

Managing crowds safely

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Introduction

Large crowds are a normal part of the operation of many public venues such as railway stations, fairgrounds, leisure centres and sports stadiums. From a commercial point of view large numbers of customers may be desirable. But excessive crowding and poor crowd management can lead at worst to crushing, injury and even death and at the very least to such anxiety and stress that visitors decide not to come again or recommend a visit to others.

Even small changes in the layout or venue, or a gradual increase in visitors, might lead to a disaster. In addition to the personal suffering such disasters cause, the accompanying adverse publicity, loss of revenue, compensation payments, insurance costs and possible prosecution can have a long-term effect on a company's viability. Disasters should not happen provided those responsible, at all levels, pay careful attention to managing crowds safely.

HSE-sponsored research

In January 1991 RM Consultants (RMC) was commissioned by the Health and Safety Executive (HSE) to study crowd behaviour, the different management and control methods currently in use, and the effect of crowd size, flows and venue design on the potential for overcrowding. They observed crowd behaviour in a wide variety of fixed and transient venues, interviewed senior and operational management and where possible asked visitors for their views.

Their study and crowd management recommendations based on it are published as a report entitled *Managing crowd safety in public venues: a study to generate guidance for venue owners and enforcing authority inspectors* (see order form at end of leaflet).

This will be of interest to behavioural and social scientists as well as to managers and owners of public venues. HSE is using RMC's study as a basis for guidance to be published later. This leaflet summarises some important points from the RMC study but it is not HSE guidance.

Responsibilities of the management team

Crowd safety is primarily a management responsibility and requires the application of the best practices of health and safety management. All who run venues, organise events or manage places which attract crowds should have a health and safety management system which anticipates, monitors and controls potential crowding risks.

Because venues, both fixed and transient, are large and complex spaces, the management of crowds requires team work with good communications and co-ordination between those responsible for the overall operation and those managing crowds face to face. Effective team work depends on senior managers providing a positive and pro-active safety culture so that staff at all levels are aware of the importance of crowd safety. In particular, the team needs:

- clear roles and responsibilities;
- written arrangements for the regular analysis, planning, inspection, operation and review of crowd safety systems; and
- adequate training.

The day-to-day management of crowds carries with it great responsibility. Preventing the unexpected from becoming a disaster depends on good management systems and experience. Between them, members of the crowd safety team should:

- research the type of visitor they expect and anticipate likely crowd behaviour;
- if it is available, collate and assess information about the health and safety record of previous events at the venue;
- conduct a risk assessment to decide the adequacy of arrangements in place to control crowds and change them if necessary;
- inspect the venue and review crowd safety arrangements at regular intervals;
- set targets for crowd management (for example, if queues extend past a particular point, open another service point);
- liaise with outside organisations such as police and the emergency services.

Factors to consider when making a risk assessment

When assessing the risks to safety in a venue both physical and behavioural factors need to be considered. Some of the more important ones are:

Design and layout

The layout of the venue, design of circulation routes and the design and location of facilities can have a fundamental influence on crowd behaviour. For example, small entrances or a limited number of turnstiles may control crowd flow into cramped areas, but may result in dangerous build-ups on the other side. Barriers can direct crowd flows and the shrewd location of desirable facilities can help spread visitors more evenly. It may not always be possible to change the layout to enhance safety, but it should always be considered as an option.

How much people know about the layout and design of the place affects the way they act, especially in an emergency

Visitors familiar with a venue are likely to use known routes to favourite viewing-points or attractions and may persist in doing this, even if the routes are closed. Those who don't know a venue may block routes while deciding which way to go and well-placed signs and information about attractions can help them decide quickly. In an emergency people often leave by the way they know best, even if it appears more dangerous.

Behaviour is affected by the provision of information

Clear signposts and simple, audible public address messages are vital. Poor communications can lead to people stopping, moving against the flow of the crowd, blocking passages or making frequent demands on staff for directions. Visitors without information, or given contradictory information, can become frustrated and aggressive.

What type of crowd?

Different types of crowd behave in different ways. Shoppers in a crowded mall, each with their own interests, make up a different crowd from spectators at a sports stadium. It is important to know, for example, the age-range and social mix of visitors to anticipate probable behaviour and make appropriate arrangements for it.

The behaviour of individuals is influenced by those around them

Individuals within a crowd usually behave in a rational and goal-orientated manner. For example, someone whose aim is to watch an event or celebrity may climb onto a roof or to the top of scaffold poles to get a better view, despite the danger. Other spectators with a similar aim may follow, leading to more people on the roof and the possibility of collapse and injury. A risk assessment should pick up the likelihood of this happening and enable adequate measures to be taken before the event. The RMC study describes how a risk assessment can be conducted.

Some hazards to watch out for

RMC's study identified those physical features of a venue that may lead to overcrowding and possible injury. These include:

- steep slopes
- dead ends, locked gates
- convergence of several routes into one
- uneven or slippery flooring or steps

The potential for injury increases in some situations. Potential hazards requiring identification and management control include:

- reverse or cross flows in a dense crowd
- flows which are obstructed by queues, or gathering crowds
- large pedestrian flows mixing with animals or traffic
- moving attractions within a crowd