can cause crowding up front and should be avoided as much as possible. If that happens, it should be determined beforehand who is going up, and they should get up on stage another way than over the crowd barrier, if possible.

• **Delayed artists** can create irritation in the crowd, not least because they don’t know when the concert might begin. If it is possible and suitable, an announcer can tell the crowd the reason for the delay, and how long they can expect to wait. In such a situation, the pit staff should continue with positive crowd contact.

17.5.4.4 Weather factors

The weather is a strong influence factor on outdoor events. The promoter should therefore get good information on upcoming weather. This can be achieved for example via SMHI.

The following can be good to keep in mind:

• **Rain, hail, or snow** – that is, precipitation – make the surface wet and can entail increased risk of slipping in high crowd density. Umbrellas block the view of the crowd in the back and have sharp points. Precipitation, moreover, increases the risk for large portions of the crowd to suddenly decide to seek shelter. Cold can make the unaccustomed visitor put on too many clothes, and become too warm instead.

• **Heat and strong sun** often have an exhausting effect on the crowd. The risk of dehydration, overexertion, or fainting increases. Prepare for the concert with increased access to water and available first aid or medical staff.

• **Extreme weather.** SMHI issues warnings when there is risk for more extreme weather:
  – Class 1: Weather developments that entail a risk to the public and disruptions for some societal functions are expected. Weather that entails danger, damage, or disruption of certain activities, but no unusual weather phenomena – for example, more than 35 mm rain in 12 hours over large areas or winds of more than 21 m/s.
  – Class 2: Weather developments that could entail danger to the public, severe material damage, and severe disruptions to vital societal functions. The public is advised to follow up on new information via the Internet, the radio, or TV – for example, more than 70 mm rain in 24 hours over large areas or winds of more than 25 m/s.
  – Class 3: Weather developments that could entail danger to the public, severe material damage, and severe disruptions of important to vital societal. The public is advised to follow up on new information via the Internet, the radio, or TV – for example, winds of more than 30 m/s.

Keep in mind that even weather that does not lead to warnings from SMHI can entail restrictions for the event. It is a good idea to discuss with the municipality and other authorities involved what should be done in the event of extreme weather well before the event. What effects can extreme weather have? How can these be counteracted or managed? What resources do the event, the municipality, and other stakeholders have? How should information for the crowd, the media, and the public be handled?
17.5.5 Pause routine - pausing a performance

During a performance, the room to act is limited. The pit staff can only help or serve the crowd closest to the crowd barrier. The safety staff are also few in relation to the crowd load, which means that when there is the risk of an accident, it is practically impossible to manage the situation without particular measures – pausing the concert, for example.

Pausing a performance should be done very subtly to avoid undesirable consequences. There should therefore always be a plan for how to pause as smoothly as possible – a pause routine. A pause routine should always be practised with everyone involved.

17.5.5.1 The purpose of a pause routine

The purpose of a pause routine is simply, and in a controlled manner, to create a smooth but obvious pause in a performance so that the promoter can act on the incident causing it. A pause routine is an incident-specific plan. Read more about incident-specific plans in Section 1.4.8. The pause routine should be a single plan; that is, the same plan is activated regardless of the nature of the incident.

Pausing a concert quickly, smoothly, and without undesirable effects is more difficult than it sounds. Therefore, all key people in the routine need to know their tasks and know how, and when, they are to carry them out. It is not enough for the stage safety manager to know what should happen in a pause. The stage manager, lighting and sound technicians, any area manager, the band’s tour manager, and the staff – as well as anyone else involved in the routine – need to understand their roles. It is therefore strongly recommended that event staff go through the routine very carefully in advance and practise it.

17.5.5.2 Deciding on a pause

The stage safety manager and stage manager should individually have the authority to decide whether to pause a concert. Deciding on a pause in a concert can be a challenge in itself, since the decision affects many people. Time is often also a factor; a decision made too late can have very serious consequences. This is yet another reason for the stage safety manager and stage manager to be experienced staff with good instincts and the competence to make decisions.

A pause routine should be escalated, both to avoid activating it for the wrong reasons and so that everyone involved can be prepared so that every element can be carried out with no friction. A first step prior to a pause could, for example, be that all the decision-makers (e.g. the stage safety manager and stage manager) meet and discuss the situation, and how to proceed smoothly. Often the situation can be resolved through such dialogue. Read more about how a plan can be escalated in Section 1.4.8.3.

17.5.5.3 Creating a pause routine

The following can be a good way to create a pause routine for the event:

- Decide who has the authority to pause a concert
- Identify exactly what needs to be done - and how - to pause a concert (see below)
- Decide who will carry out each task
- Distribute operational instructions and other documents (e.g. scripts for speeches)
- Practice the pause routine with everyone involved
During a pause, four steps should occur at a rapid pace, one after another, with no waiting time. It is therefore very important that everyone involved knows the routine and understands their tasks.

- **The artist stops playing or the stage sound is turned off.** As the promoter, it is not self-evident that the responsibility for a pause should be given to the artist. If the artist does not stop playing, the promoter should be prepared to cut the sound, in which case the artist should be notified before the pause and, if possible, made an accessory.

- **A fixed light is turned on over the stage and the crowd.** Blinking lights in combination with loud music can easily make a disorderly situation completely chaotic. A fixed, steady light can calm the situation down.

- **The crowd is informed of the situation.** If the crowd is not informed, they will draw their own conclusions, thereby reacting with anger or disappointment. The best effect is often achieved if it is possible to use the artist to communicate with the crowd. But if, as the promoter, you are unsure whether the artist is adapted to communicating with the crowd in a serious situation, you should be prepared with your own announcer.

- **The problem is fixed.** The reason for the pause is fixed.

An announcer should always have a scripted speech as support with crowd information.

Crowd information in a pause can, for example, contain the following information:

- What’s happened?
- What is the crowd expected to do?
- What will the promoter or artist do?
- What happens after that?
- How long will it take before the concert starts again?

### 17.5.6 Safety after the concert

It is important to finish the work properly. The concert is not over for the pit staff until the stage safety manager says so. Before the work is completed the stage safety manager should:

- Make sure all of the crowd has left the venue.
- Conduct a short review with the staff: What worked, and what didn’t? How should the work be changed for the any subsequent possible concerts?
- Document the concert through an incident report. It can be an advantage to do this even if nothing serious occurred – the more basis for analysis, the better the decisions in the future.
CHAPTER 18
EMERGENCY PREPAREDNESS
FOR SERIOUS INCIDENTS
This chapter deals with how the event should respond during a serious incident and how to plan for situations that you hope never happen. Preparedness means being prepared in advance for a serious incident, knowing what do and who is to do it, and being prepared to act quickly in the period immediately after the incident.

18.1 The emergency planning process
Ensuring a high level of emergency preparedness is a process that starts long before the event and continues on through the post-event measures. The chart below attempts to outline the overall process.

The risk analysis is the hub of this process. For this to be relevant, some basis for evaluation is required. On the basis of the risk analysis an action plan for risk reduction measures is produced. Read more about risk management in section 1.5.

The results of the analysis are also taken into account in the event safety plan: in the emergency preparedness plan, the crowd management plan and other general plans. Read more about the safety plan in section 1.4.

The overall plans are used to create incident-specific plans designed to prevent, manage or eliminate undesirable incidents if and when they occur. Read section 1.4.8 for more about incident-specific plans and routines.

The emergency preparedness process should be a living process; when reality changes, the evaluation basis needs to change, and thus also event preparedness and safety planning.

18.2 Planning for an emergency
One common reason for improper actions during an emergency situation is that nobody thought it would happen; the situation was perceived as so improbable that nobody had even considered what should be done if it did happen. Also, the low probability can in itself result in people underestimating the seriousness of...
the situation. The mental readjustment from “normal mode” to a situation in which people are seriously injured and maybe even killed is so big that in many cases one tries to rationalise away the seriousness of the situation. However, experience of events and increased awareness of potential emergency situations can help the staff to see more clearly and handle these kinds of situations.

If an emergency situation occurs during an event, and there have been no preparations for serious incidents, the chances of being able to handle the situation in the best way and mitigate its effects will be small. The chances of successfully managing an emergency situation depend entirely on the key individuals, their knowledge, mental preparation, and ability to stay calm under extreme pressure. It is therefore very important to plan for what it is to be done if a serious incident occurs, and that there is emergency preparedness to manage this kind of situation.

18.2.1 Co-operation with public authorities including the medical services

Close collaboration with the emergency services ambulance is essential. Meet these parties as early on as possible to discuss how safety measures should be carried out and find out how the emergency services want the collaboration to work. Open a dialogue on the possibility of having the authorities on site at the event. If the nearest hospital, fire or police stations are located far away from the event, the emergency services should have emergency preparedness plans at the event venue.

During serious incidents the event’s emergency preparedness organisation must make sure that as much as possible has already been done by the time the emergency services arrive and the emergency response starts. The emergency services can therefore contribute a number of constructive viewpoints on how to preparedness should be designed, so that the conditions are as good as possible when they arrive at the scene of an emergency.

When planning an event it should be established that in the event of a serious incident or emergency, the emergency services and the event promoter will set up a command post from which resources will be coordinated and from where the incident can be assessed and consensus reached about the way forward. Read more about the emergency services and their roles in chapter 2.

18.2.2 Emergency organisation

The event should create an organisation that continues to function in an emergency. The purpose of this is that the event’s organisation can be connected to the police, ambulance services and emergency services in an emergency. They should know who to communicate with, and staff with the same decision-making authority will be able to work side by side, according to the model below. Note that the agencies mentioned have their own terms for these levels. For example, the police authority calls its levels: strategic management, overall operational management and minute operational management. The Emergency services and ambulance service use other terms.

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<thead>
<tr>
<th>Management site</th>
<th>EVENT</th>
<th>POLICE</th>
<th>EMERGENCY SERVICES</th>
<th>FIRST AID</th>
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<tr>
<td>Strategic</td>
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<td>Tactical</td>
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<td>Operational</td>
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Based on such an emergency organisation, it will be established in advance which positions will be joining the emergency services’ command post, who will direct the tactical work at the event and who will help the emergency services operationally at the site of the accident. In practice it is the safety coordinator who will join the command post, the head of safety who will manage the tactics of the safety organisation and the group manager who will operatively manage the workforce, e.g. at the site of the accident. It could be a good idea to practice plans and operations along with the event management and the emergency services concerned in scenario exercises or management table top role-play exercises. Read more about staff and organisation in chapter 3.

18.3 Emergency preparedness plan
A emergency preparedness plan describes the event’s preparedness for various incidents. The emergency preparedness plan contains staff and material resources and planning for accidents, emergencies and other serious incidents.

The risk analysis is the basis for the emergency preparedness plan. It identifies and assesses various risks based on the probability of their occurrence and the consequences if they do occur. Based on the analysis, several risks are then identified that for which the event must maintain preparedness, for example a person breaking a bone and more serious emergencies like fires and deaths. Read more about risk management in section 1.5.

The emergency preparedness plan describes the event’s preparedness for accidents, serious incidents and emergencies. It should include the following areas and answer the following questions:

- **Fire preparedness.** How does the event plan to respond if there is a fire? What routines are there? Are staff trained to use fire extinguishers and fire blankets? Where is the firefighting equipment? Will the fire & rescue service be on site during the event? Read more about fire preparedness in section 2.3.3.

- **Medical preparedness.** What medical preparedness is there and what situations can be managed? What competence do the on-site medical staff have (e.g. first aid training or registered ambulance staff)? Read more about medical care in Sections 2.3.2 and 3.7.

- **Emergency organisation.** How will the event’s organisation function in case of a serious emergency? Here is outlined the planned for how to organise collaboration with the police, the fire & rescue service and the ambulance service.

- **Emergency plan.** What immediate action must the event organisation take in case of a serious emergency, before they hand over the situation to the police, the fire & rescue service and the ambulance service? Read more about the emergency plan – response plan in section 18.3.1.

- **Emergency map.** Where are the emergency exits, access routes for emergency services vehicles, assembly points etc.? All of these should be marked on an emergency map.

- **Channels for emergency information.** How will the event manage information for its own organisation and for the crowd? What routines are there for contacting SOS Alarm in the event of an emergency?

- **Communication to the media during and after an emergency.** How will the resulting media attention after a serious incident be handled? Who will be the spokesperson for the event? Which questions will this person answer, and which questions is it best that the spokesperson for the emergency service provides answers to?
18.3.1 Emergency plan – emergency response plan

An emergency plan or an emergency response plan is an action plan for how the event should respond in case of a serious incident, for example, a fire, a major accident, or if the event area needs to be evacuated. An emergency plan must always be operative and fail-safe, because it is crucial that it does not fail. Read more about how to make a plan operational and fail-safe in section 1.4.8.

A serious incident is often far-reaching and involves the entire event organisation. A smoothly functioning emergency plan contributes to handling the emergency as well as possible, reduce the consequences of it and handover to the police, ambulance service and fire & rescue service as soon as they arrive.

Several different types of incidents at an event can be handled using the same emergency plan. If different plans for different incidents are created, confusion can easily arise about which plan to use, when to activate it and who is to do what. That is why it is a good idea to make a universal and general emergency plan for the important functions in an emergency.

18.3.1.1 Creating an emergency plan

When an emergency plan is created, bear in mind the following:

• Identify what kinds of incidents the emergency plan should cover.
• Decide who in the organisation has the authority to activate the emergency plan and under which circumstances it can be activated – for example, is a consultation decision necessary? Strive to create redundancy, where several decision makers are allowed to make the decision by themselves or in groups of at least two.
• Decide what needs to be done - and how it is to be done - when the plan is activated. See the example below
• Be clear who is to perform each task. For important tasks, strive for redundancy - i.e. several people with the same task.
• Test the plan in real life and practice it with the event organisation and the emergency services. Will it work in a real emergency situation?
• Design the emergency plan so that it is possible to stop the chain of events and return to “normal mode” if the plan has been activated improperly.
• Make the emergency plan operational. Read more about making a plan operational in Section 1.4.8.1.

The following should be included in an emergency plan:

• SOS Alarm is contacted.
• The safety organisation is informed.
• The event organisation is informed.
• The incident site is isolated or cordoned off.
• Access routes for emergency services vehicles are kept clear.
• Any evacuations have begun. Read more in Section 18.3.1.3.
• Emergency exits are opened.
• Event visitors are informed.
• A staff pool is created. Read more in Section 18.3.1.4.
• Contact with the media is maintained according to the plan. Read more in Section 18.4.2.

18.3.1.2 Emergency plan activation

It is important that the people who have the authority to activate the emergency plan are also bold enough to do so. Therefore, incorrect activation in
good faith should not have any negative consequences. The organisation should also be permeated by a blame-free atmosphere. It is also a good idea to work a contingency scale into the emergency plan. Read more about the contingency scale in Section 1.4.8.3.

The people who are tasked with activating the emergency plan will do this by stating

- The code word for emergency plan activation
- The location of the incident and a short description of the incident
- Who the person activating the emergency plan is and where they are.

With a correctly designed, communicated and practiced emergency plan, everyone knows what they should be doing.

18.3.1.3 Evacuation
Any decisions to evacuate should be taken by the police or in consultation with several decision makers. An evacuation could have negative consequences, and therefore the risks of an evacuation must be reviewed beforehand. There must be evacuation routes with enough capacity and staff that can help out at the exits. The place that the crowd is evacuated to should be bigger than the place they are evacuated from. It is also important that there are personnel in the place where the crowd is moved to, and that those personnel can help people to stay calm.

Evacuating the event venue always has consequences. Bear in mind that not all incidents necessitate immediate evacuation. Sometimes it is possible to handle
a serious incident by first cordoning off the incident site and then having the crowd gradually leave the event. Evacuation of the event venue can be a separate part of the emergency plan.

18.3.1.4. Staff pool
As part of the emergency plan, a “staff pool” can be created from all the staff that do not have key functions in the plan but are available or who can leave their posts.

Assembling the event’s staff resources means that they are quickly and easily accessible as a work force, and that you avoid risking stressed or shocked staff entering the incident site to work on their own authority. The staff pool should assemble in a predetermined location and its work should be led by a key person.

Staff safety always has the highest priority. Staff at the incident site must never subject themselves to danger.

All work at an incident site should be coordinated and controlled by the event management until the emergency services arrive and take over command of the emergency response. Before the emergency services arrive the staff can work on the following:

- Rescue people in immediate danger.
- Cordon off the incident site.
- Handle the incident, e.g. start extinguishing work or extinguish small fires.

When the police incident officer, fire service incident commander or medical incident officer have arrived, they can also use the event staff as a resource.

18.3.2 Emergency map
The purpose of an emergency map is for everyone involved in an emergency situation to use the same names – for example, for access routes, evacuation routes and assembly points. An emergency map should therefore be created in consultation with the emergency services and distributed to everyone who may find it useful. Make sure that SOS Alarm receives the emergency map. It is not always easy to explain where at an event an incident has happened. If both parties have an emergency map to consult, this makes things much easier.

The emergency map doesn’t have to be detailed, but the following should be included:

- A rough representation of the area’s layout
- Access routes for emergency services vehicles
- Audience passages, doors and gates
- Emergency exits and evacuation routes
- Location of medical stations
- Assembly points for the injured or workforce
- Assembly points (internal meeting points)
- Command posts
- Forward Control Points - so they are not blocked or used by mistake. (A Forward Control Point is used as an assembly point by, for example, the emergency services)

Give the map a grid and its own coordinates; this will make it easier to communicate positions.
18.4 During an emergency

If the event ends up as an emergency without there being preparation for one, there will be limited scope to take action. There may be a risk that key people become stressed and find it very difficult to think logically in such a chaotic situation.

If there is a emergency preparedness plan the conditions look much better. If the event also has a developed and practised emergency plan the key people primarily need to make sure they are decisive and calm, and then follow the plan.

18.4.2 Emergency communication

A stressed person can easily misinterpret information. Likewise, stressed people can find it hard to convey information to others. In order to avoid incorrect information and signals being spread and information being misinterpreted, all communication during an emergency should follow certain rules - no matter whether it is internal information or information to the crowd.

- **Information must be clear and concise.** Emergency information must always be straightforward and clear. Combine Swedish information with an English version if necessary due to the composition of the crowd. Avoid unclear formulations or words that may contribute to the information being misinterpreted.

- **Repeat the information.** Information is repeated and transmitted through several channels. Information about activation of the emergency plan, information to the organisation and the crowd should be repeated several times.

- **Use suggestions.** People during an emergency need structure. Information in the form of exhortations/suggestions, e.g. “Move towards the exit to the left of the stage!” has more of an effect then simply asking the crowd to evacuate the area. Stressed crowd safety staff also need to be able to take directions. For example, saying “Open emergency exit A” will probably achieve better results than a general request to “open the emergency exits”.

18.4.2.1 Information for SOS Alarm

In an emergency the event staff do not have to inform all the emergency services themselves. Instead, SOS Alarm should be contacted, who will then relay the necessary information to the relevant emergency and other services. It is important that the person who contacts SOS Alarm remains calm and objective.

The following information should be supplied:

- What has happened
- The extent of the situation
- The location of the incident
- Other important information for the emergency services e.g. if access routes are blocked
- Own name and function at the event.

18.4.2.2 Crowd information

During an emergency the crowd must be informed, according to the same rules as all emergency information, i.e. that the information is clear, sufficient and in the form of suggestions. Crowd information can be conveyed in several ways, and the more channels and media used, the better the chance that the crowd will understand the information correctly. For example, it is a good idea if an announcer can inform the crowd from the stage about what has happened and how the crowd should act. Make sure that there is a prepared script for this kind of situation.
Large video screens are useful for informing large crowds. Read more about enabling information in section 14.4.3.3.

18.4.2.3 Internal information
During an emergency, the safety organisation and the event office must be informed, also according to the same rules as for all emergency information. The first internal information to be conveyed should be that the emergency plan is to be activated. Read more about internal communication in Section 3.5.

18.4.2.4 Information for the mass media
When a serious incident occurs, the mass media’s interest in the event will increase. Non-accredited media staff may turn up, while the accredited staff on site will take on the role of incident reporters.

In an emergency there are no requirements that the head of safety or event manager must make a statement. Wait until the situation has calmed down somewhat and then answer the media’s questions or refer them to a future press conference.

When you communicate with the mass media during an emergency, it is important to be quick and correct. This is more important than providing complete information. It is better to convey what little information you have and ask to get back to them with details, instead of saying nothing at all. Complete silence or lack of information creates space for rumours. It will also weaken trust in the organisation’s ability to handle the situation. Always keep to the truth; even white lies to downplay the seriousness of the situation will probably lead to problems later on.

The event staff must never speculate about the incident to the mass media, nor should they comment on the cause of the incident. Instead they should refer questions to the spokesperson from the relevant authority or the event’s press officer.

When the emergency organisation is in place, more extensive statements to the media should be made through it. It can still be the event’s spokesperson that handles contact, but the information should come from the emergency staff. Alternatively, the responsibility for contact with the mass media can be transferred to the emergency staff’s information or media officer, usually someone from the emergency services.

18.4.3 Handover to the authorities
When the police incident officer, the fire service incident commander or medical incident officer arrive on scene, they must be allowed to exercise their command duties at the response operation. The emergency services cooperate based on the nature of the incident and what kind of operations are required. Cooperation with the promoter should also take place here; in many cases the emergency services may find the promoter’s specialist knowledge of the event useful. However, the promoter should always follow orders from the emergency services.

It is important that discussions between the emergency services and promoter take place during the planning stage, to clarify contact channels, with which resources the promoter can help assist the response operation, and how these resources will be handed over and managed. On site, however, it is the orders of the emergency services that take precedence.

18.4.3.1 Police work on site
The police start their work on site by cordonning off the area around the incident site. It is the task of the police to evacuate and guard the incident site. The police will also set up an assembly point for people who are not injured, register the injured and take care of and identify any dead.
The event’s security guards are subordinate to the police as long as there is a police officer on site. The role of the security guards during a major incident or emergency can be to assist the police in their work. The police incident officer can be recognised by a blue and white checked vest. Read more about police work in Section 2.3.1.

18.4.3.2 Fire & rescue service work on site
The work of the fire & rescue service is to limit any harmful effects as a consequence of incidents. If there are any injuries, first aid can be performed. The fire & rescue service set up a command post from which the emergency services can organise their resources. As far as possible and suitable the event staff can assist the fire & rescue service incident commander.

The fire & rescue service also plays a key role in the dissemination of information to the public and the media. The fire & rescue service incident commander can be recognised by a red and white checked vest. Read more about the work of the fire & rescue service in Section 2.3.3.

18.4.3.3 Ambulance service work on site
Ambulance personnel assess the need for care and sort the injured according to the severity of their injuries (called “triage”). Then they will start treating the injured at the incident site and at various assembly points to stabilise vital functions before transport to hospitals and health centres.

As far as possible and suitable, the event staff can assist the ambulance personnel.

The medical incident officer can be recognised by a green and white checked vest. Read more about ambulance service work in Sections 2.3.2 and 3.7.

18.5 After an emergency
The promoter’s work after an emergency is largely about taking care of his/her own staff that have been traumatised by the incident, and informing the public in the correct manner through the media about what has happened.

18.5.1 Looking after staff
The local fire & rescue services the social services and the medical services have trained staff who can take care of people who need psychological support after an emergency. Municipalities may also have what is known as a POSOM group (Psychosocial care) who can intervene and support staff and other people affected, relatives etc. The social services, fire service, medical services, schools, church, the Red Cross and others may be involved.

18.5.2 Information to the mass media during and after a serious incident
A press conference should be called when you can provide information about the extent of the incident. The press conference will probably be handled by the police or fire service according to what was agreed upon in advance. It can be a good idea to hold the press conference in another location, e.g. the local police station, if the event is in the same town. Planning for this, apart from the actual timing, can be included in the preparation work.

If the event spokesperson is unsure of what to say in any statements, it can be a good idea to collaborate with the information officers of the participating emergency services. Read more about mass media work at the event in Chapter 16; read more about emergency organisation in Section 18.2.2.
Appendix A:  
Risk and vulnerability analysis for the dimensioning of medical care

Recommended medical care resources. This table is based on the model in the British Event Safety Guide.

Add up the sums from tables 1, 2, and 3 and enter the total in Table 4.

<table>
<thead>
<tr>
<th>TABLE 1: EVENT TYPE</th>
<th>TABLE 2: HISTORY</th>
<th>TABLE 3: RISK FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Event type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classical music</td>
<td>2</td>
<td>Expected queuing time</td>
</tr>
<tr>
<td>Pop/rock concert</td>
<td>5</td>
<td>Less than four hours</td>
</tr>
<tr>
<td>Dance</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Music festival</td>
<td>3</td>
<td>More than four hours</td>
</tr>
<tr>
<td>Bonfire/fire and fireworks</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>B. Location</td>
<td></td>
<td>More than twelve hours</td>
</tr>
<tr>
<td>Indoors</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Stadium/Arena</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Outdoors, in an enclosed area</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Outdoors, other</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Street event</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Temporary structure, outdoors</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Includes campsite for overnight accommodation</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>C. Standing room/seating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seating</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mixed</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Standing room</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>D. Audience profile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed audience, family groups</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mixed audience, no family groups</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Predominantly young adults</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Predominantly children and teens</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Predominantly older</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Mixed audience with rival groups</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>E. Background information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehensive documentation exists, low frequency of injury (less than 1%)</td>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>Comprehensive documentation exists, medium frequency of injury (1-2%)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Comprehensive documentation exists, high frequency of injury (more than 2%)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>First time the event is held, no documentation available</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>F. Expected number of visitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1000</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Less than 3000</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Less than 5000</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Less than 10 000</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Less than 20 000</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Less than 30 000</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Less than 40 000</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Less than 60 000</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Less than 80 000</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Less than 100 000</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Less than 200 000</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Less than 300 000</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>H. Season</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Autumn</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>I. Distance to nearest accident &amp; emergency department</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30 minutes by car</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>More than 30 minutes by car</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>J. Type of reception unit(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Several A &amp; E departments available</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Large A &amp; E department</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Small A &amp; E department</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>K. Medical care resources on site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity to stitch injuries</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>X-ray</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>Light surgery</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>Setting fractures in plaster</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>Opportunity for psychiatric care/Primary care</td>
<td>-2</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 1: EVENT TYPE  
---
TABLE 2: HISTORY  
---
TABLE 3: RISK FACTORS  
---
Table 4 Recommended medical care preparedness

The recommended minimum number of first aid workers at smaller events, where there are no specific risks is 2 per 1000 for the first 3000 visitors. No event should have less than 2 first aid workers. The number of personnel shown in the table is the number that should be available at any given point in time. If the event takes place over a longer period of time, relief should be included.

<table>
<thead>
<tr>
<th>SUM</th>
<th>AMBULANCES*</th>
<th>FIRST AID WORKERS**</th>
<th>DOCTORS</th>
<th>NURSES</th>
<th>MEDICAL CARE MANAGEMENT ON SITE***</th>
<th>BACK-UP EQUIPMENT****</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-25</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-30</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-35</td>
<td>2</td>
<td>12</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36-40</td>
<td>2</td>
<td>20</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>2-3</td>
<td>40</td>
<td>3</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-60</td>
<td>2-3</td>
<td>60</td>
<td>4</td>
<td>8</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>61-65</td>
<td>2-3</td>
<td>80</td>
<td>4</td>
<td>10</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>&gt;65</td>
<td>2-3</td>
<td>80+</td>
<td>4+</td>
<td>12+</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Ambulances: Including a crew of 2 in accordance with the regulations issued by the Swedish Board of Health and Welfare. The number of ambulances stated indicates the extra resources needed to strengthen the ordinary organisation. The ambulances do not need to be deployed on site, but it should be possible to get them to the event in less than 10 minutes (Priority 1). If they are deployed on site, it should be clearly agreed on beforehand whether or not they can be used for other purposes by SOS Alarm. If they are also intended for other tasks (not related to the event), SOS Alarm should have instructions to replace the resource used as soon as possible with another ambulance. Note also that ambulances hired by the promoter are not always fully-manned or equipped emergency ambulances (i.e. may be single manned or with less equipment). Consequently, these may not be used for other emergency tasks.

** First aid worker: Personnel trained in giving first aid, and use of the first aid equipment. Normally, “first aid worker” means personnel contracted in from various organisations to provide primary care. Security guards and safety, however, have in certain cases also received training in first aid, and can thus also be counted in this group. Note, however, that the actual medical competence among them can vary from layman to registered medical staff (doctors, nurses). The qualifications of the personnel included should be made clear in advance, and should detail their emergency medicine competence.

*** Medical care management established on site.

**** Back-up equipment in the form of blankets, stretchers, dressings, bandages etc.
Appendix B:
Checklist for LPG (Liquefied Petroleum Gas) handling

- Are there supervisors for each usage site who will ensure that the points below are followed?
- Has the supervisor’s name, address, and telephone number been registered in writing with the fire & rescue service?
- Will LPG be transported to and from the usage sites before and after opening hours?
- Will LPG bottles be transported with airtight stoppers and protective mantles?
- Is only the daily required amount of LPG present at the usage site? If there is more than that, did the fire & rescue service permit that?
- Are the LPG bottles stored steadily upright in a well-ventilated location and protected from unauthorized people?
- Are any containers used only for LPG?
- Are there manual or automatic alteration switches between LPG bottles so as to avoid changing bottles during ongoing operations?
- If the gas apparatus is portable, do the bottles stand in the same wagon as the apparatus?
- If LPG is drawn from the bottle without a relief valve, is there an automatic shut-off valve between the bottle and the hose?
- Is there a warning sign as prescribed, visible from the outside, on every tent or stand where LPG is used?
- Is the hose intended for LPG usage?
- Is the LPG hose at most 1.5 metres long? If it is longer, did the fire & rescue service permit that?
- Are the hose and piping protected against damage?
- Are the pipes marked as prescribed?
- Can the apparatus be shown to be airtight with a manometer, bubble indicator, or soapy water?
- Are the flames on the cooker under constant supervision? Is other usage apparatus fitted with flame failure devices?
- Is the distance between the LPG burner and the combustible material located above it, for example, cabinets, shelves, or tent canvas – at least 0.5 metres? Is the lateral distance at least 0.2 metres? If not, did the fire & rescue service permit that?
- Are there written operation and maintenance instructions for each piece of usage apparatus?
- Is the bottle valve always closed daily after work ends, or during longer breaks?
- Is the general set-up satisfactory?
- Are there Class II BE or ABE type (powder or carbon dioxide) fire extinguishers at each LPG usage site? Are they easily accessible and marked in accordance with the EU standard?
## Appendix C: Crowd profile

### CROWD PROFILE

<table>
<thead>
<tr>
<th>The crowd in general</th>
<th>EXAMPLE, COMPLETED CROWD PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crowd size</td>
<td>At sell-out 10,000</td>
</tr>
<tr>
<td>Typical group size</td>
<td>Groups of friends 4-10 people</td>
</tr>
<tr>
<td>Favourite artists</td>
<td>Artist X</td>
</tr>
</tbody>
</table>

### Conditions:

| Age distribution: | approx 80% between ages 15 and 18, 20% older |
| Gender distribution: | approx 60% girls, 40% boys |
| Occupation/work: | Schoolchildren |
| Strong/normal/slight: | Varied: weak to normal |

### Situation:

| Weather/season          | High summer: warm, sunshine |
| Waited overnight?       | Yes, although only approx. 500 people |
| Holidays/public holiday/weekday | Summer holidays have just started |
| Living at a campsite?   | No |

### Psycho-social

| Personality | Not much concert experience and concert awareness. (i.e. doesn’t understand the consequences of going too far forward in the crowd) |
| Values/attitude/lifestyle | The artist’s fans are really fanatical. Many “live for” the artist, and dress and make themselves up like the artist. Anti-racism is a clear message with the artist. |
| Earlier/expected behaviour | Moderate occurrence of crowd surfering. Some risk of the crowd trying to get backstage. At previous concerts, the crowd has thrown various articles of clothing onto the stage. |
| Degree of violence | Low. The artist’s message is “love and respect”. (see below, however). |
| Degree of “lawlessness” | Medium to high. The artist’s message is also “do what you want”. Some mistrust of authorities. |

### Drug use

| Drug use | Probably a lot of alcohol, probably little or no harder drugs. |
| Degree of drunkenness | Among those drinking: varies from medium to high. |

### Summary

| Crowd goal | To be seen and to show themselves. To show that they are “the biggest fan”. Many likely have a dream of being seen by the artist. |
| Expected “normal” behaviour | Easily hysterical mood right at the front, which increases if the artist addresses the crowd or goes down into the pit. Risk of crowd surfering to “get over” to the stage. The “new summer holiday” can, moreover provide a little “test your wings” effect. |
| Possible reactions to expected incidents | If the artist goes down into the stage pit, high pressure. |
| Risk of injuries | Yes. Risk for high pressure combined with a crowd that is vaguelyaware or unaware of consequences increases the risk of injuries at the crowd barrier. |
| Risk of material damage | Medium. Some risk of childish pranks or damage both inside the arena and outside. |
| General risks | Overheating due to weather, alcohol consumption, and because the crowd doesn’t think about drinking water. Alcohol poisoning. |
| Particular needs/measures | Preliminary announcements should emphasize the need to drink water, not to push forward, and to help friends. The crowd barrier should be built in such a way that pressure does not propagate from the rear. Increased number of pit staff. Increased awareness among pit staff of the above risks. Increased number of water stations, both at the front of the crowd by the stage and in the surrounding area. Increased awareness and preparedness among patrolling safety staff and first aid staff of the risk for dehydration and drunkeness. |
## Appendix D: Artist profile

<table>
<thead>
<tr>
<th><strong>ARTIST PROFILE</strong></th>
<th><strong>EXAMPLE, COMPLETED ARTIST PROFILE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Artist’s background</strong></td>
<td></td>
</tr>
<tr>
<td>Unexpected incidents during previous performances</td>
<td>Has on occasion gone down unannounced into the stage pit. But not out into the crowd. Often exceeds the indicated number of encores.</td>
</tr>
<tr>
<td>Tendency to be late</td>
<td>Low</td>
</tr>
<tr>
<td>Appeals to the crowd</td>
<td>Yes, but none of safety-related interest. (“Sing along”, “Louder”, etc.)</td>
</tr>
<tr>
<td>Prior incidents</td>
<td>One person sent to hospital in connection with a previous performance. The cause was, however, not related to a performance (allergic shock)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Contents of the performance</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Artistic message</td>
<td>Artist’s message is: love, respect, equality</td>
</tr>
<tr>
<td>Political message</td>
<td>Critical of society, socialist message.</td>
</tr>
<tr>
<td>Radicalism</td>
<td>Medium-high degree of radicalism. Although only within the artistic message. The artist clearly distances him/herself from violent acts.</td>
</tr>
<tr>
<td>Degree of “lawlessness”</td>
<td>Low, despite the message.</td>
</tr>
<tr>
<td>Violence</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Incidents during the performance</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Out into the crowd</td>
<td>Some risk of the artist intending to go down into the pit – should be discussed with the artist on arrival.</td>
</tr>
<tr>
<td>Crowd on stage</td>
<td>Some risk, but during prior performances took place in an organised form, in consultation with the promoter and without negative consequences.</td>
</tr>
<tr>
<td>Special effects</td>
<td>Confetti cannons on stage left and stage right. 2*10 minute guest performance by performance artists who juggle fire clubs and spout fire.</td>
</tr>
<tr>
<td>Pyrotechnics</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Artist’s view of safety measures</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of willingness to collaborate</td>
<td>High. Very concerned about the well-being of both the crowd and staff</td>
</tr>
<tr>
<td>Possible degree of influence</td>
<td>High. According to previous promoters, the artist has been sensitive to the restrictions of the event and proposals for changes.</td>
</tr>
<tr>
<td>Own security personnel</td>
<td>Yes. The artist has his/her own personal security for transport to and from the event as well as while backstage.</td>
</tr>
<tr>
<td><strong>Access</strong></td>
<td>To be allowed entry.</td>
</tr>
<tr>
<td><strong>Access control</strong></td>
<td>Verification of access.</td>
</tr>
<tr>
<td><strong>Access limitation</strong></td>
<td>To impose limited access to closed-off areas.</td>
</tr>
<tr>
<td><strong>Access route</strong></td>
<td>Often short for “emergency vehicle access route” – a route dedicated to emergency services and emergency vehicles. Sometimes called “rescue routes” or “response routes”.</td>
</tr>
<tr>
<td><strong>Accreditation</strong></td>
<td>Issuance of a power of attorney or warrant to perform a certain task (e.g. take photographs at an event)</td>
</tr>
<tr>
<td><strong>Accredited inspection body</strong></td>
<td>A business or other entity that is approved to perform some form of inspection.</td>
</tr>
<tr>
<td><strong>Actual crowd area</strong></td>
<td>The area the crowd will actually use – that is, the net area minus dead angles and unattractive areas. Cf. net area and gross area.</td>
</tr>
<tr>
<td><strong>After-dark inspection</strong></td>
<td>A nightly inspection in and around the event venue for the purpose of identifying areas that may be in need of better lighting or guarding.</td>
</tr>
<tr>
<td><strong>Agitate, agitation</strong></td>
<td>Incitement, agitation of a crowd.</td>
</tr>
<tr>
<td><strong>Alarm function</strong></td>
<td>Either a person or a system tasked with raising the alarm according to predetermined criteria.</td>
</tr>
<tr>
<td><strong>Alcohol sales licence</strong></td>
<td>Permit to sell alcohol.</td>
</tr>
<tr>
<td><strong>Announcer</strong></td>
<td>A person who informs the crowd from the stage.</td>
</tr>
<tr>
<td><strong>Area analysis</strong></td>
<td>Analysis of a location with regards to, for example, its suitability, potential risks, and its advantages.</td>
</tr>
<tr>
<td><strong>Area manager</strong></td>
<td>Title for the role that takes care of the artist before and after the performance, and of service around the stage area such as catering, accommodations, and logistics.</td>
</tr>
<tr>
<td><strong>Artist contract</strong></td>
<td>In contract law, the same as a contract.</td>
</tr>
<tr>
<td><strong>Artist profile</strong></td>
<td>Description of artists and how they are expected to affect the event and the crowd.</td>
</tr>
<tr>
<td><strong>Audience control</strong></td>
<td>See crowd control.</td>
</tr>
<tr>
<td><strong>Audience management</strong></td>
<td>See Crowd management.</td>
</tr>
<tr>
<td><strong>Audience surfing</strong></td>
<td>See crowd surfing.</td>
</tr>
<tr>
<td><strong>Axle weight</strong></td>
<td>Contact load (normal load) between the wheels of a vehicle on the same axle (or the same longitudinal position) and the road surface.</td>
</tr>
<tr>
<td><strong>Backstage</strong></td>
<td>Area with limited access, for example behind the stage. See also Proof of access.</td>
</tr>
<tr>
<td><strong>Barrier fence</strong></td>
<td>A medium-height portable metal fence, often with pales. Also called “bike racks.”</td>
</tr>
<tr>
<td><strong>Blind area</strong></td>
<td>An area nearby a focal point where the focal point itself cannot be seen (see also line of sight).</td>
</tr>
<tr>
<td><strong>Bottleneck</strong></td>
<td>A narrow section or place in a passage for visitor use. In its broader meaning, can also be defined as a place or incident that reduces the rate of flow; for example ticket sales, inspection, corners, poor surfaces, focal routes that cross each other.</td>
</tr>
<tr>
<td><strong>Broad organisation</strong></td>
<td>An organisation with few managerial levels and where each manager has several subordinates.</td>
</tr>
<tr>
<td><strong>Crowd area</strong></td>
<td>Area for the crowd in front of a stage. The area where visitors have access.</td>
</tr>
<tr>
<td><strong>Crowd area capacity</strong></td>
<td>The number of people that there is room for or are allowed in the crowd area in front of a stage or other focal point.</td>
</tr>
<tr>
<td><strong>Crowd barrier arrangement</strong></td>
<td>How a crowd barrier is designed and set up in front of a stage.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>General lighting</td>
<td>The location’s normal lighting (medium strength measured on the horizontal plane 85 cm above the floor); that is, excluding lighting effects or emergency lighting.</td>
</tr>
<tr>
<td>Geographic risks</td>
<td>More or less fixed sources of risk in the terrain around the event venue, for example lakes, ditches, railroads, high-voltage wires, etc.</td>
</tr>
<tr>
<td>Gross area</td>
<td>The total surface of an area. Cf. net area and actual crowd area.</td>
</tr>
<tr>
<td>Guard post</td>
<td>The place where a person stands guard.</td>
</tr>
<tr>
<td>Heated smoke</td>
<td>Smoke effect with warm smoke (the smoke rises).</td>
</tr>
<tr>
<td>Implementation plan</td>
<td>Time and activity schedule for implementing the construction, operation, and dismantling of the event.</td>
</tr>
<tr>
<td>Impulse noise</td>
<td>A short, loud sound. Non-periodic variations in air pressure, the duration of which is shorter than 1 sec and where the different between the peak value and the RMS value of the sound pressure is greater than 10 dB.</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>A system for transportation of information, goods, people, water supply, etc. Examples of infrastructure are radio network, telephone network, road network, water system, etc.</td>
</tr>
<tr>
<td>Inspection certificate</td>
<td>Documentation that certifies that a structure has undergone continuous supervision.</td>
</tr>
<tr>
<td>Key person</td>
<td>A person who has a key task to perform. For example, a decision maker or person responsible for opening an emergency exit.</td>
</tr>
<tr>
<td>Liability insurance</td>
<td>Insurance that protects the insured individuals or legal entities when claims for damages are brought against them.</td>
</tr>
<tr>
<td>Licence Security guard</td>
<td>Trained guard commissioned by the police.</td>
</tr>
<tr>
<td>Logbook</td>
<td>Documentation showing that a structure has undergone continuous supervision.</td>
</tr>
<tr>
<td>Macro-organisation</td>
<td>A description of the organisation that includes everyone who has something to do with the event.</td>
</tr>
<tr>
<td>Main power switch</td>
<td>Circuit breaker for power supply mains for terminating or breaking the current.</td>
</tr>
<tr>
<td>Marketplace</td>
<td>An area with several vendors.</td>
</tr>
<tr>
<td>Media pit</td>
<td>An area by the stage, in front of the crowd barrier, for photojournalists.</td>
</tr>
<tr>
<td>Medical care preparedness</td>
<td>Preparedness for providing medical care to those in need of it.</td>
</tr>
<tr>
<td>Merchandise</td>
<td>Sale of an artist’s own products.</td>
</tr>
<tr>
<td>Mixing area</td>
<td>See Front of House.</td>
</tr>
<tr>
<td>Mobile toilet</td>
<td>A toilet that can be moved; for example, a dry toilet or toilet cubicle.</td>
</tr>
<tr>
<td>Moshing</td>
<td>‘Aggressive’ dancing in front of the stage.</td>
</tr>
<tr>
<td>Multi-unit cable</td>
<td>Name for the cable(s) that reach between the stage and the Front of House.</td>
</tr>
<tr>
<td>Net area</td>
<td>The space in an area that the crowd can use; that is, the gross area minus the space lost, for example due to buildings or vegetation. See also gross area and actual crowd area.</td>
</tr>
<tr>
<td>Noise</td>
<td>Undesirable sound - an unpleasant disturbing sound for people or the environment that strains or damages the organism physically or emotionally.</td>
</tr>
<tr>
<td>Obligation to monitor</td>
<td>To have responsibility for supervising something.</td>
</tr>
<tr>
<td>Observation tower</td>
<td>Elevated location or regular tower suitable as an observation site.</td>
</tr>
<tr>
<td>Outflow</td>
<td>The area where the crowd exits the event.</td>
</tr>
<tr>
<td>Panic bolt</td>
<td>A door locking system that can easily be opened in an emergency situation.</td>
</tr>
<tr>
<td>Peripheral activities</td>
<td>Activity in addition to the main activity of the event, such as fairgrounds, food sales, etc.</td>
</tr>
<tr>
<td>Pier, or finger</td>
<td>See podium.</td>
</tr>
<tr>
<td>Planning phase</td>
<td>A phase in safety planning where activities, events, and resources are organised and coordinated. The phase after the preplanning phase.</td>
</tr>
<tr>
<td>Podium</td>
<td>Extension of the stage out into the crowd. May also be called catwalk, riser, pier, finger.</td>
</tr>
<tr>
<td>Point load</td>
<td>Where a weight is concentrated on one small area and transferred to the foundation e.g. heavy equipment on one part of a stage, or lots of people in a small section of a spectator area.</td>
</tr>
<tr>
<td>Portaloo</td>
<td>Temporary dry toilet.</td>
</tr>
<tr>
<td>POSOM group</td>
<td>In English: Psycho-Social Care Group</td>
</tr>
<tr>
<td>Power cable</td>
<td>(rubber cable) “Standard” electric cable.</td>
</tr>
<tr>
<td>Precautionary principle</td>
<td>The precautionary principle states that if there is uncertainty if something is safe, it should be regarded as unsafe. No one should do, or let anyone else do, something that is regarded as unsafe.</td>
</tr>
<tr>
<td>Pre-hospital care</td>
<td>The care and treatment before the patient arrives at the hospital, for example at the scene of the accident or in the ambulance.</td>
</tr>
<tr>
<td>Preparedness</td>
<td>To be prepared for the unexpected and to be able to minimise the consequences of a possible accident.</td>
</tr>
<tr>
<td>Preplanning</td>
<td>The phase in safety planning during which the safety coordinator draws up a rough plan and identifies what must be done to realise the safety vision.</td>
</tr>
<tr>
<td>Pressure surge</td>
<td>Waves that can occur in high density crowds.</td>
</tr>
<tr>
<td>Production area</td>
<td>An area, often furthest back on the stage behind the backdrop, where the stage production staff works.</td>
</tr>
<tr>
<td>Proof of access</td>
<td>A form of valuable document that grants access to special areas – for example a bracelet, a ticket, or a stamp.</td>
</tr>
<tr>
<td>Protective edge</td>
<td>Edge or upturned outer edges, on a ramp for example, which reduce the risk of wheelchairs slipping off.</td>
</tr>
<tr>
<td>Protective search</td>
<td>Search of a person suspected of a crime. May only be conducted by police or licensed security guards.</td>
</tr>
<tr>
<td>Pyrotechnics</td>
<td>A special effect that contains a pyrotechnic charge.</td>
</tr>
<tr>
<td>Pyrotechnics, consumer</td>
<td>Pyrotechnics that ordinary people can buy and use. A permit, however, is still required for use in connection with an event.</td>
</tr>
<tr>
<td>Pyrotechnics, professional</td>
<td>Pyrotechnics that may only be used by professional pyrotechnicians.</td>
</tr>
<tr>
<td>Redundancy</td>
<td>“Surplus” or reserve capacity to manage situations that arise.</td>
</tr>
<tr>
<td>Reflective vest</td>
<td>A vest designed to increase visibility.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Residual Current Device (RCD)</strong></th>
<th>Designed to automatically disconnect electrical installations as soon as an accidental earthing occurs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rider</strong></td>
<td>The artist’s “wish list” or list of requirements prior to and during a performance.</td>
</tr>
<tr>
<td><strong>Rigging</strong></td>
<td>To hang up or locate technical equipment at the event location or in temporary structures.</td>
</tr>
<tr>
<td><strong>Risk analysis</strong></td>
<td>An analysis where risks are identified and proposals for intervention are presented.</td>
</tr>
<tr>
<td><strong>Risk and vulnerability analysis</strong></td>
<td>Analysis that forms the basis for a dimensioning of first aid preparedness, among other things.</td>
</tr>
<tr>
<td><strong>Safe distance</strong></td>
<td>The distance between a potential risk, for example pyrotechnics or special effects, and the object to be protected, for example a person or material.</td>
</tr>
<tr>
<td><strong>Safety coordinator</strong></td>
<td>Head of safety at the event. The title of coordinator refers to the coordinating function between authorities, the safety organisation, and other partners.</td>
</tr>
<tr>
<td><strong>Safety organisation</strong></td>
<td>The organisation working with safety.</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>Prevention, preparedness and measures to minimize unintentional injury or damage, e.g. accidents and emergencies.</td>
</tr>
<tr>
<td><strong>Safety planning</strong></td>
<td>Planning that aims at conducting a safe event.</td>
</tr>
<tr>
<td><strong>Safety staff</strong></td>
<td>Staff that works with safety.</td>
</tr>
<tr>
<td><strong>Safety strategy</strong></td>
<td>Strategy for how safety work is to be conducted.</td>
</tr>
<tr>
<td><strong>Sanitation area</strong></td>
<td>A vision or general goal for how safety work is to be conducted and experienced.</td>
</tr>
<tr>
<td><strong>Sanitation area</strong></td>
<td>Area designated for toilets, showers, and wash basins.</td>
</tr>
<tr>
<td><strong>Section</strong></td>
<td>Division of, for example, an electrical network.</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Prevention, preparedness and measures to minimize intentional injury and damage, e.g. crime, sabotage, terrorism.</td>
</tr>
<tr>
<td><strong>Security fence</strong></td>
<td>“Normal” fencing, approximately two metres high, used to enclose or close off an event area.</td>
</tr>
<tr>
<td><strong>Septic tank</strong></td>
<td>An enclosed container designated for collection of waste from a water toilet.</td>
</tr>
<tr>
<td><strong>Service level</strong></td>
<td>The level of service.</td>
</tr>
<tr>
<td><strong>Show-stop equipment</strong></td>
<td>The material needed to be able to go through with a pause during a performance.</td>
</tr>
<tr>
<td><strong>Show-stop routine</strong></td>
<td>Routine for pausing a performance.</td>
</tr>
<tr>
<td><strong>Sight dampeners</strong></td>
<td>Objects that prevent a clear view of the target.</td>
</tr>
<tr>
<td><strong>Signal colours</strong></td>
<td>Strong or clear colours with signal value. Red, for example, means “Stop” to many.</td>
</tr>
<tr>
<td><strong>Situation analysis</strong></td>
<td>An analysis of the total situation of the event: time, season, location, weather, artist, crowd, etc.</td>
</tr>
<tr>
<td><strong>Sorting centre</strong></td>
<td>A centre where waste from the event is sorted before shipped to a recycling centre.</td>
</tr>
<tr>
<td><strong>Special effect</strong></td>
<td>An effect created, using light, sound, or pyrotechnics for instance.</td>
</tr>
<tr>
<td><strong>Staff pool</strong></td>
<td>Extra resources consisting of staff that are available and who can leave their posts.</td>
</tr>
<tr>
<td><strong>Stage area</strong></td>
<td>The area around the stage. Includes, for example, the stage, the crowd area, Front of House backstage, etc..</td>
</tr>
<tr>
<td><strong>Stage barrier</strong></td>
<td>An especially robust type of fence used in front of stages.</td>
</tr>
<tr>
<td><strong>Stage diving</strong></td>
<td>When a person jumps out into the crowd from the stage.</td>
</tr>
<tr>
<td><strong>Stage manager</strong></td>
<td>The person responsible for everything that happens on stage.</td>
</tr>
<tr>
<td><strong>Stage pit</strong></td>
<td>The area between the stage and the stage barrier.</td>
</tr>
<tr>
<td><strong>Stage safety manager</strong></td>
<td>A person responsible for the safety work in a stage pit and around a stage.</td>
</tr>
<tr>
<td><strong>Standard illumination</strong></td>
<td>The normal lighting, for example at a venue that has not been modified for the event.</td>
</tr>
<tr>
<td><strong>State of mind scale</strong></td>
<td>Illustration of the focus of awareness for safety staff.</td>
</tr>
<tr>
<td><strong>Steward</strong></td>
<td>Person who, at an event, has the task of being close to (a part of) the crowd and helping with things like guiding them to the right places.</td>
</tr>
<tr>
<td><strong>Strategic leadership</strong></td>
<td>Long-term, extensive planning and implementation of safety measures.</td>
</tr>
<tr>
<td><strong>Stroboscope</strong></td>
<td>An instrument that emits pulses of light.</td>
</tr>
<tr>
<td><strong>Surge barriers</strong></td>
<td>A crowd barrier formation intended to damage wavelike movements in the crowd.</td>
</tr>
<tr>
<td><strong>Tactical leadership</strong></td>
<td>Practical planning for conducting the event, based on the strategic planning.</td>
</tr>
<tr>
<td><strong>Tall organisation</strong></td>
<td>An organisation with many managerial levels and where each manager has few subordinates.</td>
</tr>
<tr>
<td><strong>Temporary structures</strong></td>
<td>Temporary constructions and facilities set up especially for the event, such as tents, stages, and ramps.</td>
</tr>
<tr>
<td><strong>Tent book</strong></td>
<td>A log book that contains things like surveys and changes made to the tent.</td>
</tr>
<tr>
<td><strong>Tinnitus</strong></td>
<td>Ear noise, a sound experienced only by the person himself that can be whistling, ringing, or humming.</td>
</tr>
<tr>
<td><strong>Toilet stall</strong></td>
<td>Temporary water toilet.</td>
</tr>
<tr>
<td><strong>Topographic risks</strong></td>
<td>Severe differences in surface level, for example steep drops or holes, in an area where they present a hazard.</td>
</tr>
<tr>
<td><strong>Transparent collaboration</strong></td>
<td>Collaboration where good communication predominates and none of the parties withhold information.</td>
</tr>
<tr>
<td><strong>Treble frequency</strong></td>
<td>Sound with higher pitches in the upper part of the frequency range.</td>
</tr>
<tr>
<td><strong>Turning zone</strong></td>
<td>An area where it is possible to turn a vehicle or wheelchair.</td>
</tr>
<tr>
<td><strong>Underground cable</strong></td>
<td>Cable specially adapted for burial.</td>
</tr>
<tr>
<td><strong>VIP entrance</strong></td>
<td>Entrance for specially invited guests.</td>
</tr>
<tr>
<td><strong>Waterlogged area</strong></td>
<td>Ground area containing too much water.</td>
</tr>
<tr>
<td><strong>Weight specification</strong></td>
<td>A specification of how much weight can be suspended from the roof or placed on the floor in an event locale, for example.</td>
</tr>
<tr>
<td><strong>Zone</strong></td>
<td>A partial area in the event venue that possesses similar characteristics, as regards for example safety level and crowd capacity.</td>
</tr>
<tr>
<td><strong>Zone division</strong></td>
<td>Separation of all or parts of the event venue into zones (See Zone).</td>
</tr>
</tbody>
</table>
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Räddningsverket 2003
The Event Safety Guide is the result of a government commission that the MSB and the Swedish National Police Board were tasked with in 2004.

The commission included the publication of an event safety guide in Swedish adapted from the British Event Safety Guide published by the UK Health & Safety Executive.

The Event Safety Guide is aimed at arrangers, government authorities and other stakeholders in the field of music related events. The guide provides advice, recommendations and guidance on how to plan a safe event. The purpose of the guide is not to present new regulations for work on event safety; however, the content of the guide is based, in many cases, on existing regulations in various areas of relevance for event safety.