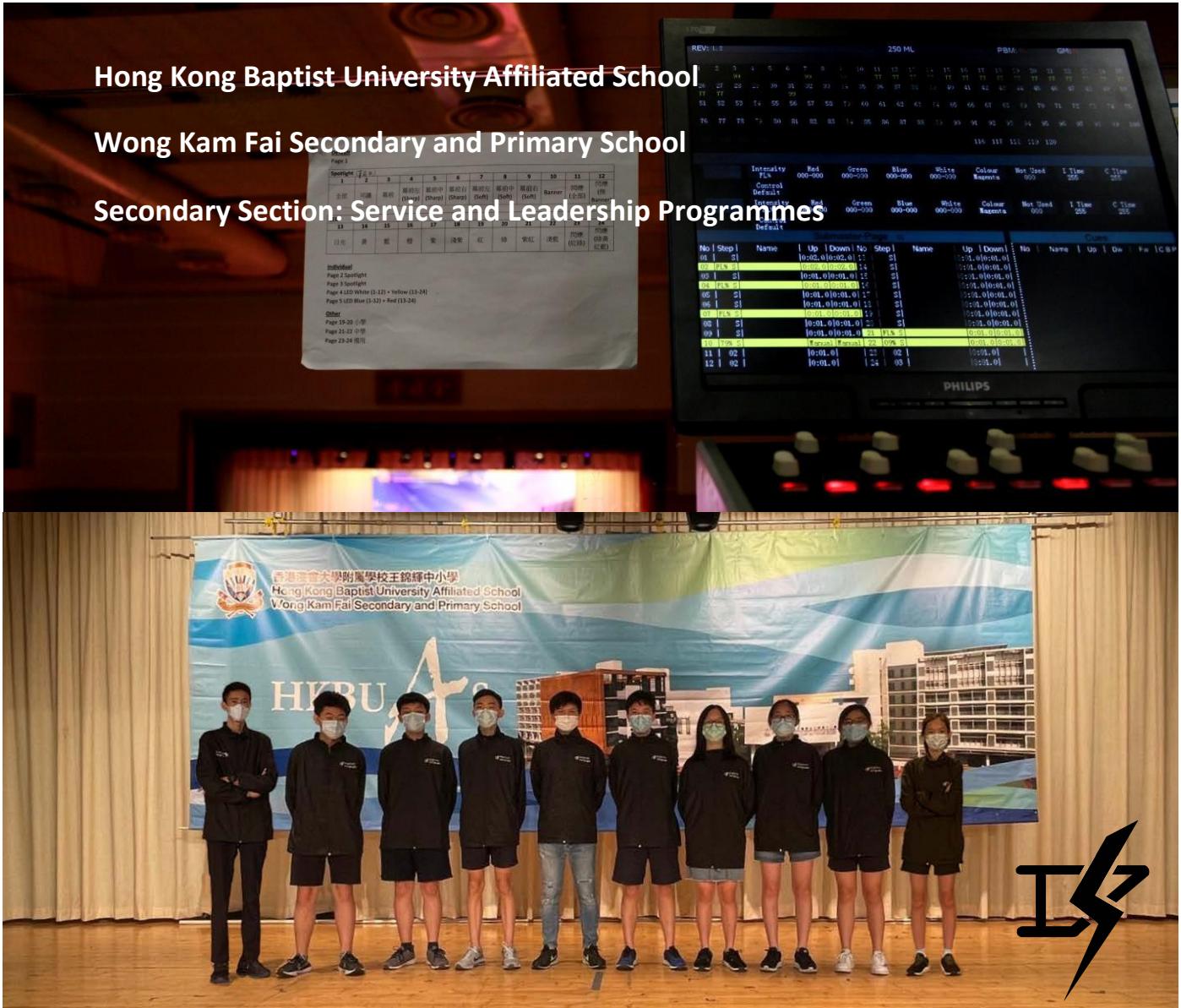


Hong Kong Baptist University Affiliated School

Wong Kam Fai Secondary and Primary School

Secondary Section: Service and Leadership Programmes



Digital Sergeant Handbook

Stage Design and Management Division

CHAPTER 1: WHAT IS STAGE?

In theatre and performing arts, the stage is a designated space for the performance of productions. The stage serves as a space for actors or performers and a focal point for the audience. As an architectural feature, the stage may consist of a platform) or series of platforms. In some cases, these may be temporary or adjustable but in theaters and other buildings devoted to such productions, the stage is often a permanent feature.

Not only in auditorium or theatre, but also an opened area which is targeted to conduct performance can be categorized as stage. Similar to the projection screen of the cinema or even a television in your home, stage is a place where audience are focusing on.

A stage, or a performing area is not just a space to let performers to perform no matter it is a drama or a musical show. It is also a place for designers to create an atmosphere by lighting and sound according to the script and instructions from the director. Without a doubt, imagination is one of the key elements in a stage performance. The quality of how a stage management team will also affect the experience of the performance.

Since the Italian Renaissance, the most common stage in the west is a single sided stage made by porcelain, which is still common in a variety of small to middle sized theatre nowadays. In the world of stage, it is not only essential to have performers performing on stage, but it is also important to have a group of professions to assist in the performance. In the following chapters, we will mentioning the relationships between performers, directors, artist instructors, designers and stage management team.



Think about: What will happen if there such a professional stage management team and designer are absent?



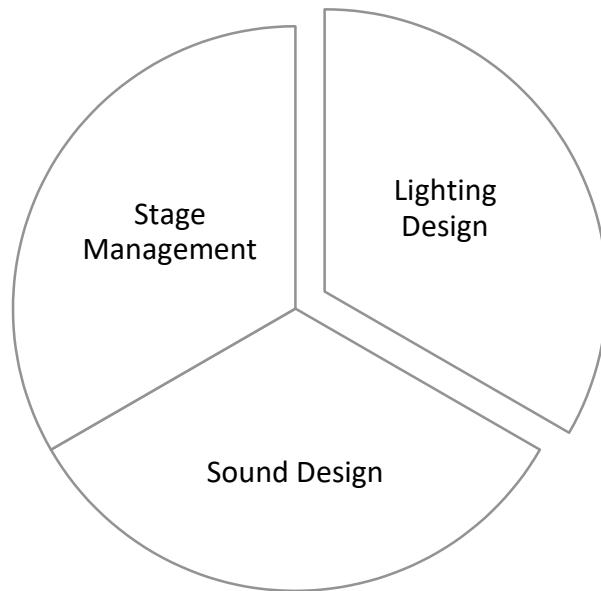
On stage, we can divide it into 9 directions

Up Stage Right (USR)	Up Stage Center (USC)	Up Stage Left (USL)
Center Right (CR)	Center Center (CC)	Center Left (CL)
Down Stage Right (DSR)	Down Stage Center (DSC)	Down Stage Left (DSL)
Audience		

According to the industrial standard, all the department on stage have a specific initial and a color representing it:

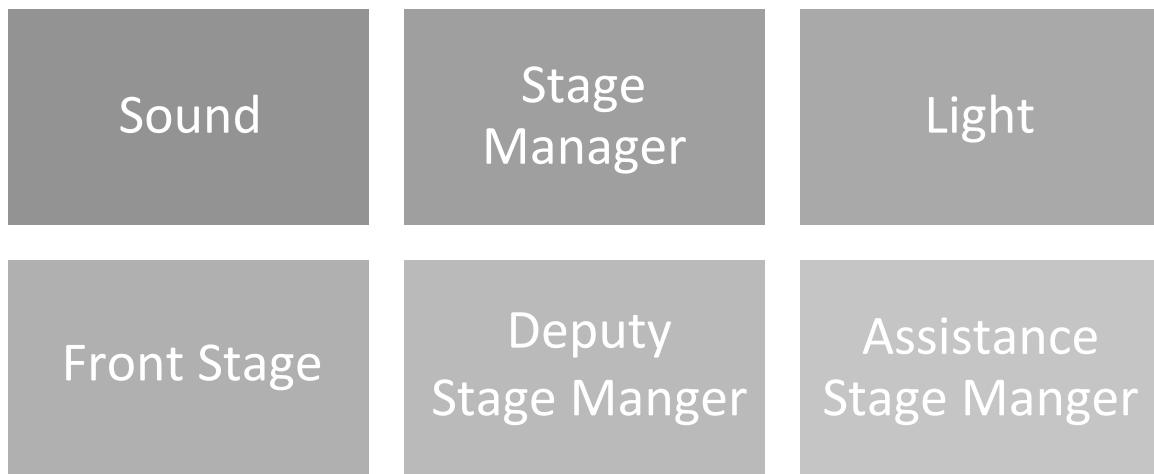
Department	Initial	Color Representing (reference)
Backstage	BS	Brown
Stage Left	SL	
Stage Right	SR	
Lighting	Lx	Green
Sound	Sd	Red

For lighting and sound, there are designers and operators. Designers are mainly focusing on the visual effect or audio effect of the lighting system or sound system created. The designers will tell the operator about what he/she want to create and ask the operator to record the cues and effect for him/her. When it is on show, only he operator will be responsible for running the cues and effect. Before starting the show, there will be a technical meeting which is focusing on the lighting design, sound design, flies (something hang over the stage), backdrop arrangement of the whole performance with the venue organization.



Stage Management, Lighting Design and Sound Design are the key elements of the stage. These divisions aim to provide the best audiences' visual and audio experiences by lighting and sound effects, and also the design of props. For different division of lighting design and sound design, we will go deep into it in the coming chapters.

Stage Management can be divided into a several division as shown below, where different division is very important to the stage, we will discover it in the next chapter



Radio communication skills (Reference)

Transmitter

1. Every time before speaking, state the name or post of the receiver.
2. Speak after you hold the transmit button for ~0.5-1sec, or the first word might be lost. (食左個字)
3. If you didn't receive any confirmation from the receiver, repeat the message.

Receiver

1. When you heard a radio message is transmitting, try to stop what you are doing and listen carefully to the message.
2. After a message is fully delivered, and you can understand clearly, you should reply <收到> <Roger>
3. If the radio signal is bad and you can't hear the message clearly, you should reply <重複> <Say Again>
4. If you are required to reply to the radio message, you MUST wait until the speaker is finished then press the transmit button to reply.

Reminder

1. Listening is the key while using a radio device to communicate.
2. During showtime, all members equip with Walkie-Talkie should wear an earphone
3. When you are equipped with an earphone, to transmit, you should press the button on the earphone but not on the Walkie-Talkie.
4. In case of a blocked message (Two people transmit at the same time). You should reply in the channel with <Blocked> to indicate that no message is delivered successfully.
5. In all cases, you should always reply to the transmitter after a message is sent.

Phraseology

1. During a radio check following syntax should be applied

Scale Definition

- 1 Unreadable
- 2 Readable now and then
- 3 Readable, but with difficulty
- 4 Readable
- 5 Perfectly readable (loud and clear)

Example --- Member 1: "Radio check"

Member 2: "Read you 5 by 5"

Note: 5 by 5 does not mean 5 out of 5. The first value indicates the signal strength, while the second value is the signal clarity.

2. To say "Yes", "Correct" we can use the phrase of <AFFIRM>
3. To say "No", "Wrong" we can use the phrase <Negative>



CHAPTER 3: STAGE MANAGEMENT

The stage is a place where it is the most dangerous and complicated area inside the auditorium. Front stage is the area where the cast perform to the audiences, with the help of lighting, this area become the spot light during for the whole performance. However, how success the performance is can be directly affected by the backstage man-powers before and during the performance.

Safety is the first priority of every single performance!

The stage consist of many intelligent and dangerous equipment if it is not managed in a good way, such as lighting bars, flys, electronic curtain, fog machine etc. The coordination between front and backstage are important so that the performance will be perfect finally.

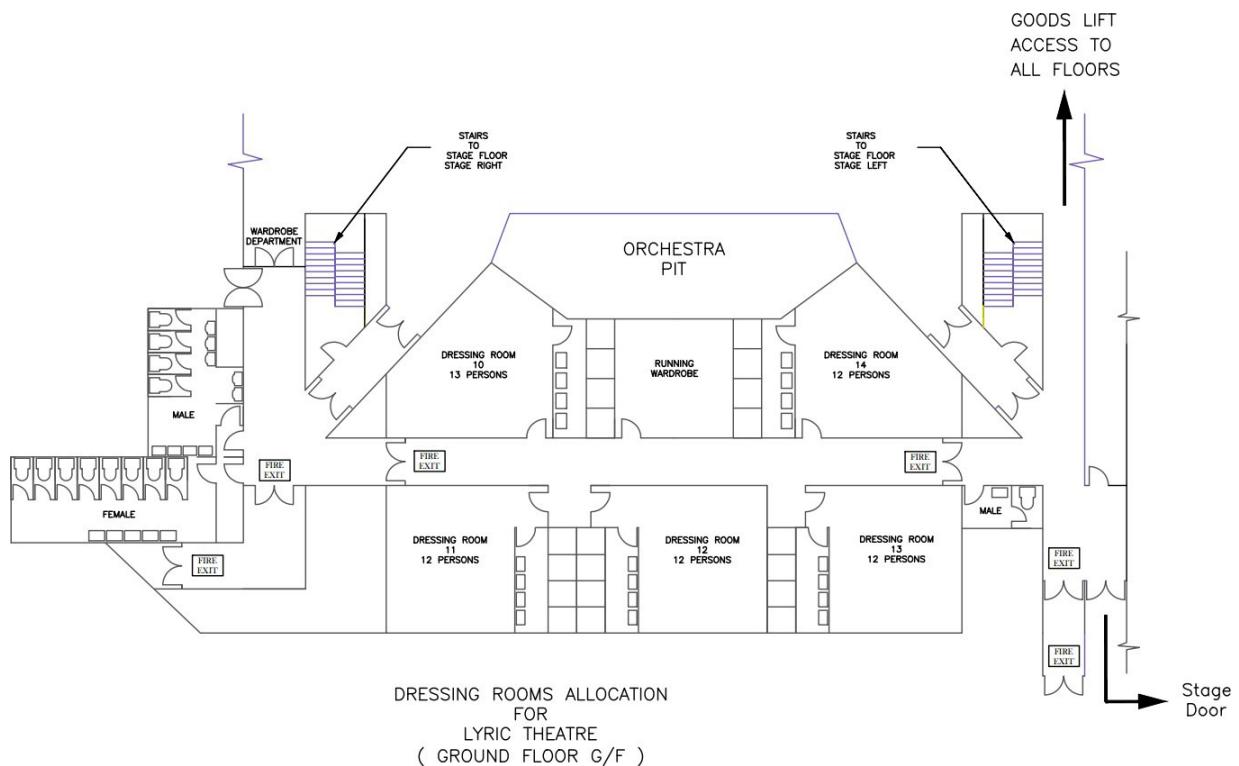
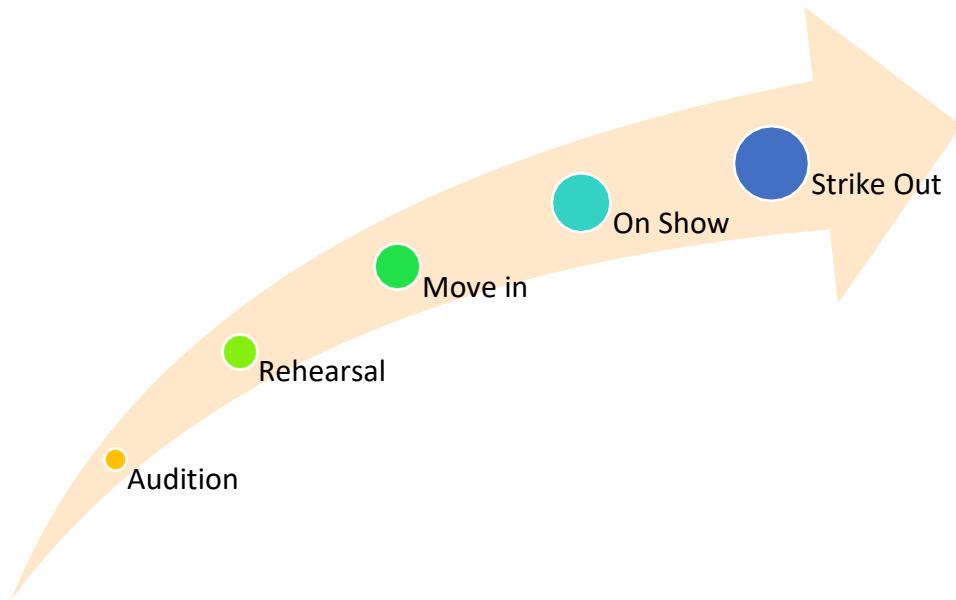


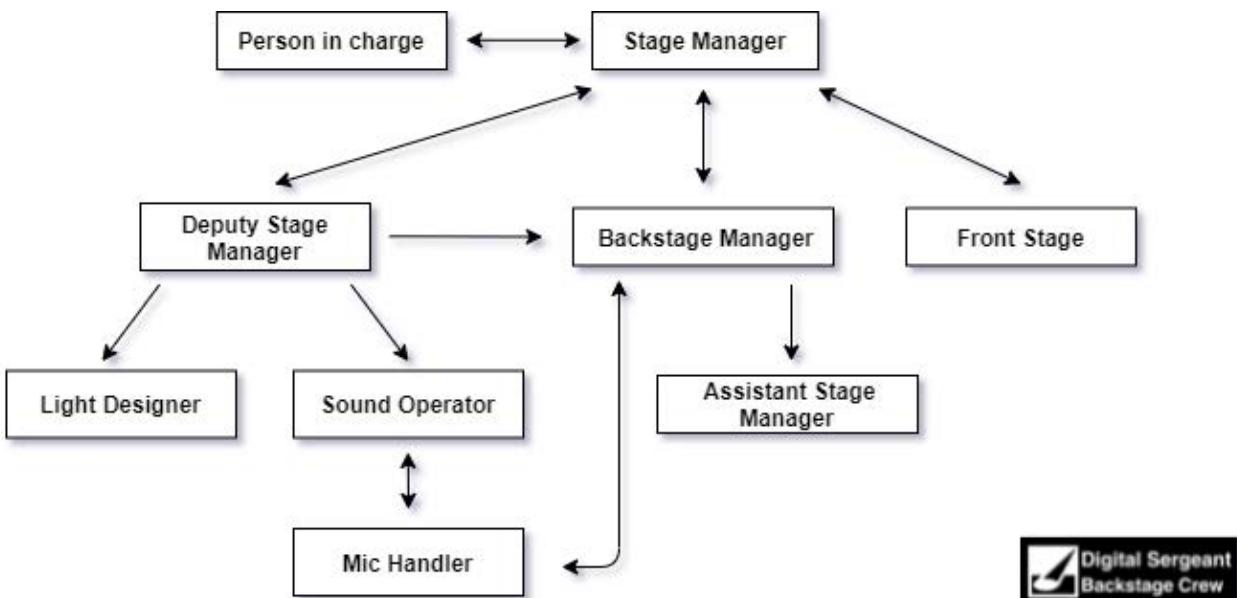
Fig 3.1 HKAPA Lyric Theatre Dressing Room Plan

Section 3.1 General view of a production



All production begins with a script which is prepared by a scriptwriter. Stage Manager will be the first one who involve in the audition as well, which assist the director to select the right person with the right character. He/she will then record the whole progress of the play with different documentation, forming a stage management team and start preparing for the move in with all the props ready and creating plans during the play.

Inside backstage, it is mainly composed with dressing rooms and store rooms for the equipment and also props. Stage Manager, Assistance Stage Managers, Crews and Backstage Managers are the person who involved in the changes of stage excluding lighting and sound.



- If SM is not applicable in particular show, BSM are required to takeover SM job while DSM being the final decision maker.
- Mic handler should be handling audio device at backstage under the command of BSM

Pre-Show Preparation SOP

Backstage Division:

- Below switches must be switched on before the show starts



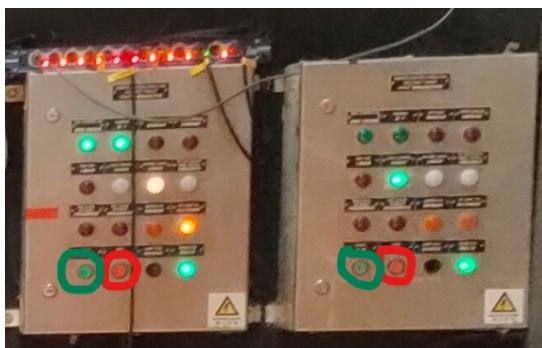
LED Lighting
(Side Wall)



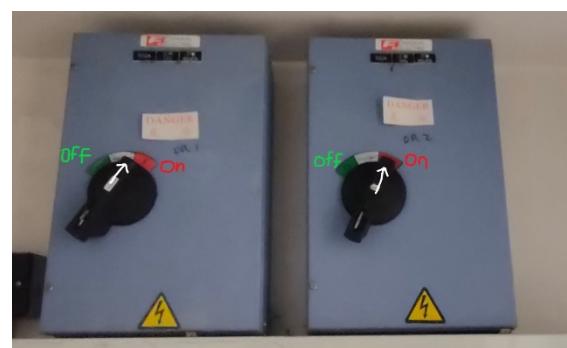
Light switch
(On AC Box)



Side TV
(First switch on side wall)



AC Switch
Red = OFF
Green = ON



Main Switch **ATTENTION**
Red = ON
Green = OFF

Digital Sergeant Marking SOP

General Regulations



- <- Different colors of tape should be used for identification
- <- Each scene should use only **1** color of tape for all marking
- <- Scene number should be written on the marking if possible
- <- Only use fluorescent tape under **NO/LOW** light working environment

General Marking

Chair



- <- Applicable to all types of chair (e.g. Piano chair)
- <- Should only be applied to **ONE** leg of the chair

Mic Stand



- <- Applicable to all types of mic stand
- <- Marking should be placed under the **CENTER** of mic stand
- <- The circled red part should be pointing **toward the mic**

Music Stand



- <- Marking should be placed under the **CENTER** of music stand
- <- Non directional

Instruments marking

Grand Piano / Keyboard



^- Red label refers to piano/keyboard leg

^- **All** leg of piano/keyboard should be marked

^- If the piano is marked there is no need for making the piano chair

Drum set / Timpani



^- Red label refer to drum

^- Centre label of the drum set should be perfectly aligned

Others

^- Use markings that are not indicated above to mark other props

^- Keep the marking **SIMPLE** is the key

Section 3.2 Stage Manager

Stage Manager(SM) is the key person who involves in every single progress of the whole production. A production can be divided into three stages, pre-show, on-show and post-show. On stage 1, he/she will be assisting in rehearsals and also marking every single role in the show. During this stage, he/she will be following the person in charge and mark down every single changes of the play. After confirming the venue of the play will be played, he/she will gather LX, SD, BSM, for designing the scenery objects or blocks for medium production. He/she will also hold a meeting with assistance stage manager for discussing the arrangement of hand props searching and creating the scene change plan with the allocation of stage manpower during the show.

After finishing all the rehearsals in the practice venue with most of the props that will be shown on stage ready, then the whole production will move on to Stage 2-on show. Before the play is really performed to the audience, we generally mention this period of them as move-in, where all the props, scenery will be moved to the venue and ready to be used. Before moving in, stage manager has to prepare a technical schedule mentioning all the work which will be done during move in everyone involved in the production. He/she will also need to chase up lighting designer and operator, sound designer and operators, assistance stage managers, backstage manager regarding the cues recording, floor marking, and room allocation. Stage Manager will also involve in technical run and dress run, where he/she will be the one directing assistance stage manager, lighting and sound operator regarding their own businesses.

After all the rehearsals are done and everything is ready, stage manager will shout out hour callings regarding the time left for opening the auditorium to the audience. Commonly, they are “one hour call”, “half hour call”, and finally “house open, stage clear!” which alerts everyone to go back to their own position and get ready for the show. (Signaling the starts of an event)

During the performance, stage manager will either located on stage left, stage right, or balcony according to the needs of the show, to monitor the whole performance. Once there are any technical error or emergencies happened, he/she have the authority to imply immediate solution bypassing DSM if needed.

After the show is completed and the last audience is left, he/she will allocate everyone to return all the props borrowed from others, packing all the materials back, either returning to the organizer or destroy it. He/she is also asked to clear all the accounts and cleaning the whole venue. By entering stage 3-pro show, he/she need to conclude the show during the debriefing section and comment on different members performance.



DEPUTY STAGE MANAGER AND CUE CALLING

Continuing the content in Chapter 3, about the different position of a stage manager, assistance stage manager and backstage manager. In chapter 8, we are going to focus on the role of Deputy Stage Manager(DSM). In terms of the Chinese meaning, DSM is named “執行舞臺監督”, which means he/she is the one who control the cues. Generally, stage manager will be standing by at the backstage and mainly look after the backstage issue, while deputy stage manager is the one who are responsible to look after light and sound during the show time. He/she will be the one who control all the departments in the stage during the show, such as calling the sound cues and light cues. During emergency situation, he/she will be the one which set instructions to different departments for what they should do in order to solve the problem.

Section 8.1 Prompt Book

Both stage manager and deputy stage manager are the holders of a prompt book, which is start from the script of the play. Inside the prompt book, it will include all the details of the play, such as the documentations mentioned in chapter 4, there will be all cues markings inside the prompt book as well.

Deputy stage manager will flip over the prompt book during the show and call the cues according to the lines (dialogs) that the cast is making, and that is the cue point.

<p>sc. i] KING LEAR 99 And from some knowledge and assurance offer This office to you. Kent. I will talk further with you. King. No, do not. For confirmation that I am much more Than my out-wall, open this purse, and take What it contains. If you shall see Cordelia,— As fear not but you shall—show her this ring, And she will tell you who that fellow is That yet you know. Fie on this storm! I will speak the King to him. Gent. Give me your hand. Have you no more to say? Kent. Few words, but, to effect, more than all yet; That, when we have found the King, in which your pain That way, I'll this, he that first lights on him Holla the other. [Exeunt severally. 55]</p> <p>SCENE II.—[Another part of the Heath.] Storm still. Enter LEAR and Fool. Lear. Blow, winds, and crack your cheeks! rage! blow! You cataracts and hurricanes, spout!</p> <p>Fool. O Nuncle, court-holy-water in a dry house is better than this rain-water out o' door. Good Nuncle, in, ask thy daughters blessing; here's a night pities neither wise men nor Fools. That makes ingratiate man!</p> <p>Nor rain, wind, thunder, fire are my daughters: You suln' rain and thought-executing fires, Vaunt-courtiers, and thunders-thunderbolts, Sing like white hounds! And those all-shaking thunder, Strike flat the thick rotundity o'th' world! Crack Nature's moulds, all germs spill at once</p> <p>Till you have drench'd our steeples, drown'd the cocks!</p> <p>5</p> <p>Strike flat the thick rotundity o'th' world! Crack Nature's moulds, all germs spill at once</p> <p>Lear. Rumble thy bellyful! Spit, fire! spout, rain!</p> <p>Fool. He that has a house to put's head in has a good head-piece.</p> <p>10</p> <p>Never gave you kingdom, nor'd your children, You owe me no subscription; then let fall Your horrible pleasure; here I stand, your slave, A poor, infirm, weak, and despis'd old man.</p> <p>But yet I call you servile ministers, That will with two pernicious daughters join Your high-engender'd battles 'gainst a head So old and white as this. O, ho! 'tis foul.</p> <p>Fool. He that has a house to put's head in has a good head-piece.</p> <p>15</p> <p>Before the head has any, The head and he shall louse; So beggars marry many.</p> <p>20</p> <p>25</p>	<p>Standby Sound Q3</p> <p>Sound Q3 GO [Thunder]</p> <p>Standby LX Qs 10-14 and Sound Qs 4-6</p> <p>LX Q 10 GO [Dim scene change]</p> <p>When the stage is clear</p> <p>LX Q 11 GO [Heath state - dim]</p> <p>LXQ 12 GO [Lightning flash]</p> <p>Follow on Sound Q4 GO [Thunder rumble]</p> <p>LXQ13 GO [Lightning flash]</p> <p>Follow on Sound Q5 GO [Thunder crack]</p> <p>LXQ14 GO [Lightning flash]</p> <p>Follow on Sound Q6 GO [Thunder rumble]</p>
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Section 3.3 Assistance Stage Manager

Assistance Stage Manager(ASM) is a team of man-power who are mainly responsible for props searching and design, assisting stage manager for move-in and strike out. They are also responsible for the safety of everyone on stage. To conclude, assistance stage managers usually take up a role in:

- Scene Change
- Props Searching
- Mic Preparation
- Marking of props

Section 3.4 Backstage Manager

Backstage Manager (BSM) is one of the assistance stage managers. However, he/she is mainly focusing on progress of costume and make-up after moving into the performing venue. Discipline management of backstage, allocating the guests and ASM are his/her duty inside the production.

Section 3.5 Mic Handler

Mic Handler should come from the SD department, SD team-head should arrange the selected mic handler before the starts of the event (1-2) depending on size and demand of the show. Mic handler are required to handle all of the audio devices on stage including receiver, plug-on e.t.c.

Section 3.6 Front stage

Front stage(FS) is mandatory in each show. He/She should be assigned when the duty list is settled. FS are responsible to respond to sudden incident on/off stage, he/she should be proactive to solve problem. Under feasible situations, FS should hold 1 extra handheld mic as a backup.

Section 3.7 Sound

Sound Designer / Department (SD) are responsible to handle the sound-panel, PPT, also every hardware audio devices, a minimum of 3 members should be arranged during major shows. SD should imply mentor ship scheme (師徒制) as it's heavily experience based position.

Section 3.8 Light

Light Designer / Department (LX) are responsible to handle the light-panel, follow-light. LX should adapt mentor ship scheme (師徒制) as it's heavily experience based, the member cycle of LX should be longer than other position (2-3 weeks) providing a continued training.



A chair which is placed on stage will be determined as props, as this is showing the setting of the play, maybe inside a restaurant or inside someone study room.



A mobile phone is an example of a hand props, which is allowing actors to hold it on hand or even use it during the play



This is a scenery which showing the location outside a theatre. The making of a scenery is complicated, so it will be shown under a large amount of budget is given or the play is mainly located at that setting.



Think about: Why we need props and such a big group in the production?



CHAPTER 4: DOCUMENTATIONS (STAGE MANAGEMENT)

During Stage 2 of the production, it is important that there are documents recording the progress of the rehearsal and also planning the run through of the show after moving into the stage.

Section 4.1 Rehearsal Notes (optional)

Rehearsal notes is aimed to recording down all the changes that happened in the rehearsal, including the attendance of the cast, changes that director made and the time spent during the run through. Creating this notes is aimed to recording down everything happened and able to chase it back after the rehearsal to beware of any misunderstanding and able to let all the person involved but are absent from the rehearsal

Date : 1 Nov 2013 Time : 1400-1800 Venue : Rehearsal Room1 Content : Run Through	<table border="1"> <thead> <tr> <th colspan="2">Notes</th> <th>Concerned Parties</th> </tr> </thead> <tbody> <tr> <td colspan="2">1. Run Through Time</td> <td>Producer, Marketing Manager, Director, SM Team, TM, Performers</td> </tr> <tr> <td>Scene</td><td>Time</td><td></td></tr> <tr> <td>Scene 1</td><td>07 mins 05 seconds</td><td></td></tr> <tr> <td>Scene 2</td><td>10 mins 35 seconds</td><td></td></tr> <tr> <td>Scene 3</td><td>07 mins 52 seconds</td><td></td></tr> <tr> <td>Scene 4</td><td>08 mins 17 seconds</td><td></td></tr> <tr> <td>Scene 5</td><td>05 mins 58 seconds</td><td></td></tr> <tr> <td>Scene 6</td><td>05 mins 10 seconds</td><td></td></tr> <tr> <td>Scene 7</td><td>08 mins 30 seconds</td><td></td></tr> <tr> <td>Scene 8</td><td>10 mins 33 seconds</td><td></td></tr> <tr> <td>Scene 9</td><td>07 mins 40 seconds</td><td></td></tr> <tr> <td>Scene 10</td><td>07 mins 20 seconds</td><td></td></tr> <tr> <td colspan="2">Total = 1 hour 19 mins</td><td></td></tr> <tr> <td>2. Joey Leung was late for 15 minutes because of car crash.</td><td></td><td>Producer, Director, SM Team</td></tr> <tr> <td>3. Artemis Leung hurt her leg by her partner during the dance with the use of umbrella. Her leg bleed and SM helped to make her wound stop bleeding, then took her to hospital after the rehearsal.</td><td></td><td>Producer, Director, SM Team</td></tr> </tbody> </table>	Notes		Concerned Parties	1. Run Through Time		Producer, Marketing Manager, Director, SM Team, TM, Performers	Scene	Time		Scene 1	07 mins 05 seconds		Scene 2	10 mins 35 seconds		Scene 3	07 mins 52 seconds		Scene 4	08 mins 17 seconds		Scene 5	05 mins 58 seconds		Scene 6	05 mins 10 seconds		Scene 7	08 mins 30 seconds		Scene 8	10 mins 33 seconds		Scene 9	07 mins 40 seconds		Scene 10	07 mins 20 seconds		Total = 1 hour 19 mins			2. Joey Leung was late for 15 minutes because of car crash.		Producer, Director, SM Team	3. Artemis Leung hurt her leg by her partner during the dance with the use of umbrella. Her leg bleed and SM helped to make her wound stop bleeding, then took her to hospital after the rehearsal.		Producer, Director, SM Team
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Should you have any enquiries, please feel free to contact Peter Chan (SM) at 1234 5678.
Thank You!
Prepared by: Peter Chan(SM + DSM of One Table With Two Chairs)
Date : 1 Nov 2013 (Fri)

Section 4.2 Scene Availability Chart (optional)

Scene availability plan is aimed to sort the availability of every single cast, which is mainly give the sound designer and backstage manager regarding the time that the cast is estimated to have for quick change or rest. It also help sound designer about the allocation of microphones if the venue cannot provide every cast with a microphone on.

High School Musical III Scene Availability Chart							
Cast	Character	Sc1 (P1-10)	Sc2 (P11-13)	Sc3 (P14-19)	Sc4 (P20-29)	Sc 5 (P29-41)	Sc 6 (P42-44)
Crystal	Susan	Yellow		Yellow			Yellow
George	Sam	Yellow		Yellow			Yellow
Winston	John	Yellow					Yellow
Serene	Stephanie		Yellow				Yellow
Apple	Connie		Yellow				
Steve	Mannix				Yellow		Yellow

Section 4.3 Technical Schedule (Optional)

Technical Schedule is the most import document in the whole production, especially during move-in, as this will be guiding all the parties what to do and when to do before the show really starts. Technical schedule will also include the meal break and the time that different parties should arrive and the day ends.



Think about: If there is no technical schedule, what will it become?



Name of Production: A-School Got Talent 2015

Date of Production: 2015-6-17

Venue: School Hall

Presented by Student Union and Digital Sergeant

Technical Schedule

Date	Time	Content	Persons Involved	Remarks
6/13/2015	0900-0910	Stage Tour	Competitors, SM/DSM	
	0910-1230	Spacing/ Light Plot/ Sound Plot/ Projection System setup	Full Co.	
	1230-1345	Meal Break	Full Co.	
	1345-1545	Technical Rehearsal	Full Co.	
	1545-1555	Notes Session	Sm Team, Lx and Sd designer	
	1555-1630	Light Plot/ Sound Plot	Lx and Sd designer	
		Projection System testing	Jeffrey, Thomas, Wesley	
	1630	Scene Change Runthrough	SM Team	
	1630-1645	Tidy up	SM Team	
<hr/>				
6/17/2015	0730-0800	Preset	Full Co.	
	0800-0830	Projection System Final Checking	Jeffrey, Thomas, Wesley	
	0800-0915	Tech. Work	SM Team	Communication tools testing
	0915	Half Hour Call	Full Co.	
	0930-0945	Sd and Lx Final Testing	Full Co.	Competitors should be ready in Music Rm
	0945	House Open		
	0950	Performance		
	1145-1215	Strike-Out		

Section 4.4 Scene Change Plan

Scene change plan is another document describing the man-power distribution during scene change. It also mention the approximate location of the props or scenery should be placed after the change.

Sc. 1 (P2: Bring me the horizon)			
Sc. 2 (P3: Dancing Performance)			
Mark: White L			
	C1 C2 T1 T2	Action	Object
		Preset	Chair 01 Philips
			Chair 02 Hiu Yu
			Table 01 Dominic
			Table 02 Jianyou
Sc. 3 (P4: I will always love you)			
Mark:			
		Action	Object
		Off	Chair 01 Philips
			Chair 02 Hiu Yu
			Table 01 Dominic
			Table 02 Jianyou
Sc. 4 (P5: Senbonzakura)			
Sc. 5 (P6: Almost is Never Enough)			
Mark: White Chicken Leg			
	C1 MS1 MiS1 MiS3 C2 MiS2 MS2 MiS4	Action	Object
		On	Chair 01, 02 Philips
			Music Stand 01,02 Hiu Yu
			Mic Stand 01,02 Dominic
			Table 02 Jianyou
			Mic Stand 03, 04 Leo

Section 4.5 Props List (Optional)

The props list is aimed to show the source, time will be shown on stage of the whole production. This is aimed to create a clearer picture for the director and stage manager to know what will be put on stage.

Name of Production: The Sound of Music

Date of Production: 2015-5-9

Venue: HKBU AC Hall

Presented by Theatre Noir Foundation and A-School

Props List

Version 5

Drafted by Wesley Chow

No.	Sc.	Item	Qty	Used by	Source	SL / SR	Remarks
1	2	Inkstand	1	Mother Abbess	Jovi	SL	
2	2	Pen	1	Mother Abbess	Jovi	SL	
3	2	Papers	1 stack	Mother Abbess	Jovi	SL	
4	2	Bible	1	Mother Abbess		SL	
5	2	Bible	3	Mothers		SL	
6	3	Guitar w/ case	1	Maria	Derek	SR	
7	4	Guitar w/ case	1	Maria	Derek	SR	
8	3	Carpet Bag	1	Maria	Jovi	SR	
9	3	Spoons & knives	Some	Housekeeper C	Jovi	SR	
10	3	Wine Glasses	4	Housekeeper A	Jovi	SL	
11	3	cleaning towels	3	Housekeepers	Jovi	SL	
12	3	Silver Whistle	1	Captain	Derek	SL	
13	3	Book	1	Brigitta	Wesley	SL	
14	3	Velvet Case w/ Boatswain's Whistle	1	Captain		SL	
15	5	Stone Bench	1	NA	School	SL	
16	6	Bed sheet	1	Housekeeper	Robby	SL	
17	6	Guitar w/ case	1	Maria	Derek	SL	Same as item 6
18	7	Edelweiss	1	Gretl	Jovi	SL	
19	8	Cigar	1	Uncle Max	Jovi	SL	

CHAPTER 5: LIGHTING DESIGN

Stage lighting is the craft of lighting as it applies to the production of theatre, dance, opera and other performance arts. Several different types of stage lighting instruments are used in this discipline. In addition to basic lighting, modern stage lighting can also include special effects, such as lasers and fog machines. People who work on stage lighting are commonly referred to as lighting technicians.

In a general picture, lighting is used to specialize the object, producing atmosphere, emphasize the beats of a sound track and also used as an illumination. Same as stage management team, lighting is an essential component of a show, especially in indoor venues.

Section 5.1 Lighting Fixtures

Lighting fixtures can be determined as a single light bulb which shines on the stage. From the very first beginning, where LEDs are not invented, lighting fixtures are usually use halogen bulbs as the main source of lights. In order to create a variety of lighting effects, such as sharp and soft visual effects, there are commonly 5 types of fixtures which is commonly installed in the theatre.

5.1.1 Fresnel

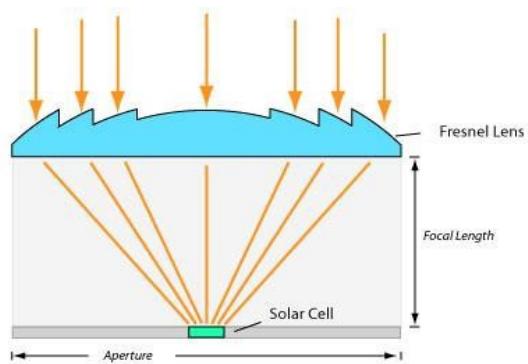
Fresnels are the workhorses of stage lighting and the most common luminaire (light) used on stage. They are called a ‘Fresnel’ because they use a ‘Fresnel’ lens, recognized by the characteristic ‘stepped’ molding on one face and the texturing on the other, named after its designer, Augustin Fresnel.

This Fresnel lens produces a very even light that is soft at the edges and tends to project a soft shadow. Because the edge of the light is soft, it is not absolutely precise and will blend easily with the edges of other Fresnels to give smooth stage coverage.



The beam is a cone of light so the size of your lit area increases as the throw distance from the Fresnel to that area increases. However, the beam angle of this light cone can be altered by a focus knob that changes the distance between the lamp and the lens. As the lamp (with its reflector) is moved towards the lens, the beam becomes wider, and as it moves away from the lens, the beam becomes narrower.

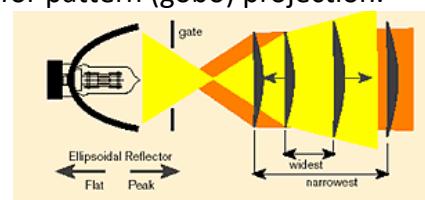
(Source: Philips Selecon)



5.1.2 Ellipsoidal Zoomspot

A zoomspot is a precise optical instrument, principally used for frontal stage lighting from auditorium lighting positions; precise area illumination and for pattern (gobo) projection. Light is collected into a gate where it can be accurately shaped using four masking shutters with the beam angle then defined by independently adjustable lenses.

The beam is ideal for high definition pattern (gobo) projection and razor sharp shaping of the beam.



5.1.3 Plano-convex

PC stands for 'plano-convex' which describes the lens used in this

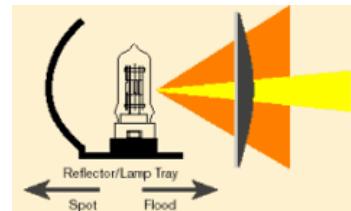
luminaire. This type of lens has a smooth surface and outward curve and is used when the beam of light must have a hard or well defined edge.

Plano-convex luminaires use a similar optical system to that of a Fresnel. With a 'crisp' beam and less light scatter than the Fresnel the PC provides a wide range of beam angles useful from onstage, side stage and auditorium lighting positions.

The narrow spot achieved with PCs is near parallel and very efficient, ideal for dramatic highlights while the flood angle (60°) will cover a large stage area from a short throw distance.

The incisive quality of the beam contrasts with the 'softer' quality of the Fresnel and can be used for dramatic effect. The addition of a light diffusion (eg Hamburg Frost 114) alters the beam of a PC to that of a Fresnel. The beam is a cone of light so the size of your lit area increases as the throw distance from the PC to that area increases. However, the beam angle of this light cone can be altered by a focus knob that changes the distance between the lamp and the lens. As the lamp (with its reflector) is moved towards the lens, the beam becomes wider, and as it moves away from the lens, the beam becomes narrower.

(Source: Philips Selecon)



5.1.4 Cyclorama (CYC)

There are no other adjustments which means there is no way to focus the light to control the beam size – the spread of the beam and the subsequent area that it will cover will depend on the distance between the flood and what is being lit.



These luminaires deliver either a fixed beam of light for lighting a cyclorama / backcloth or broad relatively uncontrolled washes of light and come with a colour filter holder for adding gel to.

Cyclorama can be combined during manufacture into 3-way and 4-way compartment luminaires to provide colour mixing possibilities. When these units hang above the stage they are known as battens; when they sit on the front edge of the stage, they are footlights; and when they sit on any other part of the stage floor, they are groundrows.

5.1.5 Parabolic aluminized reflector (PAR)

A parabolic aluminized reflector is a type of electric lamp that is widely used in commercial, residential, and transportation illumination. Usage includes locomotive headlamps, aircraft landing lights, and residential and commercial recessed lights. They are identical in principle to sealed beam automobile headlights.



5.1.6 Fog Machine

Fog machine is a common fixtures even in the small sized venue. This fixture mainly aimed to create a mysterious atmosphere on the stage in some magical scenes.

Moreover, the fog machine can also clearly show the light bim (the line produce by a light bulb when it is on) for the powerful fixture



(Source: Philips Selecon)



CHAPTER 6: SOUND DESIGN - QLAB (Reference)

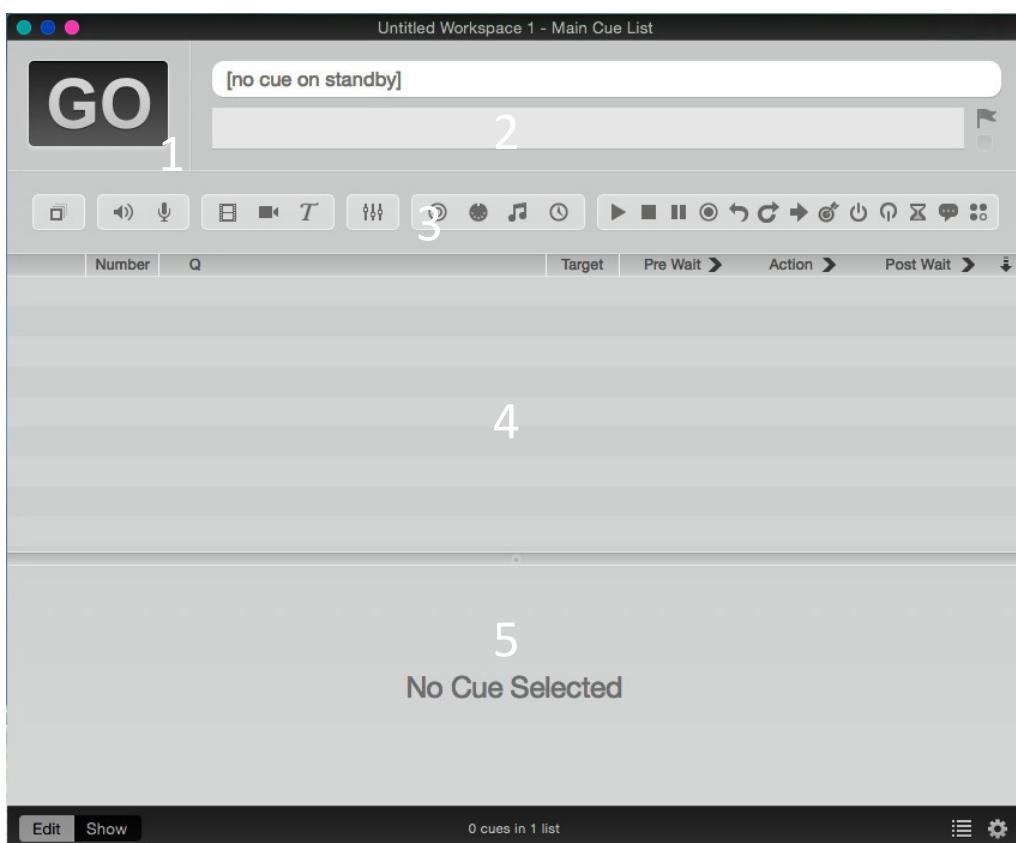
Section 6.1 What is QLab?

QLab is a sound effect and video playback effect software, used by Digital Sergeant since 2012, in various events, where immediate sound effects are needed, for example A-School Got Talent and Graduation Ceremony. It comes as a free software running on Mac OS X but some features are limited to the Video Pro and Audio Pro edition. We use the free version in school, as we only use features that are already included in the free version.



Section 6.1.1 How does QLab work?

QLab runs on a simple interface and advanced panels are hidden on default. When you run QLab 3, you will see this:



1. 'Go' Button: Runs the first cue, or the next cue if you have executed a cue before.
2. Cue name and cue remarks: Basically a place where you can name the selected cue, or add remarks to the selected cue.

Remarks: Do remember to name the cues, or else you will have trouble sorting the different cues! Or, instead, you can use numbers to sort them out,

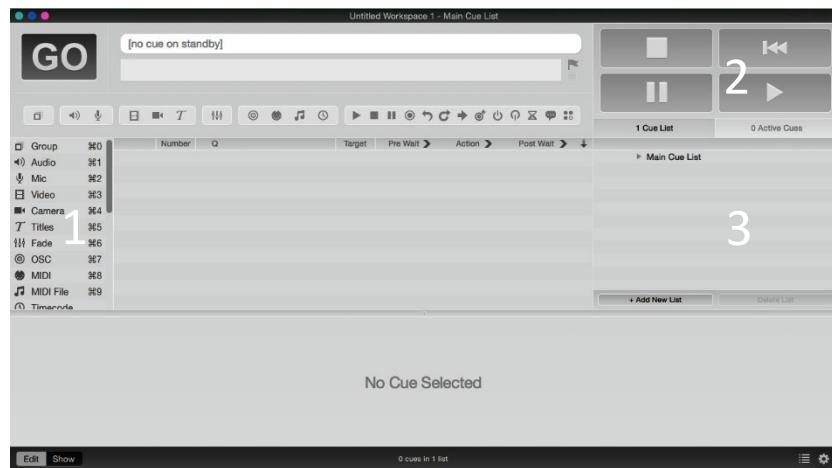
3. Toolbar: Where different cue types are found. Click an icon to create a cue of that type.
4. Cue list: An area where you can rearrange, group, number, change the name and target of the cues. Each cue is composed of different parts, which are
 1. Number: A number for each cue (**this is very important as cue sheets often identify cues with numbers instead of cue names**)
 2. Q: The name of a cue
 3. Target: The audio or video you have selected for audio or video cues, or the selected target cue of effect cues e.g. fade and stop cues
 4. Pre Wait: Waiting time before the cue is executed
 5. Action: The elapsed time of the cue (it can be changed into time remaining, which I absolutely recommend you to change, as cue calling is based on time remaining)
 6. Post Wait: Waiting time after the cue is executed
 7. ↓ logo: Indicates whether the cue is set as auto-follow or autocontinue

Auto-Continue: After a cue with Auto-Continue is started, QLab will automatically start the next cue in the cue list. If the Post Wait time of this cue is set to some number other than zero, then QLab will wait for that amount of time before starting the following cue

Auto-Follow: QLab will wait until a cue has finished playing, and then start the next cue

5. Cue Properties: A panel where you can change the properties of the cue selected

Section 6.1.2 Advanced Panels



1. Cue Panel: A panel that displays all the cues and their shortcuts. Recommended for usage because you can drag a new cue to any parts of the cue list.
2. Cue Control Buttons: Buttons that control cues. They are the stop cue, load previous cue, pause cue and go cue buttons respectively.
3. Cue List and Active Cues: A list that shows the cue list and active cues. Do use the active cues as you can stop playing cues at any time with it.

Section 6.1.3 Commonly used cues

Audio	#1	Audio: Insert an audio file.
Video	#3	Video: Insert a video or a photo
Group	#0	Group: Group cues together. Their playback behavior can be chosen in the 'Mode' tab of the cue properties. They are

1. Start first child and enter into group: Starts the first cue in the group and goes to the next cue in the group.
2. Start first child and go to next cue: Starts the first cue in the group and goes to the cue after the group
3. Start all children simultaneously: Starts all cues in the group together
4. Start random child and go to next cue: Starts a random cue in the group and goes to the cue after the group

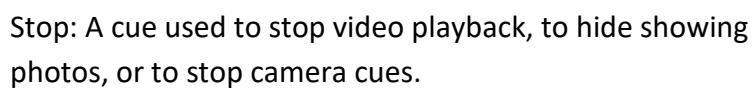


 **Fade** 6

Fade: Fade an audio cue.

 **Camera** 4

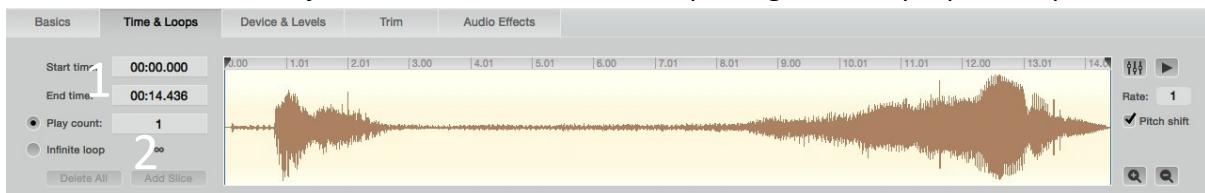
Camera: This cue is used for showing video stream live from cameras and camcorders. Rarely used but big events utilize this cue.

 **Stop** Stop: A cue used to stop video playback, to hide showing photos, or to stop camera cues.

Section 6.2 Basic Techniques

Section 6.2.1 Tuning an audio cue

An audio cue can be adjusted, trimmed, or set to loop using the ‘cue properties’ panel.



1. Trim the piece of audio.
2. Set how many times you want the audio cue to be played or to be looped.



3. Set the output of the audio.
4. Set the level of the audio (It will be used for fading in and out, also you can use it to adjust the volume of the whole audio cue)

Section 6.2.2 Fading an audio cue

1. Fade in
 - a. First, set the output of the audio to –INF at the ‘Devices and Level’ panel.
 - b. Then, add a fade cue **AFTER** the audio cue and pull the audio cue to the fade cue so the target is set to the audio cue.
- c. Set the level of the fade cue to 0. The level settings can be found in the ‘Levels’ tab at the Cue Properties panel.



2. Fade out

- First, put a fade cue under the audio cue you want to fade and pull the audio cue to the fade cue so the target is set to the audio cue.
- Set the level of the fade cue to –INF. Also check the box ‘Stop target when done’ so that the audio cue is stopped.



Section 6.2.3 Using a group

A group is mostly useful when we want two or more cues to run at the same time. Here is an example of putting a fade cue and audio cue together so that fading in occurs automatically.

Source	Address	Mode	Start Time	End Time
OSC	#7		00:00.00	00:00.00
MIDI	#8		00:00.00	00:24.90
MIDI File	#9		00:00.00	00:05.00

The mode determines how the group cue will behave when it is triggered during playback.

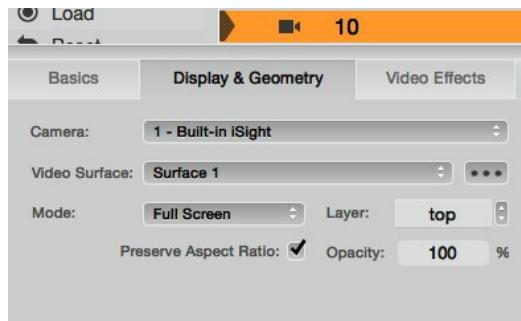
- Start first child and enter into group
- Start first child and go to next cue
- Start all children simultaneously
- Start random child and go to next cue

The fade cue and the audio cue is fired at the same time so that the fading process is automated, requiring only a click.

Section 6.2.4 Using the camera cue

The camera cue is used to show live video streams from cameras or camcorders, which often are used in big events such as A-School Got Talent, Christmas Ball etc. The camera or camcorder will be connected to the computer by HDMI (or Mini DisplayPort) and the video stream will be projected through a projector or screen.

1. First, add a camera cue and go to ‘Display and Geometry’ panel at the Cue Properties panel.



2. Change the ‘Camera’ to the connected camera.
3. Execute the cue and the video stream will be shown.

Section 6.2.5 Using the stop cue

The stop cue is used when you want to stop showing a photo, video or camera cue.

1. First, add a camera cue after any video or camera cue.

5	DSC_8063.jpg	00:00.00	00:00.00
5.5	stop DSC_8063.jpg	5	00:00.00

2. During playback, fire the stop cue by pressing Space to stop showing the photo, video or camera cue.

Section 6.3 Appendix: Linking screens and sound output

1. Screen Output

- First, go to the settings screen under the cue properties panel.



- Go to 'Video' panel, press the '+' button and press 'New with Display', and add the projector to the screen list.
- Change the screen in the 'Display and Geometry' panel in the Video cue to the projector.

2. Audio Output

- Go to the 'Audio' panel and change the audio device in Audio Patch 1(or above).



- Go to the 'Devices and Levels' panel in the Audio Cue to the audio source you want to output.

CHAPTER 7: SOUND DESIGN – CONSOLE

Sound design, another important element that a play must have. It is aimed to project voices from the actors and also enhance audiences' audio experience.

Section 7.1 Jacks

Inside the world of sound design, there are a number of jacks which connecting different device together. When connecting microphones, computer, speakers and effect mixer, we usually have three major types of jacks

Type of jacks	Photo	Common usage
3.5 mini jacks		Mobile Phone Computer Sound Connection
XLR		Microphone Connection which requires electricity to power up
6.3 mini jacks		Connect medium-sized speakers or professional headphones

Section 7.2 Sound Operation Equipment

Similar to lighting design, there are a number of essential equipment which is receiving, transmitting or processing sound in a complicated way.

Section 7.2.1 Microphones and receivers

Name	Photo	Common Usage
Wireless Handheld Microphone (Sennheiser ew100)		Mainly used for vocal or presentation
Wireless Audio Receiver/ Headset Microphone (Sennheiser ek100)		Mainly used with headsets microphones or tie mics, aimed to transmit audio signals to the receiver using a 3.5 mini jack.
Wireless Signal Receiver (Sennheiser ew300)		Used to receive wireless signals from microphones and transfer it into the sound console using a XLR cable
Condenser Microphones (Sennheiser MKH Series)		Aimed to receive better quality of sound using different types of condensers specialized in high pitch and instruments and vocals.

Plug on (Sennheiser SKP 100)		This device is a solution to reduce the XLR cables on stage, which is potential danger to the performers. The plug on will transfer XLR signals to the wireless receiver, so that wired microphones can be turned to wireless. It will be more convenient for ASMs during scene change
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(Reference: Sennheiser)

Section 7.2.2 Common Sound Design Equipment

Name	Photo	Common Usage
Speakers		Play the audio after mixing
Sound Board		A tool to perform sound design

Section 7.3 Basic Sound Board Operation (Reference)



In a generally picture, sound design is mainly an action focusing on the mixing stage. After the audio is received through microphones or input from an electronic device such as a computer, sound designer will adjust its volume, pitch, eq, gain or even create an effect for that, and finally output the mixed channel to the speakers.

Section 7.3.1 Turning on and off

Turning On

1. Make sure all the faders on the sound board is pushed to zero
2. Turn on the power button at the back of the sound console set
3. Push the fader of the channel you want to broadcast

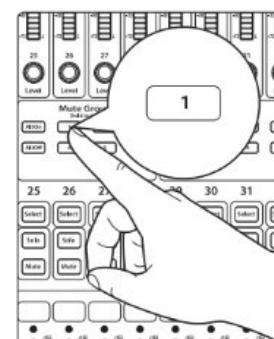
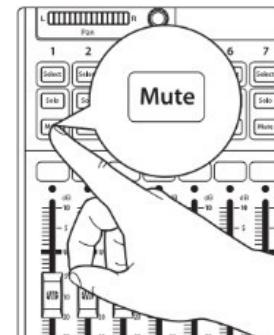
Turning Off

1. Mute all the channels and push the fader down
2. Turn the main switch off

Section 7.3.2 Assigning Mute Groups

Creating a mute group is quick and easy. In this example, we will be creating a mute group for Channels 1-10, using Mute Group 1.

1. Mute Channels 1-10.
2. Press and hold the Mute Group 1 button. It will flash for one second indicating that it is storing the group. When the group has been stored, it will illuminate.



(Reference: Pre sounds)

Section 7.3.3 PFL

PFL is aimed to pre-listen to the sound track before broadcasting to the audience, and also help sound designer to listen to every single channels in a detail way. Operator just need to plug in a headphone in to the PFL port at the board and select the channel he/she want to PFL.

Section 7.3.4 48V Power Button

The 48 volts supplied by way of the XLR input provides power for condenser microphones and other devices requiring continuous phantom power. Generally, it is for **WIRED MICROPHONES ONLY**. This power is supplied at a constant level to prevent any signal degradation.

Section 7.3.5 Gain

Gain is describing the sensitivity of the channel, divided by mainly high, mid and low. This function is helping sound designer to edit different pitch of the channel, such as increasing the gain of high level for an old man. Reducing the gain can also help to solve feedbacks.

(Reference: Pre sounds)

