Entertainment Industry

**Mandatory Focus Area: Staging**

Welcome: this module will assist you to review and revise the content of the mandatory focus area ‘Staging’. Each focus area prescribes the scope of learning for the HSC and is drawn from associated units of competency.

You will have studied the competency [CUASTA301 Assist with production operations for live performances](http://training.gov.au/Training/Details/CUASTA301) which addresses the scope of learning (see HSC Focus Areas).

This module is broken up into:

* Important notes
* Key terms and concepts
* Activities
* Putting the theory into practice
* HSC focus areas

How to use the resource

Work through the notes and the suggested activities in any order. Great revision techniques include working through how a problem is solved, explaining the concept, testing yourself and retrieving information from your memory. Spread your revision over a number of sessions rather than sitting at one subject for lengthy periods.

Discuss your responses with your teacher, fellow students or an interested family member.

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# Important Notes

You should use the information here as a prompt and guide when revising your study notes or text-book information or other resources provided by your teacher.

You can also access industry specific information at [SafeWork NSW](https://www.safework.nsw.gov.au/), [Live Performance Australia](https://liveperformance.com.au/resource) and [Media Entertainment and Arts Alliance](https://www.meaa.org/).

The unit [CUASTA301 Assist with production operations for live performances](http://training.gov.au/Training/Details/CUASTA301) describes the performance outcomes, skills and knowledge required to assist with a broad range of tasks associated with technical and staging aspects of live performances.

The outcomes of the HSC mandatory focus area ‘Staging’ require that the student:

* demonstrates knowledge of the production context in relation to staging operations for live performances and events
* interprets production requirements and applies them to the staging of live performances and events
* describes the relationship between staging operations and other technical and creative aspects of live performances and events
* applies the troubleshooting process to potential operational problems and devises appropriate solutions.

### Production Context

##### Stage Management

In large productions, the role of the stage manager will be divided into three roles. The Stage Manager, the Deputy Stage Manager and the Assistant Stage Manager

The role of the stage manager is particularly important to the director in rehearsals. The director and the stage manager work side by side, with the stage manager recording the director's decisions about blocking and notes for the actors, keeping track of logistical and scheduling details and communicating what goes on in rehearsals to the rest of the team. This enables the director to concentrate on directing.

**Some of the Stage management team responsibilities are:**

* scheduling and coordinating Bump In/Bump Out
* scheduling and running rehearsals
* communicating the director's wishes to designers and crafts people
* coordinating the work of the stage crew
* calling cues and possibly actors' entrances during performance
* overseeing the entire show each time it is performed
* In the Prompt Copy Book
	+ Records all blocking during rehearsals
	+ Records all the light, sound and set change cues
* Issues up to date run sheets to all areas,

**Role of the Stage Manager**

The stage Manager has three different areas of responsibility within the production; handling the majority of the administrative duties related to a production, assisting the director during rehearsals, and being responsible for all backstage activity once the show opens.

**Deputy Stage Manager**

The DSM (Deputy Stage Manager) will also generally cue the show, giving calls and ‘GOs’ to the actors and all departments, enabling the changing of scenery, lighting and sound to be co-ordinated. They might be required to take over the stage manager’s duties during some of the rehearsals, including ensuring the prompt book is kept up to date. Other responsibilities involve assisting actors by prompting them during rehearsals, liaising between actors and the stage manager, and liaising between the stage manager and technical personnel.

**Assistant Stage Manager**

The ASM is a transition role between stage crew and stage management. An ASM is an assistant to the stage manager and participates in all rehearsals and performances. Depending on the size of the show, the ASM may be required to move props and sets during changeovers, assist with prompting during rehearsals and assist with preparing the stage for each day’s rehearsals.is often stationed just offstage (usually stage left) to facilitate communication between the stage manager, crew and actors, as well as ensuring safety. This is the most junior role in the stage management team.

**Set designer**

Everything you see on stage apart from the actor is part of the set design. The props, drapery, the stage furniture, the scenery and all the other physical surroundings are designed by the set designer. The set designer’s job is to physically design the idea that is in the director’s mind. The designer draws diagrams often with the aid of a computer aided drawing program (CAD) or makes models of the set for the director to approve.

The set designer is part of the design team who work collaboratively to ensure the director’s ‘vision’ of the show is realised. The costume and lighting directors collaborate with the set designer to make sure that each area is complimentary with all others.

**The process**

Before the set designer begins designing the set, the designer must become familiar with the script. The designer usually reads the script a number of times with discussions with the director in between readings. The set designer must become familiar with the theatre so the physical limitations of the stage can be taken into account. The designer must also research the time period and location in which the play is to be set as this will affect furnishings and scenery.

To present the design ideas to the director the set designer usually draws sketches the final design presenting an overview of what the stage will look like. The set designer then draws up scaled floor plans showing the layout of furnishings and props. Programs such as ‘AutoCAD’ enable the set designer to print out their designs in different scales and from different perspectives. This is particularly useful for the costume designer, lighting designer and stage manager for their planning. It can pre-empt problems; for example, if the play is a period play the designer must allow enough room for the actors in elaborate large costumes to move freely about the set.

A scale model is made to clearly show the set designer’s concepts. This model will be particularly useful in discussions with the lighting designer, costume designer and stage manager. The model can also be used early in the rehearsal period when the actors may not have actually seen the stage where they will be performing.

**Set builder**

A set builder is usually a tradesperson who has specialised in set building. A set builder needs to be able to work with a variety of materials including metals, wood, plastics and furnishing materials. The set builder has to convert the set designer’s scale drawings into three dimensional objects which are robust, lightweight and easily moveable.

Set builders have to be adaptable and creative, have the ability to work to a strict budget and time frames and have a thorough understanding of the requirements of stage sets and props. Any builder could build a safe and sturdy set of stairs but a set builder needs to ensure that they are safe and sturdy and can be easily transported and handled by the stage crew. Set builders may work at heights or in cramped spaces and are often required to use scaffolding and other elevated work platforms.

**Prop builder**

The prop builder or prop maker must work closely with the set builder. The prop builder is responsible for making the parts of the set that the set builder does not make – usually anything that can be easily carried on or off stage. Properties (usually abbreviated to props) can be quite small, from a cigarette lighter up to a dining room table. Props can be ‘hand’ props – props carried on by actors or set dressings – drapes, furniture accessories or other items that dress the set.

Prop builders are usually given the plans from the set designer, a list of other required props from the director, a list of props to make, a budget and a deadline for completion. It is then left to them for construction. Prop builders must research the time period and geography of the play so if a play is set in a space-ship the props will need to look a lot more futuristic than if the play was set last century. Sometimes it is cheaper to hire or buy props rather than to manufacture them and that is left to the discretion of the prop builder as the time needs to be costed into the prop production costs. Sometimes props can be refurbished from the company’s store of existing props; a coat of paint and a change of fabric can completely change the look.

**Scenic artists**

A scenic artist paints scenic backdrops according to specified designs from set designers. They often have skills in art or painting and decorating, and work on plays or theatre productions to produce scenes that may reflect different periods or locations in the world.

In a large professional production, a scenic designer may be employed to design the scenery in collaboration with a set designer. In some cases, the scenic designer will actually be one of the scenic painting crew, while at other times the scenic designer will only design and then remain in consultation with the painters until the design is completed.

Scenic artists often need to make changes to their work after it has been assembled and seen under lights on stage. This is called ‘touch up’ and is scheduled into the production program. Some of the ‘touch ups’ are covering the screw heads where the scenery has been screwed together or a major repaint of the scenery needs to happen because the director is not happy with it when seen under lights, doesn’t like the texture, or it clashes with costumes. These major repaints are very expensive in both time and money.

##### Stage crew

The stage crew are the people you see dressed in black. They are responsible for the movement on and off stage of props (except for personal props), drapery and set elements. They assist the set builder with the construction of the set, often painting set elements and scenery.

**The stage crew is responsible for:**

* organising transportation of the sets to the venue
* ensuring the stage floor is clean and safe before the show starts.
* safe storage of scenery, props and set elements during the production.
* packing the set up and preparing hired equipment for transport back to the hire company, after the production.

##### Mechanist

The audience only sees part of the stage at a performance. The wings are masked by curtains or sets and the back curtain, or Cyclorama, hides an area for storing sets and props. The floor is often specifically built for the production and is usually constructed in sections which can be raised up to stage level and above. The floor may have tracks built into in it, to guide the trucks used during the production.

Stage machinery are devices which assist with theatrical effects. For example, the scene in ‘Phantom of the Opera where the boat floats along an ‘underground river’. People who operate stage machinery are called Mechanists.

##### In house/venue Crew

The majority of venues have in house or venue crew. Small venues may just have a venue manager who also works as in house crew. But most venues have at least one full time employee who oversees the technical aspects of the venue. This person is known as a TOD (technician on duty). Even if a venue hirer is bringing in their own technical crew, they still have to pay for a TOD. The TOD assists the external crew with venue information and monitors ensures that the venue equipment is used correctly, often monitoring noise levels.

A larger venue will have a larger crew, often with a technician in each specialist area, lighting, audio, vision, staging and front of house management.

##### Venue manager

A venue manager is the person who is in charge of the venue, which may be a hall, theatre, conference centre or hotel. Their main job is to oversee activities and use of the facilities, which involves ensuring the venue is clean and all equipment is working. Even though this is primarily a front of house position, staging personnel still have to work with the venue manager. Bookings to view the stage, bump in and bump out all have to be made through the venue management team. Designers can obtain copies of the stage plans from the venue manager.

Financial management is a large part of the job and the venue manager is in charge of all venue based budgeting including the responsibility for hiring and firing employees.

**Skills needed**

* Experience with technical events
* Strong management skills
* Financial management experience
* Excellent communication and interpersonal skills
* Highly developed administrative and organisational skills

##### Communication Protocols

The client usually communicates with the director, producer or technical director, rather than with the crew members. The technical director communicates with the crew supervisor eg stage manager. If there is a technical issue, a crew member should report directly to their supervisor, rather than the technical director (the technical director’s role is more ‘big picture’ overseeing role, not dealing with a broken lead.

At all times the client must be treated respectfully and made feel confident in the ability of the crew.

Prior to the production meeting, the client will have supplied a document outlining their requirements A Pre-production meeting with the client and the director, producer and technical director will occur where the client will discuss their requests and any issues pertaining to these requests will be discussed. In some events, the client is also the director.

During the live production, communication between crew is usually over comms or ‘cans’ as they are known in Entertainment Industry jargon. During the live production, the stage manager is in charge and will give cues to lighting, audio and vision. In corporate events, the stage manager is called the ‘show caller’.

Postproduction, the client has a meeting with the director, producer and technical directors. This is where the production is evaluated and improvements for the next event are discussed. In corporate work, the client may not attend the meeting. They may provide feedback to the director instead.

Meetings are held within production areas pre-production and post-production, these are usually run by the Head Technician of each area, eg Lighting director

##### Production Plan

A production plan is a timeline which outlines all the tasks to be done, who is responsible for them and when they are to be done. A very good example of a [production plan](https://cpb-eu-w2.wpmucdn.com/blogs.lincoln.ac.uk/dist/7/2534/files/2014/05/PRODUCTION-PLAN-hmdt.pdf) can be found on the Hand Me down Theatre website

##### Stage plans

Stage floor plans are used to show designers, directors and other prospective clients the layout of the venue. The plans are drawn in 1:50 scale or 1:100 scale.

An excellent example of a 1:100 stage floor plan can be found of the [Riverstage](https://www.brisbane.qld.gov.au/sites/default/files/20140620_-_riverstage_-lvl_1_plan.pdf) on the Brisbane City Council website. These plans graphically show the general layout of each floor, rigging points, audio outlets and three phase outlets.

Another example of a stage plan is of the [Playhouse](https://qpac-umbraco-cdn.azureedge.net/media/1255/playhouse_stage_plan.pdf) Queensland Performing Arts Centre.

The advantage of drawing plans in 1:100 scale is that a lot of information can be put onto a single page, giving a very good overall perspective of the venue layout. One of the disadvantages is that it can be difficult to see all the detail, particularly in a complex large venue.

An advantage of having plans on computer is that is quite easy to magnify small scale plans. As an example see the [Sydney Opera House Drama Theatre Plan](https://www.sydneyoperahouse.com/content/dam/pdfs/venues/drama-theatre/Drama-Theatre-Stage-Plan.pdf).

Using the stage plan, designers can design the set, sound, lights and vision systems. Set designers use ground or floor plans of the stage as a template. They are then able to place scale drawings of scenic items and props on the template to show the director and the set builder. The set builder will also be given an ‘elevation’ which is a plan showing the set from a front- on view, with the height of each set piece clearly indicated. The plans would probably be produced in a Computer Aided Drawing (CAD) program such as AutoCAD.

##### Technical specifications

Before you decide to book a venue for your production, you must check the technical specifications to ensure the venue will be suitable for your production. Venue technical specifications are usually available online for you to download and check.

Each venue within the Sydney Opera House has a ‘Technical and Production Information’ document which itemises all technical, specifications for that theatre. Check out the [Sydney Opera House technical specifications](https://www.sydneyoperahouse.com/general/technical-specifications.html) for at least one of the theatres to see the value of this documentation.

Another interesting [Technical Specifications document for the Riverside Theatre at Parramatta](https://riversideparramatta.com.au/wp-content/uploads/Riverside-Theatre-Tech-Specs-2020.pdf) is available to download. The document includes stage size, the fly system, height access system and everything you could possibly want to know about the technical specifications of the theatre.

##### Live Event Production Cue Sheet

An event production cue sheet is a document that states the sequence of technical cues for a particular event (live concert, broadcast, presentation, product launch etc) in a way that the technical and creative teams can follow without difficulty. Cue sheets are often called Run sheets, showflow, rundown, [cuesheet](https://blog.shoflo.tv/what-is-a-production-cue-sheet), or cue2cue.

A run of show is a cue by cue detail of a live event production. It’s the primary document that a show production crew uses to learn about what the flow of the show is and what the technical production cues for the various audio, video and lights will be along the way.

**Format of Live Production Cue Sheets.**

Cue sheets are most commonly laid in out a grid format, where the first column is the list of key events in a show (Voice over begins to a title slide, presenter walks on stage, presenter commences PowerPoint, etc) and the remaining columns represent the various technical departments cues for that event (audio, video, lights). Cue sheets are usually created by the production team in excel or sometimes Word, printed and then distributed to the production crew for rehearsals and show.

**Version Control**

Event production cue sheets are always given a version number because changes are expected in production and the crew will often need to check which version of the cue sheet they are working from. Crew should mark changes on their cue sheet during the rehearsals and check that they are there when the new version is distributed. Version Control is usually found in the footer of the cue sheet. It may have the production name, date and version number.

**Who manages the Cue sheet and its Version Control?**

The production cue sheet is usually managed by the event show caller or stage manager for live events, and the director for broadcast and television. The stage manager/show caller will often receive an agenda from either the client or producer and they will then convert it to a standard cue sheet layout.

In theatre the person managing the show and the cues is known as the stage manager and in a large production there will be an assistant stage manager and a deputy stage manager. In Corporate events the person managing the event is usually known as the show caller – as they call the cues. In theatre productions all modifications and changes to the cue sheets/run sheets is entered into the Stage Manager’s Prompt Copy book.

As technology develops, the Cue Sheet/Run Sheet have become more complicated. Keeping up with changes using Version Control has helped, but often due to the many minute changes that happen during the rehearsal time, constantly printing our new versions of the script becomes problematic. Crew often just scribble the changes on their existing versions and the Cue Sheets become overcrowded with added notes and crossed out added notes. Many large production companies are now using ‘real time’ digital cue sheets rather than paper ones. That means all changes happen simultaneously for all crew and the crew are not running from out of date Cue Sheets.

Professional Cue Sheet/Run Down Sheet templates can be found at Google Sheets, Shoflo and Smart Sheets

### Production Operations

**Corporate and non-Theatre Events**

Prior to a live event taking place the client contacts a production company to produce and provide technical support for their event. Budget, venue, audience size, technical requirements are discussed. The event producer then employs a production company to manage the live production for the event. One such Australian Company is Encore Technologies, formerly known as Staging Connections.

Once the budget and other details are agreed upon, the production company proceeds to take over running the technical production side of the event.

Prior to the day of the event, crews bump in and test the equipment. Equipment is set up according to the plans that have been provided by the Set Designer.

In some cases, there will be a technical rehearsal if there are performers involved. This allows all systems to be checked, movement of set pieces and scene changes rehearsed, camera angles modified, sound and lighting checks and the performers to be comfortable on the stage.

When the event has finished, the equipment is bumped out and returned to storage where it will be checked for damage. Equipment logs will also be checked through as technicians may have noticed faults with the equipment and noted it in the log. At this time equipment is also cleaned so it is ready for the next production. Inventory is checked to ensure that all equipment is accounted for. Equipment maintenance logs are completed at this time.

**Theatre**

In theatre a director decides upon a script, works with a producer to organise the business aspects of the production such as venue booking, budgeting, auditions, hiring crew etc

The producer and the director work together and come to an agreement on the budget and all the details necessary for the director’s artistic vision to be realised.

The producer will hire in the necessary personnel (set designers, lighting, costume designers stage manager etc) for production meetings to discuss with the director the technical aspects of the play. Once this part of the production has been organised, the casting process begins.

The Shuswap Theatre Society has an excellent example of a [Suggested agenda for first production meeting](https://shuswaptheatre.com/wp-content/uploads/Agenda-for-First-Production-Meeting.pdf).

**Corporate events**

Corporate events tend to be held in hotels and convention centres rather than theatres. A corporate event can be an Annual General Meeting (AGM), a product launch, a company dinner or Christmas function, a training event or a variety of other events organized by business. Large convention centres such as the Exhibition Halls at Darling Harbour or Homebush are excellent venues for corporate events, especially trade shows. An example would be the ‘[Entech Roadshow’](https://www.entech-roadshow.com/australia-1) (the largest trade exhibition for the entertainment industry in the southern hemisphere) which is held biannually.

Venues for corporate events often don’t have a fixed stage as the venue needs to be very flexible for the variety of purposes it is used for. Temporary staging is brought in to suit the particular event if needed. Product launches will often employ a band or entertainer to perform, so a small stage is set up in the desired place.

**Indoor and outdoor venues**

The advantage of an indoor event in an established entertainment venue is that equipment can be set up prior to the event with few security issues. Often cabling will already be installed and lighting and sound will be permanently set up, however not all indoor events are held in performance venues. Shopping centres are often used for a variety of entertainment events such as product displays and children’s holiday entertainment. These types of venues are quite good to work in, in terms of bumping in and out, as they usually have a set area where portable staging can be set up and have power available. On the other hand, they can be dreadful for sound because of all the hard reflective surfaces. Portable staging is often used in these types of venues.

Christmas carols are often outdoor events with thousands of people watching, such as the annual Carols in the Domain in Sydney. All the staging for these types of events is brought in and erected for the event. Work often starts the day before or early in the morning. These types of staging events also have security issues as anything set up in a public area is at risk from theft or tampering, therefore security for these events starts at the bump in phase of the event and finishes when the last piece of trussing and staging has been packed away.

**Portable staging**

Portable staging is often required at outdoor venues and other non-theatre-based venues. Any staging used should be certified as appropriate for the purpose it will be used. It must be rated for the weight it is going to bear and be stable enough for performers to feel comfortable standing on it. Portable staging should be light and easy to assemble.

##### Staging elements

**Revolves**

The Revolve has become immensely popular in theatre today. ‘Priscilla Queen of the Desert’ used a huge revolve for the big bus. It also provided a treadmill for the actors to walk on. A treadmill allows actors to walk but not actually cover any distance. Revolves may have more than one circle on them. In the case of ‘Priscilla’, the actor was on the outer revolve, and used it as a treadmill, while ‘Priscilla’, the bus, stayed where it was.

Two tiered revolves are also known as drum revolves. They are a combination of a lift and a revolve. The set rises through the floor and then slowly turns to face the audience. These revolves have a disc system to fill in the hole when they are below stage level.

**Elevated work platforms**

Elevated work platforms are used by crew to construct sets, rig and focus lights, assist with flying speakers and any general height work that needs to be done. An elevated work platform can be motorised, such as a scissor lift, or it can be a fixed platform, which is climbed up, such as a scaffold.

**Lifts**

Lifts, or elevators, are stage machinery that raise actors or set elements up to, and even above, the level of the stage. The lift which raised ‘Kylie Minogue’ and her grand piano was a hand driven counterweight lift. At a given cue Kylie and her piano rose through the floor of the empty stage – a quite spectacular effect. Lifts can be used to ensure very fast set changes. Set elements can be set up on lifts below the floor level and quickly rise up through the floor when required. The previous scene’s set could be sinking back through the floor while this is happening. To fill the hole where a lift has descended, ‘sliders’ slide under the stage floor and then rise up to fill the space.

##### Traps, trucks and the stage floor

**Traps**

Traps are small sections of stage floor which are large enough for an actor to appear through. They have been used in theatre since the time of Shakespeare and in older theatres were accessed by a ladder or steps. In modern theatres, traps usually have a lift under them allowing the actor access to the stage.

**Trucks**

A truck (sometimes called a wagon) can be described as a low platform on wheels or castors. A truck may be something as basic as a piece of flat wood with wheels on it. They are used to move scenery around on stage when lifts and revolves are not appropriate. The wheels of a truck may follow tracks built into the floor of the stage. The set is placed on it and it can be accurately pushed into place by crew or actors. Very big set components can be fitted with air castors. These work like a hovercraft, where the set is raised from the floor by air pressure.

**The Stage floor**

The stage floor (or deck) is part of the stage machinery. Large and long running productions bring their own purpose built stage floor into the venue. In smaller and shorter season productions the company brings in their own stage floor, and makes use of the existing traps, revolves and lifts. Therefore, it is extremely important for the set designer to have detailed plans of the stage before set design commences.

Some stages are ‘raked’ stages, a stage which slopes towards the audience. This type of stage can give a more intimate feel to the play and also allows the audience a slightly better view of what is happening at the back of the stage. Raked stages are the reason we have the term downstage and upstage. Down towards the audience and up away from the audience. Raked stages can be dangerous for dancers and sets have to be specifically constructed for the ‘angle of rake’ the stage has. This is one of the reasons theatre companies bring in their own stage to place over the top of the existing stage. They want a stage floor that suits their set and is safe for the actors.

##### Visual Display

Projection is being used more frequently in theatrical productions. Projections from lights using GOBOs are often used to replace scenic elements such as paintings. A Gobo with a castle on it can be very effective in portraying a castle on the cyclorama wall. GOBOs have progressed from being simple cut out silhouettes to full colour images that can be rotated on demand.

Video projections are more flexible and are displayed using powerful video projectors. They have the advantage of being able to project still images or video clips.

##### Staging set pieces

Stage set pieces are the scenic elements which are added to the stage for a production.

Scenery is the term used to describe everything on stage (except props and actors), used to represent the time and place where action is occurring, for example, backdrops with painted scenes or three dimensional scenery, such as trees and fences.

Framed set pieces can be flats or anything else that has a frame around it. Traditionally flats have frames made from wood but polyvinyl chloride (PVC) pipe can be used if lightweight, modular, easy to assemble frames are required.

There are several different types of stage set pieces these include:

**Weight bearing scenery**

Chairs, tables, rostra (platforms or risers) and stairs are the most common weight bearing set pieces used on stage. (“Rostra” is the plural of “rostrum”).

**Platforms**

Stage platforms, or rostrum, usually consist of a timber frame with a plywood deck. The legs are bolted onto the frame with a cross and corner bracing for extra strength and stability. If the platform is particularly high, it will need a handrail and should be fixed to a wall for additional support and stability. Platforms can also be turntables or rotating platforms which are very useful for quick scene changes.

Platforms used by staging hire companies tend to have metal frames with metal decks, as they are easier to transport and erect in a hire situation.

**Stairs**

Stairs (sometimes known as treads in theatre) are generally used on stage to enable actors to access high platforms. Any stair higher than .75 metres should have a handrail for the support and safety of the actors. The two main parts of the stage stair are the ‘tread’ – the part you stand on, and the ‘riser’, the vertical part of the stair. Stairs also have a stringer, or carriage, which is the support which holds the treads together. Stairs must be well designed and comfortable for actors to use. Each tread (step) should be the same height and be deep enough for the actors’ feet to fit well. Actors often use steps in low light, so it is very important that they are safe.

**Non-weight bearing scenery**

Examples are flats and paintings attached to walls.

**Flats**

A flat is a fake wall which can be used to hold scenery elements, such as doors and windows. There are two main types of flats. Both types usually have a timber frame.

Soft flats consist of a frame covered with muslin or canvas and are painted with a substance called sizing, which tightens the material and makes a good waterproof surface on which to paint.

Hard flats (sometimes known as Hollywood flats) have a frame covered with lightweight wood, such as three ply or particle board.

##### Soft scenic elements

**Draperies**: Large curtains designed to mask the sides of the stage or hung to create a certain look for the stage. They can have pictures or patterns on them to form a background. Draperies on the side of the stage are called ‘legs’. The draperies across the top of the stage are called borders (sometimes in event management they are called skirts or valances).

**Travellers**: A curtain that can be opened or closed. The proscenium drape (front or main curtain) provides a physical barrier between the audience and the stage, it is usually made from a velvet type material that matches the colour scheme of the venue. The proscenium drape can either close by being flown down from the roof, or it can be a traveller – a curtain which moves from each side to close in the middle.

**Scrim**: A scrim is a gauze cloth which is opaque when lit from the front, transparent when lit from the back or have images projected onto it. Scrims are used to create effects, such as a dream sequence, or to allow the audience to see through the wall of a building.

**Drops**: These large unframed pieces of material can be used to frame the stage. They usually have weights or battens in the bottom of them to help them hang square to the floor. Some drops have scenes painted on them as the ‘backdrop’ for the scene.

**Cyclorama** or ‘cyc’: Refers to the drop on the back wall of the stage, it is usually made of canvas or muslin. It is hung flat or 0% fullness (traditionally stage curtains are hung at 50% fullness) and is usually white in colour. It is mainly used for lighting and projection purposes. When pictures of scenes are painted onto the ‘cyc’ it is called a backdrop.

##### Furniture and other set props

Set props are props attached to the set, or props which function as part of the scenic design. Hand props are used directly by the actors. Stage furniture consists of tables, chairs, lounges, cupboards and anything needed to set the time and place of the scene. If the play is set in a factory, machinery would be part of the stage furniture. Furniture used for stage plays is often specifically constructed as it needs to accommodate the size of the stage, the rake of the stage and be easily transportable. Small and community theatre companies may purchase or hire ready-made furniture to reduce the cost of constructing theatrical furniture.

##### Types of venues

A large variety of venues is used in the entertainment industry. As the Entertainment industry is so varied, different styles of venue can be successfully used, such as a traditional theatre or an exhibition hall.

##### Theatre

**Proscenium arch**

The traditional stage used in theatre is a proscenium arch stage. Quite often a proscenium arch stage is an ‘end on stage’. That is, the acting area is contained at one end of a box like space and the performance is viewed from one basic direction. Aprons are often added to the front of proscenium arch stages to give the audience a feeling of closer contact with the audience.

The advantages are that it suits the shape of many buildings and large numbers of people can fit into the venue. Actors can enter from the wings on the side and not be seen before their entry.

A disadvantage is that the audience are seated a fair distance from the stage so people at the back of the theatre don’t get as good a view. A proscenium arch stage is less intimate than a thrust stage or theatre in the round.

**Thrust stage**

A thrust stage protrudes into the audience on three sides. It allows the audience to see the action from a number of different angles. It is more intimate than a proscenium arch stage as the audience is not looking at the performance through a frame. It still has a back wall or ‘cyclorama’ wall to project onto or use for scenery. The other purpose of the back wall is to give performers a place to enter the stage unseen from the audience. An arena stage is similar but doesn’t have a back wall; therefore, entrances are often made from underneath the stage or from the audience area.

**Theatre in the round**

This is the most exposed stage for actors. They can be seen from all angles and have to take care not to turn their backs on each section of the audience for too long. Scenery and props have to be designed with great care as they can quite easily block the audiences’ view of the actors. Lighting is also quite difficult as the lights have to be angled in such a way as not to shine in the audience’s eyes.

##### Stage types

There are a number of different types of theatre stages. Some are intimate and good for small audiences such as ‘In the Round’, while others are better for large scale musicals, such as proscenium stages.

**Proscenium**

A proscenium or proscenium arch stage is a framed stage and is one of the most common types of stage. The stage is higher than the closest rows of the audience and the edge of the stage doesn’t protrude past the curtain line. The audience sits directly in front of the stage and looks through what is called the fourth wall (an invisible wall through which the audience can see into the actor’s world). Proscenium stages are sometimes called picture frame stages because the audience looks through a frame at the play. Click the link to [Stage Types – Proscenium Arch](https://theatredesigner.wordpress.com/theatre-design-101/stage-types-proscenium-arch/) for more information and diagrams.

**In the round**

This type of stage leaves actors exposed to the audience from all sides and is sometimes known as an Arena stage (imagine a stage set up in the middle of a football field). This staging design poses quite a few problems for set and lighting designers as large set pieces must not block the audience’s view and the lighting designer has to angle the lights to prevent the lights shining directly into the audience’s eyes. Actors have to take care to constantly change where they are facing to avoid excluding parts of the audience from direct visual contact. With this type of staging the audience will usually be on tiered seating to enable a better view of the stage. Click the link to [Stage Types – Theatre in the Round](https://theatredesigner.wordpress.com/theatre-design-101/stage-types-theatre-in-the-round/) for more information and a diagram.

**Thrust Stage**

A thrust stage is similar to a proscenium stage but with the addition of an extra piece of stage thrust out into the audience. A thrust stage is sometimes known as an ‘Apron’ stage. A thrust stage can be small, only going a little way out into the audience (about one metre), with just enough room for an announcer to address the audience prior to the show. A Catwalk stage for a fashion parade is a good example of a thrust stage which is deeper than the original stage.

Some thrust stages don’t have a proscenium arch at all and this limits the scenic elements that can be used. This type of staging allows the actors to have much closer contact with the audience as the audience is able to view the performance from three sides making it more three dimensional. Set and lighting designers have to be careful with their scenery and how their lights are focused to avoid interfering with the audience’s view of the play. Actors also need to take into consideration the audience who are watching from the sides as well as the front. Click the link to [Stage Types – Thrust Stage](https://theatredesigner.wordpress.com/theatre-design-101/stage-types-thrust/) for more information and diagrams

**End on stage**

An ‘End On’ stage is where all of the audience looks at the stage from the same direction. This is a very efficient type of stage as it fits well with the shape of most buildings and is easy for set and lighting designers to work. Actors only have to worry about facing in one direction to have visual contact with the audience. It is similar to the proscenium stage but without the frame effect of the proscenium arch. Quite often the seating will be raked up (tiered), allowing the audience a clear view of the stage.

**Transverse stage**

A transverse stage, also known as a traverse stage, divides the audience into two groups by stretching from one wall to another. It is similar to a catwalk stage but lacks the back wall area of a catwalk. Like ‘In the Round’ stages it is a very intimate type of staging and suits confrontational type plays. Click the link to [Stage Types – Transverse Stage](https://theatredesigner.wordpress.com/theatre-design-101/stage-types-traverse/) for more information and diagrams

**Marking out the stage**

Many plays are rehearsed in a different venue to where they are eventually performed so it is very important for the stage area to be ‘marked out’ for rehearsals. The stage manager (SM) or deputy stage manager (DSM) is responsible for marking out the stage during rehearsals. Prior to the start of the first rehearsal the SM uses ‘mark-up’ tape to mark out the boundaries of the stage area and where each set element will be placed. The SM will use the scale floor plan provided by the Set Designer to accurately mark out where each set piece will be located. During later rehearsals, performer positions will also be marked out and this is particularly important if the play will be held in a theatre which has traps, revolves and lifts.

When the play rehearsals move to the performance venue, the floor is marked out again to enable the set builders to know where to place set elements and scenery.

A good tape for marking up is electrical insulation tape as it is available in different colours. This is preferred to paper (masking) tape or ‘Gaff’ tape as paper tape decomposes and is hard to remove, and Gaff tape can leave substantial amounts of adhesive behind.

##### Knots used during staging

**Parts of the knot**

**Standing end** - the end of the rope not used in the knot
**Standing line** (or part) - the long middle part of a rope not in the knot.
**Bight** - bend, loop or curve in the rope that does not cross back across itself.
**Loop** - a bend in the rope that crosses itself, in other words makes a full circle.
**The bitter end** - the end of the rope that is tied off.

There are apps you can get on your hone for learning how to tie knots or you can go to websites such as Animated [Knots](https://www.animatedknots.com/) <https://www.animatedknots.com/>

**Examples of knots**

**Bowline**

The bowline is a non-slip knot which is used to put a loop in a rope - generally at the end of the rope - and can be tied so that it forms a non-slip knot around an object.



**Clove hitch**

A clove hitch is used to attach a rope to a beam, batten or post and is useful anytime you want to tie a rope at right angles to a fixed object. To make the knot safer a half hitch is used to finish it off. It is a very common knot for theatre work, but it can jam and be hard to undo.



**Half-hitch**

A half hitch is used to attach a rope to a beam or post. This knot isn’t as strong as a clove hitch so the rope is passed around the beam again and secured with a second half hitch to make it stronger. This is then known as a ‘round turn and two half hitches’. This is a very good knot for attaching a rope to a bar, as it does not jam.



**Reef knot**

The reef knot is a binding knot used for tying the ends of a rope around a parcel, bandage or the neck of a sack. It is only secure if it is pressed tightly against the object it is binding, and it should not be used for any other function as it slips easily and can undo if the rope or the knot is pulled the wrong way.



**Rolling hitch**

The rolling hitch is used for tying one rope to another so that it pulls at an oblique (sloping) angle. It is strong and easy to untie even when tight or wet. It is used when an adjustable loop is needed, for example by campers to secure guy ropes around tent pegs.



**Truckies hitch**

The truckies hitch is used as a rope tackle when a load needs to be tied down tightly. It uses a loop as a pulley so the tension on the rope can be increased threefold. It is best used with artificial fibre ropes as it causes a lot of friction against itself when it is tightened.



**Overhand knot**

This is a very simple knot and is sometimes called a half or thumb knot. It is an easy way to stop the end of a rope going through a pulley and is also used to stop the ends of a rope fraying (this is much quicker than whipping). This knot can be dangerous, as if left in a rope, it weakens the rope by 50% and can also be very hard to undo when wet or tight. It is used as part of more complex knots, for example, the reef knot is actually two overhand knots (of opposite lay) on top of each other.



**Figure of eight knot**

In theatre the single figure of eight knot is put at the end of the rope to prevent the rope going through the pulley. The double figure of eight knot is used to make a single loop in the end of a rope. It works particularly well in artificial fibre ropes, and is easy to untie, even if it is tight or wet, and so is popular for abseiling and rock climbing.





**Whippings**

Whippings are used to stop the end of the rope from fraying and are particularly useful for natural fibre ropes. A thin twine is tightly wrapped many times around the end of the rope. Most artificial fibre ropes have the ends sealed with a hot blade (with the exception of very large diameter artificial ropes).



**Rope seizing**

Rope seizing is used to bind ropes together or bind a rope to an object without damaging the rope. It is similar to whipping and uses the same principles.



##### Floor types

**Floor cloths, cladding**

A floor cloth is a sheet of heavy duty canvas (usually duck) that can be painted with a design or picture. It is used primarily to muffle the sound of the actors’ feet and to give better traction. It is most commonly fixed to the floor with strong staples. Floor cloths are stretched, then primed, and are usually painted with acrylic or latex paint. They are finished off with a clear coat of urethane sealer.

When the set building crews are instructed to clad the stage, it usually means they must cover the stage floor with Masonite, vinyl or other floor covering material.

**Carpet**

Carpeted stages are sometimes used in conference centres and function rooms, particularly where the stage is a permanent or semi-permanent fixture. The stage can be carpeted with the same carpet as the rest of the room which allows it to blend in well. Carpet has sound absorption qualities, which can be an asset in corporate work. Staging companies hire out carpeted rostra (small stages) for exhibitions and trade shows.

Stages are sometimes carpeted in theatre for specific plays. The designers may make the decision, for example, to have carpet in a family living room if they are looking for a particular effect. Carpet is used on stage for its sound absorption qualities, as stage rostra (platforms for actors to stand on) can be very resonant, and this can act like a giant drum, magnifying actors’ footsteps. Care has to be taken with carpet on stage as it can be a fire hazard if the carpet hasn’t been treated with a fire retardant chemical such as ‘Pyroguard’ or ‘Roscoflamex’. Carpet made of wool has natural fire retardant qualities.

**Masonite**

Masonite is a type of hardboard made by blasting sawmill waste into long fibres with steam, and then forming them into boards. Masonite is quite flexible and reasonably light weight and inexpensive. Masonite is often placed over the sub floor to protect its surface. Some venues that have a Masonite surface over their sub floor will allow it to be nailed and screwed as it is not too expensive to replace when the surface is damaged.

**Vinyl**

Vinyl flooring is used extensively in dance but it is also used in corporate work and in theatre. For example, some dance floors have a wet look finish, and are recommended for display work. Vinyl floors can have the appearance of a timber floor. These floors are often used for dance floors in clubs as they have the expensive appearance of a wooden floor, with the easy care of a vinyl floor.

Many professional stage floors are covered with a heavy duty vinyl. Vinyl floor covering comes in different colours to suit the user, but black is the most common as it is non reflective, which is important for lighting. Metallic colours such as aluminium and titanium are very effective for industrial scenes. One of the disadvantages of vinyl floors is that they can become pitted, punctured or stretched by the wheels of road cases, chairs, ladders and tables.

**Stage flooring**

Most stage floors (or decks) in theatres are hardwood, which is a good general purpose surface. If the stage is used for a variety of different purposes additional flooring material is brought in to cover the existing floor. The use the stage will be put to affects the choice of flooring (imagine tap dancing on carpet). A variety of products are used to cover the floor, from non-slip textured floors to painted floorboards. When the floor is covered, the original floor is known as the ‘subfloor’.

The specific purpose for the flooring affects the material, its construction technique and the material it’s made from. Large outdoor concert stages are generally made in sections, with wooden or metal decks and metal framework, as they are designed to be modular and relatively easy to assemble. Large theatre productions prefer to manufacture their stage floors to suit the set design of the play. They often remove the existing stage and put in an entire new, purpose-built stage.

**General principles for designing stage floors include:**

It must be certified by an engineer as suitable for weight bearing.

It should be easily transportable, as the stage may be made at a workshop and then assembled in the theatre.

It should have an appropriate surface for the activity being undertaken.

**Dance floors**

A sprung floor, sometimes known as a floating floor, is a floor which gives the dancer some bounce, and is one of the best floors for dance. There are two main types of sprung floor:

**Basket weave** is a woven wood floor covered with plywood, with a glued vinyl covering. It is quite flexible and effective for dancers.

A **rubber** sprung floor has Masonite on the bottom, foam rubber square cushioning and a plywood top. Its only limitation is that it cannot take a lot of weight and scissor lifts and other construction machinery can damage it.

Ordinary wood floors are usually too slippery and inflexible for most dance styles. Hard floors increase the risk of injury, including ligament and muscle strain, fatigue, shin splints, bad ankles, back pain to falls. There are several different vinyl floor coverings available, from very thick vinyls which act like a sprung floor, to thinner and harder vinyls which have a wood finish and are suitable for tap dancing. Some companies make dance floors which are reversible. This provides versatility, as the floor can be installed with a percussive surface for tap, Spanish or Irish dancing, or a softer surface for ballet.

### Safe work procedures and practices

**House keeping**

Working on stage can be quite hazardous. Working in low light conditions can lead to accidents. The stage area can become cluttered and therefore quite dangerous when constructing sets and bumping in a show as many people are working in a very small space. When equipment is being moved, the area should be kept clear to avoid trip hazards.

Accidents can slow down the bump in and affect the wellbeing of the crew, both physically and mentally. Schedules can be adversely affected if accidents occur and the event may not be able to start on its scheduled date. This leads to great financial losses to the event organisers and may cause scheduling problems where production companies have other events scheduled after the current production.

Some basic tips to keep the area safe are:

* put rubbish in the bin.
* store tools in the correct place when not in use.
* only purchase enough material for the actual job. This saves storage space.
* clean up after each work session. This includes sweeping the floor and ensuring all screws and nails are picked up. Sawdust is a fire hazard so it is essential that it does not build up in the venue.
* Ensure that there are safe working lights in all areas

##### Safe manual handling procedures

Manual handling poses problems in the theatre environment as there is limited room and often equipment has to be lifted in fairly confined spaces.

The following information is from SafeWork NSW.

There is no longer a prescribed maximum weight limit for lifting for either men or women.

The weight of the load needs to be considered in relation to a number of other risk factors such as the:

* actions and movements
* working posture and position when lifting
* duration and frequency of manual handling
* location of loads and the distances moved
* characteristics of the load

Light loads can still be a problem if, for example, they are lifted incorrectly or if they are lifted in an environment that is unsafe.

The National Code of Practice: Manual Handling indicates that the risk of injury increases when:

* lifting weights of more than 4.5 kg while seated.
* lifting weights above the range of 16-20 kg (weights over 55 kg should not be lifted without mechanical assistance or team lifting).
* pushing, pulling and sliding objects that are difficult to move.

Special protections apply to young workers in the workforce. Find out more information at [SafeWork NSW Young workers eToolkit](https://www.safework.nsw.gov.au/resource-library/young-workers-toolkit).

Further information can be accessed from [SafeWork NSW Manual Tasks](https://www.safework.nsw.gov.au/hazards-a-z/manual-tasks)

**Safe lifting techniques**

Evidence to date does not support lifting technique training on its own as a control for manual tasks risks. Other risks include forceful exertion, repetition, awkward posture, vibration and the duration of the activity.

There are some good practices however to reduce the risks when lifting. Place your body as close to the load as possible. This helps by keeping your centre of gravity over your feet and keeps back strain to a minimum.

Bend at the knees, not the hips or back. Bending your knees allows you to lift with your legs and not your back.

Before you lift, ensure you have a good handgrip. If the load does start to slip, let it go, as catching it will put an enormous strain on your back.

When lowering the load, again bend the knees. Otherwise you can put unnecessary strain on your back.

**Use of personal protective equipment (PPE)**

Personal Protective Equipment (PPE) covers a large range of equipment for individual safety and protection, from head protection through to foot protection. The PPE needed is specific to the task at hand and PPE needs may change as the task changes.

**PPE**

**Hats**: Hard hats are worn when there are people working at height. They are to protect the worker below in case anything is dropped from above.

**Safety glasses**: Designed to look and feel like everyday glasses but are manufactured from impact resistant material to protect the eyes from flying debris. Safety glasses have side pieces for further eye protection. Safety glasses must always be worn when working with power tools, wood and paint, as there is the possibility of particles of wood, paint and dust entering the eyes.

**Safety goggles**: Safety goggles are worn when there is a danger of particles hitting the eyes from all directions and when working with chemicals as they protect against splashes and fumes.

**Gloves**: Gloves protect the hands from injuries from ropes, chains, burns and chemical damage. There are many different types of gloves used for PPE, depending on the application. Waterproof gloves are needed for cleaning and chemical work. In fact, some chemical work requires specific types of gloves which are resistant to the chemicals used. Heavy duty leather gloves are used for rigging work and manual handling.

**Masks** (breathing protection): Masks are used where there is a danger of inhaling particles or fumes, as this can occur when spray painting, mixing powdered paints or when sanding wood or painted surfaces. Another type of mask that is worn in the theatre workshop is the welding mask, a full face mask that protects the face and the eyes from burns by sparks, molten metal and radiation.

**Ear protection**: A theatre workshop can be a very noisy place so whenever power tools are being used ear protection should be worn. This can be in the form of ear plugs or earmuffs. Some better quality earmuffs have a noise cancelling system that allows some sound through, but then cuts out all sound when the noise level reaches 80db. These help with voice communication.

**Clothing**: High visibility and reflective clothing such as vests, t-shirts and jackets are worn to ensure the worker can be seen. This is particularly important during a bump in, where there is machinery being used and there is a low level of lighting. Leather aprons or coats are worn in workshops for body protection, and these are essential when welding. Overalls are often worn in workshops to protect the worker from paint, burns and abrasions.

**Work** **boots**: Leather shoes or work boots should always be worn when working on stage. The actual work being performed affects the type of protective boot selected. Puncture resistant boots are appropriate where there is a chance of standing on protruding nails, staples or screws. Steel capped boots are appropriate where there is a chance of objects being dropped on the feet. Rubber boots are worn in a wet environment.

##### Safe work methods and procedures for using tools and equipment and hazardous waste

Power tools should only be used after proper training has been completed. Before using any power tool, the technician should become familiar with the manual, so that the technician is aware of the limitations of the tool.

Safety tips for power and hand tools:

* Physically inspect tools before use. Ensure the electric lead has a current test tag. If the equipment appears damaged or has an out of date tag (or no tag), it should be reported to a supervisor and not used.
* Take care with power cord leads. Always carry the appliance by the body, not by the lead.
* Don’t use power tools in wet conditions.
* Never alter or remove any machine guards.
* Only use power tools with their three pins, or a double insulated plug correctly and firmly fitted to a power supply.
* Always follow correct storage procedures for tools.

**Safety tips for dealing with hazardous waste**

Chemicals cannot be tipped down the sink. They have to be stored in suitable containers and removed by hazardous waste collectors. When handling hazardous waste appropriate PPE should be worn, such as protective clothing, masks, gloves, goggles and gum boots. Professional hazardous waste removal companies can be employed to remove the waste, which means the job is left to trained professionals.

##### Safe use of detergents and chemicals

Chemicals should not be used until the Material Safety Data Sheet (MSDS) has been read. This sheet provides details on the correct use of the chemical, the handling techniques, and first-aid instructions in case the chemical is inhaled, swallowed or comes into contact with skin or eyes. Chemicals should be clearly labelled and stored appropriately.

**Types of chemicals found in theatres**

**Paints, pigments, inks and dyes**

These are used in set and prop construction, costume making and scenery painting. Care needs to be taken handling and storing paints and pigments as they can be poisonous. Therefore, protective clothing should be worn, including gloves. As even small amounts of paints are hazardous, it is important not to eat or drink in the painting area, and to wash hands thoroughly when work is finished. Paints, pigments, inks and dyes are also flammable, so fire prevention measures should be taken, for example, no naked flame in the workshop (including cigarettes).

**Plastics**

Plastics are used in theatre for making castings, costumes and set elements. Resins, polyurethane and polyesters are all used, and these can have negative adverse effects on workers’ health if correct PPE isn’t worn. Polyurethane resins can give off a cyanide gas when heated and epoxy resins can cause skin irritations. When plastics are cut, often a hot wire blade is used as the fumes from this heating can cause skin, respiratory tract and eye irritation.

**Chemical spills**

Chemical spills need to be reacted to quickly. The MSDS give instructions on how to clean up a spill.

Some basic steps on handling a chemical spill are described below:

* Alert other workers that there has been a spill (tell them what type).
* If the spill has come into contact with a person’s skin or clothes, remove the clothes and flush the area with water for 15 minutes. Clothing must be thoroughly washed before being worn again.
* Flammable chemicals must not be washed down drains and all personnel working in the venue must be alerted if there has been a flammable spill.

**Detergents**

Detergents are used mainly for cleaning and must be treated as any other chemical. They need to be stored in a secure area and their MSDS must be readily available. Strong detergents can burn or irritate human skin as they are quite alkaline and dissolve the natural oils in our skin. If detergent has been spilt onto skin, the affected area should be flushed with water for 15 minutes.

**Ventilation systems**

Workshops must be fitted with adequate ventilation systems as cutting, sanding, drilling and sawing can release toxic fumes and dust into the air. Sanding previously painted props and set elements is particularly dangerous as the fine particles of paint are released into the air and can be hazardous to health.

Spray painting should be performed in a spray booth and the worker must wear appropriate PPE including a mask, goggles and protective clothing.

Carpentry work causes the production of sawdust so extraction fans or ventilation systems must be used.

**Fire danger**

There is a lot of flammable material to be found on a stage as the set is usually constructed from wood and there are curtains and other drapery on the stage, plus a lot of very hot lights. ‘Panthers Leagues Club’ had a very expensive fire in 2003 and it was thought to have been caused by a light being placed too close to a curtain. For safety reasons, all props and drapery used on stage should be treated with a fire retardant, which causes the material to smoulder instead of bursting into flame. Theatre supply companies have a number of products for retarding fire in wood and fabric.

### Trouble shooting and problem solving

All workers need to consider the potential effect of common problems that might arise during operations for a live performance or event and the potential impact on production and performance schedules.

You should work within your cope of responsibility to either rectify the problem or refer it on to the appropriate personnel. Never assume that someone else will just deal with the matter.

If equipment is not working correctly, troubleshooting procedures need to take place. Often the problem will be a damaged lead or connector which can usually be quickly rectified.

If this is not the case, check the company equipment log to see if this piece of equipment has any know faults and fixes. If that does not help, check the equipment manual, sometimes a problem may be a simple thing that has been overlooked. You can also look online to see if other’s have had the same problem with the equipment. Also check with workplace colleagues. Some equipment can be a little ‘temperamental’ and other colleagues may be able to show you how to fix it.

Equipment malfunctions can cost a lot of time at a bump in and can cause considerable stress to the technician. Sometimes, if it is within your level of authority, it is just quicker to get another piece of equipment from stores to substitute the malfunctioning piece of equipment. It is important to log any equipment faults, otherwise, you may be facing the same problem at the next event. If a piece of equipment gives you an electric shock, do not continue using it, label it and log it and find a substitute piece of equipment.

Workplaces will usually have documented processes for recording and reporting incidents, issues and challenges. Instruction, maintenance and repair manuals should be kept in a safe place as should logbooks and inspection record sheets showing complete details of all inspections, tests, repairs, replacements and modifications carried out on equipment.

# Key terms and concepts

You can use the following information to revise the key terms and concepts from this unit of competency. Perhaps you could:

* Copy the table into your own file, remove all the key terms, then fill in the blanks (without peeking at the original file) with your own answers.
* Copy the table into your own file and remove the definitions. Write a definition in your own words – it doesn’t have to word perfect but should show you understand the concept.
* Add additional words and definitions as you work through your revision notes and activities. Add a row to the table by pressing ‘tab’ in the last box of the table.
* You could add an example of this term or concept which is relevant to the entertainment environment. If the key term was ‘safety hazard’ your Entertainment Industry example might be ‘double adaptors, piggy-back plugs, un-switched power boards and the daisy chaining of power boards is prohibited’.

|  |  |
| --- | --- |
| Key term or concept | and Definition |
| Act change | A change of either scenery, lighting, costume, props or other technical elements between acts |
| Apron | Stage floor between the front edge of the stage and front curtain |
| Backdrop | Painted canvas or muslin curtain, hung from a batten, forms part of the scenery |
| Batten | A metal pipe on which stage elements (but not lights) might be hung |
| Blacks | Curtains (black) at the sides and back of the stage |
| Bridge | Walkway above the stage, also known as the catwalk |
| Bump in | Moving into a venue and setting up |
| Bump out | Moving out of a venue post production |
| Come down | The curtain is lowered at the end of the performance |
| Cue | Instruction given to technical operators to execute a lighting, sound or sound change |
| Cyclorama | Wall or curtain surrounding the back and sides of the stage |
| Downstage | The area of stage closest to the audience |
| Dress rehearsal | A full rehearsal in costume  |
| False perspective | Scenic design technique that makes a building or set appear larger than it actually is |
| Flats | Flat pieces of theatrical scenery which are often wooden frame covered with canvas, muslin or plywood, and painted with a picture of a scene. |
| Floor lay up | The process of preparing a stage floor. This often involves covering the existing floor with vinyl, carpet or Masonite. |
| Floor pockets | Hidden electrical sockets on the stage floor |
| Gauze | Loosely-woven cloth on which a scene is painted. When lit from the front the painted scene is seen; when lit from behind it appears transparent |
| Hazards | Anything that has the potential to cause injury or illness or damage. |
| Knots | A variety of knots can be used in theatre for a variety of purposes such as hanging drapes and general rigging work. These include bowline, round turn and two half hitches, clove hitch, half-hitch, reef knot, rolling hitch, truckies hitch, overhand knot, figure of eight knot, single, double, whippings. |
| Manual handling | Using human force to move or support a load, including moving, lifting, putting down, pushing, pulling or carrying. |
| Marking out | The stage is marked with tape to indicate where the stage elements such as scenery or furniture will be placed |
| Off stage | Parts of the stage or surrounds the audience cannot see |
| On stage | Any part of the stage which can be seen by the audience |
| Production personnel | Production personnel are the people directly involved with the staging of an event and may include directors, designers, technical specialists, stage managers, production managers, venue managers |
| Prompt book | A copy of the script with notes and cues |
| Prompt side | Generally the left side of the stage as you face the audience |
| Props | An abbreviation of the word ‘property’. These include items or articles used by performers or actors other than scenery and costumes. For example, a cigarette lighter carried in the actor’s pocket is a prop. |
| Proscenium | Traditional picture frame type of stage, usually with a curtain. The proscenium arch is the opening of a proscenium stage. |
| Rear of house | The backstage area and areas used for storage |
| Safety curtain | Fireproofed material curtain usually with a metal frame, covering the entire proscenium opening; acts as a firebreak between the stage and the auditorium. |
| Set assembly | The process of putting together the set as required in the stage plan and mark up. This is also known as ‘dressing the stage’. |
| Set pieces | Set pieces may include framed scenery such as flats, profiles, doors and windows |
| Spike marks | Markings on the stage that indicate where props, furniture andSometimes performers are to be placed |
| Stage area | The part of the stage the actors perform on that can be seen by the audience. |
| Stage geography | The stage is divided into a number of sections, allowing the director to indicate where actors should position themselves or scenery be placed. They are up stage and down stage, stage left (prompt side), stage right (opposite prompt), centre stage. |
| Stage left | The left hand side of the stage when facing the audience |
| Stage machinery | Stage machinery includes fly systems (either electric or counterweight), trucks, revolves, traps, elevators and safety curtains. |
| Stage plan | The stage plan is a diagram showing the layout of the stage including lighting bars, the proscenium arch, orchestra pit, stage wings and other fixtures. This plan is used as a template by the designers to plan individual productions. |
| Stage right | The right hand side of the stage when facing the audience |
| Stage types | There are a number of different types of stages. These include proscenium arch, thrust, in the round, end on, created, found spaces. |
| Staging personnel | Staging personnel are the people directly working with the stage. They may include production manager, technical manager, stage manager, set designer, set builder, prop builder |
| Technical rehearsal | The first time the show is rehearsed in the venue, with lighting, scenery and sound. A ’dry tech’ rehearses the integration of lighting, scene changes etc with the crew but no performers. A ‘wet tech’ describes a full technical rehearsal that includes all the performers and all technical elements. |
| Transition | Changing of performers, sets, lighting and sound from one scene to another |
| Upstage | The part of the stage furthest from the audience |
| Wings | The sides of the stage, out of sight of the audience; performers and props remain in the wings until required or brought on stage.  |
| Work Health and Safety | Procedures designed to keep employees, visitors and customers safe and accident free, healthy and secure while at a workplace. |

# Activities

1. Place the roles (below) which match the role description into the correct line of the table.

|  |  |  |
| --- | --- | --- |
| Roles |  |  |
| set builder | set designer | technical manager |
| prop builder | stage crew | director |
| stage manager | scenic artists | production manager |

|  |  |
| --- | --- |
| Role Description | Role |
| Oversees all technical aspects of the play.Coordinates set builders, lighting technicians and sound technicians during ‘bump in’. |   |
| Selects cast for the play.Guides actors during the rehearsal of the play.Interprets the script. |   |
| Draws sketches of the set.Uses a computer aided drawing program to make scale plans of the set.Interprets the director’s ideas on the physical appearance of the set. |   |
| Organises stage crew.Deals directly with directors.Calls the show.Keeps the prompt book up to date. |   |
| Has an ability to follow written and verbal instructions.Is a good team worker.Moves props, scenery and set elements on and off stage. |   |
| Reads scale drawings of the set and makes them a physical reality.Has a range of skills including carpentry and metal work.Is often a tradesman with an interest in theatre. |   |
| Excellent administrative and business skills.Coordinates production schedules.Assists with the resolution of conflicts between production areas. |   |
| Has skills in painting and decorating.Paints backdrops and scenery from plans provided by the set designer. |   |
| Researches the time period and geographical position of the play.Follows plans from the set designer.Constructs, hires or buys props for the play. |   |

1. According to [SafeWork NSW](https://www.safework.nsw.gov.au/home) there are a range of hazards associated with the arts and recreation services industry.
	1. Describe the difference between a risk and a hazard.
	2. Choose three of the ‘[common hazards’](https://www.safework.nsw.gov.au/your-industry/arts-and-recreation-services) which might apply to this ‘staging’ module and make a dot point list (for each) of the appropriate hazard and risk controls.
2. Provide a short answer for each of the following questions.
	1. What is another name for stage curtains?
	2. ‘Props’ is an abbreviation for what?
	3. What is name of the metal pipe that extends from side to side of the stage from which curtains and other stage elements are hung?
	4. Describe a ‘raked’ stage?
	5. What is a ‘trap’ room?
	6. Research the French term ‘Trompe L’oeil’. How would this be used in staging?
	7. Explain the term ‘upstage’?
	8. What is a ‘wet tech’ rehearsal?
	9. Describe the term ‘cyclorama’?
3. Test your knowledge of ropes and knots. Answer ‘true’ or ‘false’ for each of the following statements.

|  |  |  |
| --- | --- | --- |
| Statement | True? | False? |
| The bowline knot is rarely used in theatre |  |  |
| A reef knot is safe in any application |  |  |
| A truckies hitch is used to tie down a load tightly |  |  |
| A half hitch is not as strong as a clove hitch |  |  |
| Rope seizing is the term used when the rope has become jammed in the pulley |  |  |
| A single figure of eight knot is put at the end of the rope so the rope doesn’t go through the end of the pulley |  |  |
| Whipping is what is done to the rope to cause the end to fray. It makes it easier to undo |  |  |
| Leaving an overhand knot in a rope is a good idea as it strengthens the rope |  |  |
| A bowline knot is a good way to make a non-slip knot around an object |  |  |

1. There are several types of technical rehearsals. Write a short explanation of each of the following. The table will grow as you enter information.

|  |  |
| --- | --- |
| Type of technical rehearsal | Description  |
| Paper tech |  |
| Dry tech |  |
| Cue-to-cue |  |
| Dress rehearsal |  |
| Open dress rehearsal |  |

1. The Department of Industry, Innovation and Science provides guidance on [how to manage risks in the workplace using a systematic process](https://www.business.gov.au/risk-management/health-and-safety/how-to-make-your-workplace-safer).
	1. Provide a definition for each step in the process.

A systematic process for managing risks in the workplace

|  |  |
| --- | --- |
| Steps |  |
| Identify hazards |  |
| Assess risks |  |
| Control risks |  |
| Review control measures |  |
| Record and report safety issues |  |
| Support return to work |  |
| Make your workplace healthier |  |

1. Backstage can be a hazardous place. It is the responsibility of the crew and performers to know, identify, eliminate or at least minimise hazards. Identify examples of each of the following in an entertainment environment. Suggest ways of eliminating or minimising the risk from each. The table will expand as you enter information.

|  |  |  |
| --- | --- | --- |
| Type of hazard | Example | How to minimise or eliminate the risk |
| Electrical hazards |  |  |
| Slip, trips or falls |  |  |
| Manual lifting hazards |  |  |
| Mechanical hazards |  |  |
| Chemical hazards |  |  |

1. Find examples of the type of safety signs you would see in an entertainment environment. Look for signs which:
	1. indicate you must **not** do something (stop signs: white background, red circle with cross bar)
	2. warn you of a danger (caution signs: yellow background, black symbol)
	3. provide emergency information (green and white)
	4. indicate what you must do (mandatory signs: circle with a blue background and white symbol)
2. ‘Etiquette’ – the code of ethical behaviour among the members of a profession - is often documented within an organisations ’Code of Practice’. There is a standard of backstage etiquette in live theatre production which applies to crew members, as well as to performers. Write around 100 words describing some features of the ethical behaviour or etiquette expected when working in this industry.
3. Locate at least five examples of housekeeping activities which might take place either backstage or onstage. Describe why this housekeeping is important.

|  |  |
| --- | --- |
| Housekeeping practices | Why this housekeeping is important |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

1. Identify at least five examples of personal protection equipment (PPE) which might be used in a staging environment. Explain where and why you would use this equipment.

|  |  |
| --- | --- |
| Personal Protective Equipment  | Where and why used |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

1. Identify at least five aspects of the staging for this production. You might mention props, scenery, backdrop, manual handling or other staging elements. Explain any particular issues which might arise during the staging of the production.



‘[Drama at University of Ghana 05.jpg](https://commons.wikimedia.org/wiki/File%3ADrama_at_University_of_Ghana_05.jpg) found on [commons.wikimedia.org](https://commons.wikimedia.org/wiki/File%3ADrama_at_University_of_Ghana_05.jpg#/media/File:Drama_at_University_of_Ghana_05.jpg). The copyright holder [Ohene okai](https://commons.wikimedia.org/wiki/User%3AOhene_okai) publishes the work under Creative Commons license [CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0). No changes made.

# Putting the theory into practice

The following questions are from [past years’ NSW HSC examination papers](https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/resources/hsc-exam-papers) for this subject. HSC exams are intended to be rigorous and to challenge students of all abilities. To better understand a question, you should look for key words and identify the aspect of the course to which these relate. You are then in a position to formulate your answer from relevant knowledge, understanding and skills.

All questions in ‘Putting the theory into practice’ are acknowledged © [2019 NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales.](https://educationstandards.nsw.edu.au/wps/portal/nesa/mini-footer/copyright)

## Multiple Choice

1. Who is responsible for coordinating the planning and budgeting of all aspects of a production to ensure that the creative vision is met?
	1. Stage Manager
	2. Artistic Director
	3. Technical Director
	4. Production Manager
2. During a drama performance, an actor carries their own chair onto the stage, uses it and removes it at the end of the scene. Which type of staging element is the chair?
	1. Prop
	2. Set dressing
	3. Piece of furniture
	4. Weight-bearing scenery
3. Which of the following is the most effective communication method for production personnel at an outdoor event?
	1. Megaphones
	2. Two-way radios
	3. Public address system
	4. Wired headset communication system
4. In the following diagram, which position on the stage is labelled X?



* 1. Upstage prompt side (PS)
	2. Downstage prompt side (PS)
	3. Upstage opposite prompt (OP)
	4. Downstage opposite prompt (OP)
1. A staging truck becomes stuck when being pushed into position during a scene change. What is the first step the stage crew should take to resolve the problem?
	1. Inform the stage manager
	2. Call extra crew for assistance
	3. Enter it into the maintenance log
	4. Leave it where it is and position the set around it
2. During a technical rehearsal, a large fixed set piece obscures the operator’s line-of-sight while operating a counter-weight fly system. What is the best solution?
	1. Move the set piece
	2. Move the fly operator to another location
	3. Clearly mark fly positions on the hand lines
	4. Assign a crew member to provide visual information
3. What is the purpose of a staging brace?
	1. To provide set decoration
	2. To support theatrical drapes
	3. To secure flown scenic elements
	4. To support freestanding scenery
4. Which of the following managers is responsible for calling the lighting cues from the prompt book?
	1. Stage manager
	2. Technical manager
	3. Production manager
	4. Front-of-house manager
5. The downstage legs on a table used as a set piece are longer than the upstage legs. What type of set design would this suit?
	1. Portable
	2. Ramp
	3. Revolve
	4. Traverse
6. Which of the following statements best describes a technical rehearsal?
	1. Lighting and audio cues and scene changes are rehearsed.
	2. Vision and staging cues and scene changes are rehearsed.
	3. All production elements are coordinated entirely by the director.
	4. All production elements are coordinated entirely by the stage manager
7. Which type of stage machinery uses counterweights?
	1. Revolve
	2. Fly system
	3. Automated tracking
	4. Elevated work platform
8. What is the most effective knot to use when permanently attaching drapes to a rigging bar?
	1. Reef knot
	2. Clove hitch
	3. Truckie’s hitch
	4. Figure of eight knot
9. The page shown is from a stage manager’s prompt copy.

Illustration from 2011 HSC Entertainment Industry exam



What information would the stage manager write on the pages shown?

* 1. Call times for cast
	2. Evacuation points for the cast
	3. Rigging positions for the lights
	4. Movement of the cast on and off the stage
1. In the theatre, to what does a dead black out refer?
	1. Stage lights out, specials on
	2. Stage lights out, show preset on
	3. Stage lights out, working lights on
	4. Stage lights out, working lights out
2. What staging element is used to mask off-stage scenery in the wings?
	1. Cycloramas
	2. Legs
	3. Scrim
	4. Teasers

## Questions from Section II

These questions should be answered in the suggested number of lines (handwritten) as it gives a guide to the length of your response.

Plan out your answer and key points before you commence writing

Question 1

* 1. Explain the importance of marking out a stage prior to bump in. (3 marks)

* 1. How could a stage crew be coordinated, prior to rehearsal, to position staging elements? (4 marks)

Question 2

1. Describe the role of the stage manager during a rehearsal. (3 marks)

1. A prompt copy is shown (over). Describe how the staging information in the prompt copy would be used during a performance. (4 marks)



Prompt copy from 2016 HSC Entertainment Industry exam

Question 3

* 1. What specific technical considerations should a director take into account when using a thrust stage for a musical performance? (4 marks)

* 1. How would these technical considerations differ if the stage were in-the-round. (4 marks)

Question 4

* 1. Outline the differences between a cyclorama and a scrim. (2 marks)

* 1. Describe the safe work procedures and practices relating to the installation of scenic elements above the stage. (4 marks)

Question 5

Use the stage plan shown to complete both parts of the question.



Stage plan from 2015 HSC Entertainment Industry exam

1. How would a stage crew use the scale given on the stage plan shown? (2 marks)

Question continues over

1. At the scene change, the large set piece waiting in the wings needs to be trucked on and placed at **A**.

Using stage geography, explain how this movement can be planned and executed. (4 marks)

## Questions from Section III

The Section III question in the HSC is worth 15 marks -

* there will be one structured extended response question.
* the question will have two or three parts, with one part worth at least 8 marks.
* the question will have an expected length of response of around four pages of an examination writing booklet (approximately 600 words) **in total**.
* You may be guided to answer different parts of a question in SEPARATE writing booklets.

## Questions from Section IV

There will be one extended response question in Section IV (15 marks) of the HSC. This will provide you with the opportunity to:

* demonstrate knowledge and understanding relevant to the question
* communicate ideas and information using relevant workplace examples and industry terminology
* present a logical and cohesive response

The expected length of response for questions in Section IV is around four pages of an examination writing booklet (approximately 600 words).

You should allow about 25 minutes for a question in Section III and the same for Section IV of the exam.

You will note that these questions usually require you to bring together knowledge from several areas of study/competencies to do justice to the answer.

In each of the following, map out your answer using post-it notes or a sheet of paper. Pay particular attention to incorporating a variety of aspects of your Entertainment Industry curriculum into the plan. Consider why we have included this question within this staging module and what other areas of study you would need to draw upon.

**Question 1**

A local theatre company has decided to produce a newly-written play.

* 1. What is the role and function of the producer during the pre-production? (5 marks)
	2. Describe the processes and procedures the production personnel would undertake during post-production. (10 marks)

**Question 2**

Students were asked to answer part (a) and part (b) of the question in separate writing booklets.

A professional theatre company is about to open its latest play for a three-month run in a large 1500-seat proscenium arch theatre.

* 1. Describe the duties of a front-of-house manager throughout the run. (5 marks)
	2. Describe the creative process and the staging operations that will be undertaken to prepare for the opening night of the play. (10 marks)

**Question 3 (15 marks)**

An industry trade show is to be held in a convention centre with a 1000 person capacity. The event includes keynote speakers on the main stage, audiovisual displays and supplier stands. Describe the technical requirements and safety considerations for this event.

**Question 4 (15 marks)**

A lighting designer has been approached to work on two different productions. The first is a small drama production in a 200-seat theatre with a thrust stage; the second is a musical in a 2000-seat theatre with a proscenium arch stage.

Compare the lighting techniques, personnel and equipment that the lighting designer would use to light both productions effectively.

**Question 5**

Use the information shown to answer parts (a) and (b).

An events company has been contracted to provide the staging elements for a community event at the local showground.

Staging elements include a portable stage, a roof structure supported by a truss, stage access stairs and a stage access ramp.



Illustration from NSW Entertainment Industry HSC examination 2016

* 1. Describe the risk management process that needs to be undertaken prior to this event. (7 marks)
	2. Describe the procedures necessary for the safe bump in and bump out of this event. (8 marks)

# HSC Focus Areas

For the purposes of the HSC, all students undertaking the 240 HSC indicative hours course in Entertainment Industry must address **all of the mandatory focus area** **content.**

The scope of learning describes the breadth and depth of the HSC Content and has been grouped together into key ideas/areas. The scope of learning describes the minimum content that must be addressed, and the underpinning knowledge drawn from the associated unit(s) of competency.

Entertainment Mandatory Focus Areas include:

* Audio
* Customer service
* Lighting
* Safety
* Staging
* Vision
* Working in the entertainment industry

The unit of competency associated with the focus area ‘Staging’ is [CUASTA301 Assist with production operations for live performances](http://training.gov.au/Training/Details/CUASTA301)

How to use the scope of learning for ‘Staging’ (which follows over).

* draw up your own mind map showing the connection between the various concepts listed; examples appear on the last page of this module
* use the key terms and concepts to add to your mind map
* add examples or case study prompts to show how the concept is applied in the entertainment working environment

The following information is taken directly from page 44 ff of [Entertainment Industry Curriculum Framework Stage 6 Syllabus (NSW Education Standards Authority) for implementation from 2020.](https://educationstandards.nsw.edu.au/wps/wcm/connect/82b1b2cb-f656-448a-9068-5716c4189897/vet-entertainment-industry-11-12-syllabus-based-on-CUAv4.1.pdf?MOD=AJPERES&CVID=) © [2019 NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales.](https://educationstandards.nsw.edu.au/wps/portal/nesa/mini-footer/copyright)

|  |
| --- |
| **production context** |
| * industry-accepted terminology and commonly used jargon in the entertainment industry:
* specific to staging and production operations
* variations across production environments/contexts and workplaces
 |
| * general scope of staging operations across different production contexts
 |
| * role and responsibilities of various personnel in relation to staging operations:
* creative:
	+ - director
		- designer
		- choreographer
* production:
	+ - producer
		- production manager (PM)
		- production assistant (PA)
		- stage manager (SM)
		- deputy stage manager (DSM)
		- assistant stage manager (ASM)
* staging:
	+ - stage manager
		- fly operator
		- mechanist
		- stage hand
* venue:
	+ - manager
 |
| * difference between and reasons for an in-house/venue crew and a production-specific crew, and the relationship between them
 |
| * lines of communication and reporting between personnel
 |
| * protocols for communicating with the customer/client, colleagues, a performer/presenter and a supervisor about staging operations:
* pre-production
* during production
* post-production
 |
| * documentation commonly used in staging operations:
* production plan
* stage plan
* prompt copy
* performance run sheet
 |
| * for each of these documents:
* purpose
* standard format(s) and common features
 |

|  |
| --- |
| **production context cont/d** |
| * content
* abbreviations, terms and conventions
 |
| * modifying/updating documentation:
* personnel with authority to modify/update
* processes
 |
| * importance of ensuring currency of version and the status of any amendment
 |
| * application of staging documentation to specific job roles and work tasks
 |
| * read and interpret staging documentation to obtain and convey information
 |
| * how staging requirements and operations vary across different:
* live performances and events
* indoor and outdoor venues
 |
| * interrelationship between creative and technical areas and the importance of collaboration and teamwork
 |
| * an understanding that various regulatory requirements apply across the entertainment industry
 |
| * examples of regulatory requirements applying to a variety of live performances and events to be considered when undertaking staging operations
 |
| **production operations** |
| * an understanding of what typically occurs during the operational phases of a live performance or event:
* pre-production
* production
* post-production
 |
| * staging requirements and tasks specific to each operational phase
 |
| * staging elements used in productions, including:
* furniture and other set items
* lighting equipment
* props
* revolves
* scenery (framed, non-weight bearing, soft, weight bearing)
* scenic art
* sets
* sound equipment
* trucks
* visual display equipment
 |
| * stage types and stage geography
 |
| * methods and techniques for marking out a stage
 |
| **production operations cont/d** |
| * features and use of a range of knots utilised during staging operations
 |
| * assembling, positioning and/or laying different set pieces and floor types
 |
| * cloths, tabs, drapes, cyclorama and scrim:
* function/use
* methods of tying
 |
| * main types of scenery and their use in live performances and events
 |
| * stage machinery and equipment:
* manual and automated
* name and general features
* use/operation during a live performance or event
* communication signals and devices used during their operation
 |
| * safety and environmental issues associated with prop construction
 |
| * adhesives and paints commonly used to construct and repair props
 |
| * role of the technical rehearsal and the dress rehearsal
 |
| **safe work procedures and practices** |
| * safe work procedures and practices when:
* undertaking staging operations
* working with:
	+ - electricity
		- items requiring lifting and/or manoeuvring
		- stage machinery and equipment
* dealing with unexpected situations or unplanned events
 |
| * risk management when undertaking staging operations
 |
| **workplace procedures and practices** |
| * workplace procedures and practices for:
* determining and confirming staging requirements
* bump in and bump out in line with production requirements
* routine maintenance of staging equipment and accessories:
	+ - checks and functionality tests
		- repairs and modifications:
		- in accordance with standard operating procedures (SOPs)
		- using appropriate tools and equipment
* cleaning and clearing performance spaces and work areas
* packing, storing and transporting staging equipment and accessories
* dealing with hired, lost and damaged staging equipment and accessories
* production evaluation and debrief
 |
| **troubleshooting and problem-solving** |
| * typical issues and challenges and common problems that arise during staging operations for a live performance or event
 |
| * consider potential effect of these on production and performance schedules
 |
| * troubleshooting and problem-solving process:
* identify the problem
* consider possible solutions
* take remedial action:
	+ - within scope of responsibility
		- rectify or refer to appropriate personnel
* evaluate effectiveness of action taken
 |
| * known solutions to a range of common/predictable problems in relation to staging operations for live performances and events
 |
| * workplace practices for recording and reporting
 |

Creating a mind map is a great way to organise your knowledge and understanding of the content of a topic.

You could use software such as a hierarchy chart, download ‘MindNode’ or similar or use a large sheet of paper (or several A4 sheets taped together)!

It is important to try to include all the detail you can, so add definitions, case studies or examples to prompt your memory. Include the information downloaded from the unit of competency and also from the Scope of Learning and Key Terms and Concepts.

Example of mind map being developed

