Module 14

Waste Management & Noise Control

Large quantities of waste materials will be generated by the concessionaires and the audience at most events. Waste needs to be managed carefully to minimise the risks associated with its accumulation, collection and final disposal.

1. Types of waste

Types of waste generated include the following:

- paper and cardboard packaging;
- food and drink containers;
- left-over food debris;
- waste food from food concessions;
- glass;
- plastics;
- metal cans;
- other metal waste, eg construction materials;
- clothing;
- human waste products i.e vomit;
- medical waste such as needles and bandages;
- remains of camp fires;
- fireworks and pyrotechnics;
- waste water from toilets; showers and hand-washing basins;
- Waste water from food concessions;

2. Hazards posed by waste

Hazards posed by waste include the following:

- injury to workers during collection and removal of waste from the site. Examples include cuts and grazes, needle stick injuries;
- back strains due to manual handling difficulties and possible infection;

- accumulations of waste, blocking emergency access routes or hampering movement around the site as well as presenting tripping hazards to the audience;
- fire hazards when waste is accidentally or purposely ignited;
- the misuse of waste by the audience, eg throwing bottles, cans, etc;
- vehicle movements associated with the collection of waste materials;
- waste attracting insects and vermin.

3. Areas where waste is generated and the types of waste

Waste and the type of waste products will not be generated evenly across the venue or site. The build-up of waste will vary in different areas over time. A competent waste contractor will therefore need to manage their workers and equipment to ensure that there are suitable and adequate resources directed to the most appropriate areas at the most appropriate times. Each area of the venue or site may need to be managed differently.

Pay special attention to the following areas:

- approaches to event site, ie surrounding streets or land;
- entrances and exits;
- arenas and stages;
- sanitary areas;
- first-aid areas and health-care waste;
- catering areas;
- camping area.

4. Information to be exchanged with waste contractor

Ensure that details are given to the waste contractor concerning audience size, arena size, site boundaries, numbers of campers, food concessions, and other relevant factors. The waste contractor cannot accurately plan working methods or employ the correct number of workers without this information. Insufficient information could have serious consequences for the audience and employee health, safety and welfare.

Waste Management Template

Name of Event:	
Date(s):	
Time:	
Address of venue:	
Anticipated crowd size: Event activities:	
Venue description:	
Venue crowd capacity:	
Existing facilities:	
Other relevant information	

1 Event Details

2 Catering (add additional lines as necessary)

Food or drink type	**Packaging or tableware**	**Material type**
e.g. hot chips	Cups and bags	Paper

3. Activity Wastes (add lines as necessary)

Activity	**Waste Types**
e.g. novelty stores	Cardboard boxes

4. Catering Wastes (add lines as necessary)

Stall Type	***Waste Types***
e.g. burger shop	Cardboard boxes, food scraps etc

5. Waste Generation and Quantities (please outline this and following points)
What, where, when, how much?
6. Waste Stations (what for, how many)
7. Waste Station locations (where, when)
8. Promotion of waste system/handling (how announced, by whom)

ACTION	WHO	DONE **(tick)**
Write media release & issue to local media		
Arrange for signage (translations if necessary)		
Educate stallholders of waste system via presentation/flyer/phone		
Script announcements for PA or Master of Ceremonies		
Develop competition		
Include waste minimisation initiatives in advertising feature of event		

Arrange for local Council, community group, waste board stall to promote recycling at event/public education		

9. Activities required before the event (by whom, by when)

ACTION	WHO	DONE (tick)
Order bin caps		
Obtain labels		
Arrange for collection of bin caps		
Empty existing bins before event		
Remove stand alone garbage bins		
Cover up existing bins		
Set up waste stations at predetermined location		
Link/bind waste station bins together		
Check on bin location & signage		
Arrange packaging plan		

10. Waste management during the event (by whom, by when)

ACTION	WHO	DONE (tick)
Monitor set up waste performance		
Educate/remind stallholders as necessary		
Master of Ceremonies read announcements re waste		
Monitor waste & recycling bin content quantities		
Arrange bin cleaning/collection schedule		
Empty existing bins before event		
Remove stand alone garbage bins		
Cover up existing bins		
Set up waste stations		
Link/bind waste station bins together		

11. Waste Management after the event (by whom, by when)
12. Contact List (who, phone number, and area of responsibility)
13. Performance Review (results, conclusions, recommendations)
14. Attachment(s) (eg briefing notes, phone interviews, stallholder responses)

5. Methods of collection

The collection of waste from the site or arena usually involves a combination of the following:

- contractors' workers specifically trained to pick the waste up (litter pickers), and/or empty the receptacles placed around the site or venue;
- the use of sweeper vehicles and vacuum suction vehicles;
- vacuum tankers for collection of waste water temporarily held in smaller tanks; other vehicles, trailers and towing vehicles.
- Discuss arrangements with the waste contractor before the event so that any special requirements regarding access or height restrictions, storage space for vehicles or accommodation for the litter pickers can be incorporated into your overall event planning.

6. Receptacles

Waste receptacles can be positioned around the perimeter of the venue or site, and they can also be positioned within the venue or site or other areas as appropriate. Great care must be exercised in choice, size and location of receptacles. Wheeled containers or similar receptacles appear to be the most versatile at present as they can be obtained in a variety of sizes and are equipped with lids. They can be easily positioned and maneuvered as required. Also consider providing tamper-proof sharps bins. Steel drums are difficult to maneuver and empty when full so assess their use. Skips can also be used but again their positioning requires planning to ensure that there is suitable access for delivery and collection especially in wet weather. Generally, position them in areas separated from the audience. Waste receptacles can be set on fire, so require regular monitoring.

Large on-site compactors can also be used to reduce the bulk of the refuse. They will need to be plugged into an electrical supply and a trained operative should be available at all times. Front-end-loader containers may also need to be separated from the audience for reasons of safety, access for loading and to prevent the audience placing hazardous or other inappropriate waste into these units. The collection company must be a registered waste carrier or exempt from registration. Vehicles used to help with the collection of waste

must be mechanically sound and be accompanied with the relevant test certificates including an MOT if appropriate.

7. Times of collection

Discuss with the waste contractor the strategy for collection of the waste for the whole duration of the event, including pre- and post-event collections. Different collection methods may need to be planned for each of these phases.

8. Methods of removal

Discuss with the waste contractor the methods of removal of waste from the venue or site. There may be areas that are subject to a ban on vehicle movements during the event to protect the audience. The sites chosen for the bulk collection must have a suitable access route capable of taking the weight of often very large collection vehicles. These could weigh up to 38 tonnes. The responsibility for the disposal of waste does not end with the waste leaving the site or venue but extends until the waste has reached its final destination.

9. Health, safety and welfare of employees and event workers

Waste contractors have a legal duty to ensure that the health, safety and welfare of their employees is protected on site. The Personal Protective Equipment Regulation 1992 requires an employer to ensure that their employees have suitable and sufficient protective clothing and equipment to carry out their tasks.

Examples of suitable clothing include:

- protective boots or shoes with metal toe caps;
- trousers and jackets;
- waterproof suits;
- fluorescent waistcoats;
- hard hats;
- goggles;

- different types of gloves for different tasks.

Ensure that toilets are available throughout the waste collection process. Those handling waste need access to hot and cold running water, soap and nail brushes to wash their hands and bodies if they become contaminated. Toilets and washing facilities must be available, particularly at the final waste collection process and in some circumstances showers will be necessary.

Brief workers before beginning work to explain site hazards and risks, hours of work and meal breaks and estimated completion time.

10. Recycling

The options for recycling on site include designated recycling containers around the site. These can either be small-wheeled containers, which are then collected to allow further sorting of the materials to take place, or they can be larger 'banks' such as those provided by specialist contractors. The effectiveness of the segregation systems for recycling will be dependent upon the good will of the attendees to the event, adequate provision of the recycling containers, suitable clear labelling of the containers and the location of the containers.

11. The duty of care

Environmental Protection Act 1990 introduced a duty of care for waste management which applies to anyone who produces, carries, treats or disposes of controlled waste. Controlled waste is defined as any commercial, industrial or household waste. A waste producer is under a legal obligation to ensure that the waste is only collected by a registered waste carrier or someone registered as exempt such as a local authority. It should only be transferred to a site with a suitable waste management licence. The waste must be accompanied by an accurate description of the waste and transfer notices must be completed and signed. The duty of care also imposes a duty for people to contain the waste on site.

It is an offence to deposit controlled waste on land not in accordance with a waste management licence and also an offence to keep, treat or dispose of

controlled waste in a manner which is likely to lead to pollution of the environment or harm to human health. It therefore follows that the waste producer, in this case the event organiser, must ensure the selection of competent and responsible transport and disposal contractors. The waste producer must ensure that whoever has possession or control of the waste will handle and eventually dispose of it legally.

12. Sound: Noise & Vibration

High sound levels present a risk to hearing, both for those working at an event and for the audience. High levels of vibration can have serious consequences for the integrity of temporary and permanent structures. Both sound and vibration can lead to noise nuisance outside the venue. Therefore, proper control and management of sound and vibration levels is needed both in rehearsal and during the event.

A sufficiently loud sound including music, can damage hearing if people are exposed to it long enough. The risk to hearing from loud sounds is directly related to the dose of sound energy a person is exposed to. The risk of damage to hearing increases the louder the sound and the longer a person is exposed to it. At high sound levels the risk of damage to hearing occurs at much shorter exposure times than at lower levels; at extreme high or impulsive levels the risk of injury to the ear is almost immediate.

Most members of the audience attending events regularly enough do not suffer serious hearing damage solely as a result of going to music events. However, the louder events can contribute significantly to the overall sound exposure that members of the audience receive throughout their life, including noise from other leisure activities, at work and at home, therefore increasing the risk of damage to their hearing.

The Health and Safety at Work etc Act 1974 (HSW Act) and the Noise at Work Regulations 1989 require you to protect workers and the audience from noise. The Management of Health and Safety at Work Regulations 1992 (Management Regulations) also apply to cover noise and vibration considerations.
For the community impact of noise from events, many local authorities already have environmental music noise control protocols which they

apply to venues in their district. The Noise Council has produced a Code of practice on environmental noise control at concerts and recommends noise control procedures for minimising noise in surrounding areas
In terms of vibration impact, the effects off site will generally be much less significant than on site, with the nuisance aspect of vibration being most significant.

13. Workers

The Noise at Work Regulations 1989 gives the legal duties (on an employer) to prevent damage to the hearing of workers from excessive noise at work. They set out actions which must be taken when stated levels of noise exposure are reached.

If noise exposure is likely to reach the first action level of Lep,d of 85 dB (A) (Lep,d = daily personal noise exposure level) or peak action levels, employers must:

- ensure that a noise assessment is made by a competent person;
- provide workers with information and training;
- provide ear protection for all workers who request it.

If noise exposure is likely to reach the second action level of Lep,d of 90 dB (A) or the peak action level of 200 pascals (140 dB), employers must:

- ensure that a noise assessment is made by a competent person;
- provide workers with information and training;
- reduce exposure as far as is reasonably practicable by reducing sound levels or the time exposed to the noise or both (without ear protection);
- provide ear protection to all workers and ensure that they are used correctly.

14. Audience

There is no specific legislation setting noise limits for the audience exposure to noise. However, the general requirements of the HSW Act and civil law duties relating to negligence reveal that audiences need

to be protected against and informed of the risk of damage to their hearing.

The event equivalent continuous sound level (Event Leq) in any part of the audience area should not exceed 107 dB (A), and the peak sound pressure level should not exceed 140 dB where practicable, the audience should not be allowed within 3 m of any loudspeaker.

This can be achieved by the use of approved safety barriers and dedicated stewards, wearing appropriate ear protection. Where this is not practical, the overall music sound levels will have to be modified so that people closer than 3 m to the loudspeakers are not exposed to an Event Leq of more than 107 dB (A) or peak sound pressure levels of more than 140 dB. Under no circumstances should the audience and loudspeaker separation distance be less than 1 m.

Sources of noise other than music also need to be properly controlled. In particular, the noise from pyrotechnics should be restricted so that at head height in the audience area, noise from pyrotechnics does not exceed peak sound pressure level 140 dB or 200 Pa. Discuss this requirement with the specialist pyrotechnic technicians before the event, as charge density and altitude of deployment may need adjusting to meet this requirement.

Noise sources such as music associated with funfairs and sound systems brought onto site by merchandising concessions can also add to the overall noise levels produced by the event as a whole. Also consider an assessment and control of these sources.

15. Controlling sound and vibration levels

Measures to control worker exposure include:

- restricting the length of time spent in noisy conditions;
- restricting music noise levels during rehearsals and sound checks;
- shielding of work areas where workers do not need to fully hear the music to function properly, ie backstage, under the stage, stage

wings, in artist and guest hospitality areas, first-aid posts, and in areas used for organising the event, safety, control and administration, etc; using ear protection in areas which are likely to exceed the first action level of Lep,d of 85 dB (A) and where there is no other practicable way of reducing the noise level below this level.

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Ear protection should ensure that when worn properly the sound exposure of the person is below the second action level or peak action level of the Regulations. The Regulations require that where ear protection is provided, workers must wear it in the appropriate ear protection zones. Ear protection should be provided by the employer. It should be allocated to appropriate workers at risk as identified in the event risk assessment. Additionally, ear protection should also be provided as back-up near to the ear protection zones identified in the event risk assessment. If communal stores or dispensers of ear protection equipment are used, the equipment should be checked for wear and tear and restocked before the start of each event and during the course of each event as necessary.

If self-employed people are on site and are likely to be exposed to noise levels which exceed the first action level of the Noise at Work Regulations 1989 (Lep, d 85 dBA), notify them in writing to comply with the noise exposure control regime for the event, stating that they must provide their own ear protection.

For certain workers such as sound engineers and the performers, it is often argued that they need to be able to hear the music at least at the same level as the audience. This frequently results in these people being routinely and repeatedly exposed to noise levels which exceed the first action level of the Noise at Work Regulations 1989 (Lep, d 85 dBA), with accompanying serious risk of hearing damage.

Ear protection, both passive and active, is now available which equally reduces sound across the frequency range. It has been successfully used by sound engineers and musicians, etc, to restrict their exposure to high music noise levels, without unacceptably compromising the quality of the

music sound they hear. Encourage relevant workers to use such specialist ear protection.

Sound levels often rise during an event to maintain impact or to emphasise leading performers who appear towards the end of a show. Where this is likely to occur, the sound level for earlier performers should be set lower to allow for the likely increase, so that the overall sound-level limits are not exceeded.

Where control of the sound system is to be transferred to another engineer during the course of an event, all the engineers involved need to be informed about the sound-level monitoring and control system.

16. Monitoring sound and vibration levels

Monitoring of sound and vibration levels during rehearsal, sound check and performance elements of an event is necessary so that there is adequate control of sound and vibration levels. Monitoring can be continuous or for a succession of short periods, eg up to 15 minutes, to enable the overall noise levels for the event to be established. Noise levels for the audience should be checked at head height in the loudest part of the arena, usually at the front-of-stage barrier. As stated previously if the sound level is measured elsewhere, eg at the front-of-house mixing desk position, a correction needs to be estimated during the initial assessment and applied to allow for the difference between that measurement position and the loudest area.

During the event, those involved in monitoring and controlling sound and vibration levels need to be able to maintain a dialogue. If monitoring indicates that the sound and vibration levels are liable to exceed the relevant limits, the sound engineer needs to be advised to adjust the system immediately. All sound engineers need to be instructed to act on the advice of the nominated person responsible for overall control of sound and vibration levels.