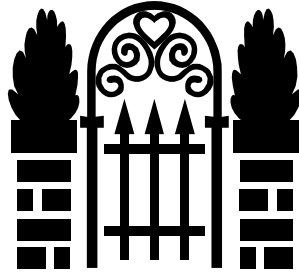


GUIDANCE NOTE

RISK ASSESSMENT: SCENERY



Introduction

This Guidance Note is intended to be a practical guide for use by those who may not be fully familiar with the hazards associated with theatre scenery on the stage. **It is not a guide to the safe construction of scenery in the workshop.**

Various Regulations require risk assessments to be made – the principal ones being the Management of Health & Safety at Work Regulations and the Fire Precautions (Workplace) Regulations. Generally the Regulations require the risk assessment to be written down. Even where employment may not be involved, common law responsibilities will generally place a duty of care upon those responsible for the scenery for the show. The responsible person(s) may be the employer, the director, the designer, the constructor, the production manager, the stage manager, etc. However this guidance is not intended to offer guidance on the law but rather to provide practical guidance to those making the risk assessment.

Risk assessments are a tool to identify the hazards that could occur and to establish the precautions necessary, preferably to prevent any accident occurring or, at least, to reduce the possibility and the severity to an acceptable level.

Planning

The primary risk assessment of theatre scenery should take place whilst planning the production. It should cover:

- building
- get-in and erection
- rehearsals
- performances
- dismantling and removal
- disposal

The risk assessment should be updated as necessary throughout the life of the production. This is particularly important as the show evolves during rehearsals.

The need for the risk assessment still applies even if the scenery is hired or some aspects of the production are sub-contracted.

Hazards

The hazards that can occur with theatre scenery include unsafe structures, trips and slips, falling objects, crushing, fires, falls from heights, entrapment, strains from handling, cuts and bruises.

| The questions to consider include: | | Comments |
|------------------------------------|---|--|
| Plan | Does footprint of the show allow sufficient space in the wings? Is there enough space to assemble the set? | Means of escape must be provided; exit doors must be kept clear. Fire lanes should be clear. Overcrowded wings may be dangerous. |
| Strength | Is the scenery strong enough not to break during get-in and fit up? And able to support the action? | Raising large pieces (such as French flats) from the horizontal imposes considerable strains. |
| Stability | Could the set fall over? | Risk of collapse during erection or use must be avoided. Practical upper levels should be safe. |
| Get in | Is each piece small and light enough to get onto the stage easily? Is each piece of scenery that has to be moved manually as light as possible? Will sufficient numbers of crew be available? | Pieces over 50kg should be weight marked; ideally all pieces should be marked. Out of balance pieces should have the centre of gravity marked. Surfaces should be non-abrasive. All edges should be smooth, (arrised) and projections (nails, bolts) be avoided. Large, awkward, or heavy pieces may require mechanical handling aids. Proper lighting of get in area essential if night-work envisaged |
| Fire | Will scenery resist easy ignition and have a low surface spread of flame? | Scenery should be made from any of the following materials: non-combustible material; inherently flame-retarded fabrics; durably-treated flame-retarded fabrics; non-durably treated flame-retarded fabrics (for short runs); timber, hardboard or plywood treated by a process of impregnation which meets class 1; timber framing of minimum 22mm nominal thickness; medium-density fibreboard (MDF), plywood or chipboard not less than 18mm in thickness; any other suitable materials approved by the licensing authority. On stages equipped with a safety curtain these standards may be relaxed to allow the use of all types of f-r fabrics and of all thicknesses of plywood, hardboard or similar boards so long as any boards under 6mm thick are treated by a process of impregnation which meets at least class 2. |
| | Can the use of significant amounts of plastic products be avoided? | Many plastics, even fire retardant grades, can present a serious hazard in a fire. The use of plastics and polystyrene should be avoided. Where unavoidable, eg for statues, a non-combustible skin should enclose any expanded polystyrene. |

| The questions to consider include: | | Comments |
|------------------------------------|--|--|
| Floors and rostra | Is the floor of the stage, or any over-stage, sufficiently strong to support the scenery? Will the floor of any rostra be adequate? | Trucks on castors can provide significant point loads. Tallescosopes are often used for focussing and impose significant point loads. Metal rostra legs may need spreader plates. |
| | Are holes in the floor eg trap doors needed? | Strength of traps must be adequate and should be at least as good as rest of stage floor. Safe methods of working, eg guardrails and rehearsal, to prevent falls must be established. |
| | What type of surface treatment is wanted? | Scenic floors should be non slip and not abrasive. |
| | Are changes of level required? (Level floors usually necessary for dance.) | Any changes of level should be clearly indicated. This is particularly important in offstage areas. Where edge marking is inappropriate onstage, temporary marking desirable and frequent rehearsal needed. |
| | Will floor be raked? | Specialist advice desirable if steep rake – 1 in 12 or more – to be used. |
| | Are scenery tracks required? | As far as possible no gap should exceed 8mm although wider gaps may be acceptable where the performers have appropriate footwear. |
| Edge of stage | Is stage floor more than 380mm above auditorium floor or orchestra pit? | Some indication of the edge of the stage, eg a rope barrier, may be desirable during rehearsal. If there is a drop exceeding 600mm, the downstage (front) edge of the stage should be clearly indicated. Possible methods include the use of luminous marking tape, a contrasting finish to the auditorium or a lip on the floor about 300mm upstage of the front edge. |
| Steps and stairs | Are rustic or otherwise eccentric staircases wanted? | The rise of each step should be equal; it may be acceptable to vary the going for artistic effect. |
| | Are get-offs required? | Any get-offs should have strong handrails – on both sides where the rise is more than 2m. Pitch must be constant and not excessive. |
| Working at height | Are there unguarded levels? | Wherever possible balconies should have strong barriers. Handrails may be omitted from scenery solely for artistic effect where training by frequent rehearsal will ensure safety. Some form of edge marking is, however, essential in these cases. A grab wire may be appropriate. Be aware of 'blinding' problem by bright lighting. |
| The questions to consider include: | | Comments |
| Flying | Are parts of the set to be flown? | Important that fixing points are strong enough. Generally the load should be picked up at the bottom of the piece. Useful if weight of assembled pieces marked. Heavy items impose considerable strains especially when counterweight flying. |
| Moving scenery | Does the production involve scenery that moves during the performance? How will it be moved? | Consider how the movement will be stopped if something goes wrong. (Proper vision of the full travel of moving scenery is always desirable.) |

| | | |
|------------------------|--|---|
| | Can the operator(s) see the scenery when it is moving? | |
| Special effects | Are practical light fittings to be fixed to the set? | Construction of the set should support weight of fittings. Area adjacent to any lamps should resist ignition. Electrical connections should not be made using unenclosed 'choc blocks.' |
| | Are pyrotechnics or real flame to be used? | Scenery within 2m of any pyrotechnic should be non-combustible or have limited combustibility. |
| | Are 'glazed windows' wanted? | Glass should not be used unless it is safety glass or lined with plastic safety film. Plastics substitutes should be of flame-retarded grade. |
| | Is running water wanted? | The weight of water if tanks are to be used needs to be considered. Local stop cocks should be provided; essential if 'mains water' supplied. Consider increased electrical and spillage hazards. |
| Metal | Do metallic components need to be earthed? | If electrical equipment is to be mounted on exposed metalwork, the metalwork should be properly earthed. If there is risk of damage to electrical cables either provide mechanical protection or exposed metalwork should be earthed. |
| Fit up | Is there enough time available to erect the set? | Large pieces may reduce erection time but increase handling problems. |
| | How will the electricians reach luminaires? | It should not be necessary to have to climb on the set. Safe access to luminaires should be provided. |
| Rehearsal | Does the set present any particular hazards eg steps? | Consider temporary marking of hazards. Important that there is sufficient time for the cast to become familiar with the set. |
| | Are escape routes, and signs obvious? | Consider additional temporary lighting and escape route signs. |

Further guidance on some of the issues raised in these notes may be found in *Technical Standards for Places of Entertainment* and *Model National Standard Conditions*, produced by ABTT and DSA.

Whilst all due care has been taken in the preparation of this document, the Association of British Theatre Technicians together with its members, officers and employees cannot be held responsible for any omissions or errors contained herein or for any damage or injury arising from any interpretations of its contents.

© 2002 Association of British Theatre Technicians, 47 Bermondsey Street, London SE1 3XT
 Tel: 020 7403 3778 ● Email: office@abtt.org.uk.