SAMPLE SOUND CUE SHEET

Show: Page:

Cue	Input	Track	Channel Level	Count	Master Level	Notes

TECHNICAL INFORMATION FOR SOUND DESIGNERS

THE SOUND SYSTEM

The sound system in Nathan Seifer consists of four main components: the MiniDisc and cassette tape players, the mixer, the amplifier, and the speakers. To use the sound system to its fullest potential, you need to understand how the components work together. One way of explaining a system is in terms of the **signal path**, which refers to the path the signal (the electrical form of the sound) gets from your recording to your audience.

In Nathan Seifer, the signal usually begins at either the **MiniDisc player** or the cassette deck. These devices serve as your inputs. A microphone could also serve as an input device. All of your input devices feed into a **mixer**, which is the heart of the sound system. Using the mixer, you send your sounds to the right places at the right volumes. Coming out of the mixer, the signal goes to one or more **amplifiers** (or amp for short), which convert the line level signal produced by the mixer into a higher level signal powerful enough to drive a speaker. The amp in Nathan Seifer sends the signal to two **speakers**, mounted on the side walls near the front of the stage. The speakers convert the electrical signal into vibrations which we hear as sound.

When turning on the system, you should follow the order signal path. When an audio device is turned on or off, it will generally send out a signal spike. To protect the other devices, you should not turn it on until the devices that feed into it are already on. Thus, in Nathan Seifer, you would turn on the MiniDisc and cassette players first, then the mixer, and then finally the amplifier. When turning the system off, work backwards. Turn the amp off first, then the mixer, and finally the MiniDisc and cassette players.

USING THE MACKIE MIXER

Nathan Seifer is equipped with a very nice Mackie Microseries 1402-VLZ mixer, purchased in the fall of 1996. Mackie sent along a truly wonderful manual with the mixer, which you will find a copy of at the end of this document. It explains all of the nifty things you can do with the board (another term for mixer is "sound board") and even some technical things like a glossary of pro-audio terms, diagrams of various audio connectors, and a section entitled "Balanced Lines, Phantom Powering, Grounding and Other Arcane Mysteries". In fact, the Mackie manual is so well written that there is really no reason to say anything further in this section of the User's Guide to Nathan Seifer.

USING THE MINIDISC PLAYER

MiniDisc (MD) is rapidly becoming the playback medium of choice for Sound Designers. It offers more control than cassette, is cheaper and smaller than reel-to-reel, and is easier to use and quieter than both. MiniDiscs offer instant-start of cues so a designer can count on cues coming at the right spot every time, and auto-pause so that you don't need to worry that an operator will forget to bring down a fader before the next cue plays unintentionally. Newer MiniDisc machines also add the capability of very precise editing built-in to the machine, so some changes can be made on the spot in the theater. With

analog recordings, a change generally means a trip back to the sound studio after rehearsal and hours more work after everyone else has gone home.

To build your **show disc**, the MiniDisc or discs containing all of the cues for the show, you will need to schedule some time with the MiniDisc player/recorder. Nathan Seifer currently only owns one machine, so if there is another show using the deck for performances, this could be difficult. You can use the machine in the booth, which will let you use the Mackie mixer for more precise level controls and involves you bringing your source materials and playback units into the theater. Or you can make arrangements with the UTC coordinator and the other shows' designers to borrow the machine and take it to your room or wherever you are working.

You record music onto the MiniDisc just like you would onto a cassette or any other medium. Connect the output from the source to the input on the MiniDisc, press record on the MiniDisc, and then press play on your source. In that respect, it's pretty easy. Once you've got your cues onto MiniDisc, though, you can start doing new things. There is a copy of the MiniDisc manual at the end of this guide which explains in detail exactly how you go about executing the procedures described below.

The first thing to do is to divide each cue into its own track on the MiniDisc, if that hasn't been done already by the machine. (Each time you start recording from stop, it will create a new track number, and if the level drops to zero during recording, it will also create a new track number.) Tracks on MiniDiscs work the same way as they do on CDs, another advantage of MiniDisc over cassette.

Then you can start **editing**. It is a good idea to edit your cues so that there is no silence at the beginning. This way, when the operator presses play, the cue will go without pause. You do this by dividing the track at the instant the sound starts, and then deleting the first part (containing only silence). You can also cut off the end of the track the same way, as you might if the piece of music you are using is too long for your needs. It is generally a good idea, though, to leave more music than you need and to let the operator fade it out, unless the piece needs to end at a specific point. This will leave some flexibility in case something goes wrong on stage or you or the director decides to make a change. Once something is deleted, it is gone.

One of the other very nice features of MiniDisc is the ability to name your tracks and the disc as a whole. You can label the tracks with the cue letters to which they correspond, or a descriptive title of the cue, or anything else you might like.

MiniDisc machines come in two flavors: Professional and Consumer. Since the Professional decks cost about five times as much as the Consumer models, Nathan Seifer has a consumer model. In general, this is just fine. However, the consumer models have a tendency to **overheat** and fail and corrupt your disc if you leave them on for too long without adequate ventilation. To avoid this, don't leave the MiniDisc player on for more than four or five hours. If you must use it for longer (like during tech), try to spread out the equipment stack so that the MiniDisc deck can get some cool air. For best results, do not cover the vents on the top of the MiniDisc player.

USING MICROPHONES

At some point, you may need to use a microphone with the sound system. This may be to record a voice for playback in the show, or to allow an offstage voice to be heard through the speakers (also known as a "God Mic"), or simply to amplify a person or sound

onstage. Using the Mackie, this is relatively simple. The first six inputs on the board have XLR connectors to take a mic input. The thing to remember here is that microphones work at "mic level", while most playback units work at "line level", which is much higher than mic level. So you can't use a mic where a line level signal is expected, and vice-versa. In general, an XLR jack will take a mic level signal and a 1/4 inch will take a line level signal. (There are exceptions to this rule, however, especially on professional gear like the amplifier, where an XLR jack will be used for a line level signal.)

There are several SM-58 microphones (manufactured by Shure) in Nathan Seifer's inventory. These mics are excellent for vocal work, and will serve just fine to pick up any other sounds you might need them to, as well. They have a cardiod pickup pattern, which means that they will pick up sounds in an extended heart-shaped field in front of the microphone. Ideally, the mic should be about six to eight inches in front of whatever is producing the sound. You will need a mic cable (with a 3-pin XLR connector on each end) to connect the mic to the sound board. The female end of the cable goes at the mic and the male end goes at the board. If you are using the mic on stage, you'll need to use a longer cable to run out of the booth and down along the side of the seats.

TROUBLESHOOTING

Troubleshooting a sound system is a fairly complex problem, but with a basic understanding of the signal path it can be accomplished quickly and easily.

The most common problem is not getting any sound at all.

First, make sure that everything is plugged in and turned on. Check for power lights on all of your input devices (MD, cassette, etc.), the mixer, and the amplifier. If something is plugged in and turned on but there is no power light, check the fuse.

Make sure the deck is playing properly by watching for levels on the output meter on the MD or cassette deck. You can plug in a pair of headphones to the jack on the deck to double check. If you're not getting signal out of the deck, try a different tape or disc.

If that's not the problem, check to make sure the signal is getting into the mixer. Press the "Solo" button on the playback channel, and make sure the channel fader is up, the trim knob is up, and the mute button is out. Check for levels on the meter on the Mackie. If you don't have levels there, check your connections between the deck and the mixer. Then check to make sure that the trim is turned up, and that the EQ is not turned all the way off (to the left). If you're using a channel without a trim knob, check to make sure that the level button is set for -10, unless you are using some rented professional equipment that is designed to work at +4.

If you're getting levels on the channel in solo, make sure the main mix faders are up. Take the channel out of solo and make sure no other channels are solo'd (if anything is in solo, the "Rude Solo Light" will flash). With the channel fader up and the Main Mix faders up, you should get levels on the meter on the Mackie. If not, make sure the button labeled "Main Mix" under "Source" to the left of the meters is in.

If everything is fine through the board, check the connections to the amp. Make sure the levels are up on the amp. Then check the connections to the speakers. They could have come loose at the amp or at the speakers. Also trace along the speaker cable through the booth. Each cable has at least one splice in it which may have come apart.

If you are getting sound but it doesn't sound good, there are different things to try. First, check all of your connections to make sure they are secure. This should eliminate some potential problems in drop-outs or static. If you're getting hiss from your playback devices, especially the cassette deck, try re-recording at a higher volume. Also try turning down the amps. Adjust the trim on the input channels so the channel and Main Mix faders can run at "U" (Unity) levels. The higher the signal you are sending to a device, and thus the less amplification the device has to provide, the better the audio will sound.

If you are getting a hum through the sound system, it is probably caused by interference from the lights or other power sources. See if the hum changes when the light levels change. If it does, make sure that none of your audio cables are run next to lighting or other power cables. Plug all of the sound equipment into one power circuit, preferably one that doesn't have anything else on it. Make sure all of your cables are properly grounded and shielded (check the Mackie manual). This will eliminate most hum problems.

ADDING MORE EQUIPMENT

The Mackie mixer offers lots of room for expansion, allowing the Sound Designer more creative flexibility. The board can take up to 16 channels of input, and direct it to 6 separate outputs. In the existing sound system, it is only using four channels in and two channels out.

By renting or borrowing more equipment, you can add effects speakers on stage, or in the back of the house, modify and distort voices, or play back complex cues from more than one source at once. See the Appendix for a list of vendors and rental houses.

If you want to add more input devices, such as another MD or cassette deck, or some microphones, just plug them in to the back of the board.

If you want to add more speakers, you can do one of two things. First, you can split the signal from the amp to more than one speaker or daisy-chain the speakers on each amp channel. This gives you more speakers, but limits your control over any individual speaker. Your second option is to add more amps. You can connect the second amp to the Alt 3/4 bus on the Mackie, but then you could not send a channel to both sets of speakers at once. If you want that capability, then your best bet is to use the Aux sends to feed your second amp.

To use an external effects processor, you can either use the channel insert or, preferably, use one of the aux sends and route the return either through two channels on the board or the separate Aux Return inputs.

LIVE EFFECTS

There are some sound effects which are easier to produce live than to try to create using a recorded cue. Very often phone rings and doorbells fall into this category, as do door slams and sometimes footsteps off stage.

Doorbells and buzzers can be created using off-the-shelf parts from a hardware store, wired just as the would be in a house. The only difference is that the ring button is generally located in the booth instead of on a door frame and the bell is somewhere backstage instead of in the front hallway.

Phone rings can be created using an electric bell from a hardware store, or using a working phone and a telephone ring-voltage generator, such as a **Tele-Q** manufactured by CEI Inc. The Tele-Q is a little black box that takes a nine-volt battery and has one button on top and a standard modular phone jack on the end. Any modern phone will ring when connected to the Tele-Q. This unit costs around $120 and is available for sale from places like Norcostco, but you may be able to rent it from a rental house. (See the Appendix for Vendors and Rental Houses.)

STAGE MANAGEMENT

Stage Managing in Nathan Seifer poses new challenges for even the most experienced Stage Manager. Your booth is cramped and, despite the fact that you have traveled through half of Ford Hall to get to it, it is open to the audience. You are also often missing the support staff that you'd find in a professional theater. However, you can generally find people on your production staff and sympathetic people who have come before you who will help out and share your pain.

The duties of the Stage Manager will vary from show to show, and especially from director to director. Some directors will like to do everything themselves, while some will want their Stage Manager to do almost everything. This guide cannot begin to address every issue that a Stage Manager will face. Instead, I hope it serves as a starting point for your experience. I highly recommend further reading on the subject, especially Ilene Mass' thesis from 1995; you should also talk to Ms. Barbara Harris in Spingold. Ms. Harris can provide a copy of Ilene's thesis and a tremendous wealth of other advice and information.

ASSISTANT STAGE MANAGERS

You will want to have at least one Assistant Stage Manager, sometimes two on a larger show. Just as your relationship with the director will vary from show to show, so will your relationship and division of labor with your ASM. During rehearsals, the ASM will serve as your assistant, just as the name would suggest. He or she can help take blocking, or stay on book and take line notes, or anything else that will free you to concentrate on the larger picture. He or she will also stand in for any actors who may be absent. During tech rehearsals and performances, the ASM will be your eyes and ears backstage. He or she should stay on headset at all times, ready to act on your behalf should the need arrive. The ASM will also be responsible for props and furniture on and back stage and will directly supervise the run crew.

BEFORE REHEARSALS BEGIN

The first thing you should do is talk to your director and agree on what will be expected of you.

Once **audition** and callback dates have been set, you will need to contact the University Events Center (UEC) to book a space for auditions, and again for callbacks. If you want to audition in Nathan Seifer, you will need to check with the Undergraduate Theater Collective (UTC) as well, although this availability, along with your rehearsal and performance dates in Nathan Seifer, has probably already been determined at a UTC meeting.

You will need to create an **audition information sheet and sign-up sheet** and post them on the UTC callboard near the phones in Usdan upper lobby. Find out from the Director how long each person will have to audition, and what (if anything) they should have prepared.

You should also create an **audition form**. The audition form is a way for you to gather contact information from each actor, and for the director to gather information about

the actor's experience and talents. You can generally distribute and collect these forms at the auditions. Actors can complete them while waiting to audition.

After the show has been cast, either you or the director will post the final **cast list** on the UTC callboard.

Once the cast is set, you should create a **contact sheet** for the production. Include the cast, Stage Management staff, Director, Designers, and any other people involved with the production, such as a Musical Director or Technical Director. Include names, phone numbers, campus mailboxes, campus addresses, and even email addresses if you'd like. It is also a good idea to include numbers for Public Safety and restaurants that deliver. You should distribute this list to all members of the company at the first rehearsal.

At some point before the first rehearsal, you and the Director should create a **rehearsal calendar**, including dates and times. You can then go to the UEC and book rehearsal spaces for these times. Depending on your show, you may try to work in Nathan Seifer for the entire time. If other shows are in the space, you could work in places like Alumni Lounge, International Lounge, Shiffman 219, Pearlman Lounge, or Silver Auditorium in Sachar. You might try to book space in Spingold, either the rehearsal room or the Crawford studio, or in some of Slosberg's rehearsal rooms. In a pinch, you can even work in places like Ziv Commons.

Another thing you will want to do before the first rehearsal is make a **prompt script**. Basically, the prompt script is a copy of the original script photocopied and enlarged so that you have each page of the script on its own 8 1/2" x 11" sheet. It should be enlarged enough so that the text is easily readable but you should still have large margins and blank backs of pages to take blocking notes and write in light and sound cues during tech. You can put your prompt script in a large loose-leaf binder, along with rehearsal schedules, the contact sheet, and any other paperwork associated with the show.

DURING REHEARSALS

During rehearsals, your responsibilities increase even further. In many respects, you are the secretary for the production. It is the Stage Manager's job to ensure that the cast knows when they are called for rehearsal, that they are there on time, and that they are ready to work. You should post or distribute the rehearsal breakdown (more detailed than the original calendar) as far in advance as possible, and keep a copy of everything in your prompt script.

The Stage Manager is responsible for taking **blocking** notes during rehearsals. In brief, this means writing down the actions of the actors in your script. Include entrances and exits, props used, crossing the stage, sitting and standing, and interactions with other actors. The key is to take all of these notes in pencil, because they will change many times. Also, you will want to stay "on book" during rehearsals, so that you can help the actors when they forget their lines, and give **line notes** at the end of the night. Line notes are most helpful if you can tell the actor not only what he or she should have said but also what was said, as well as the page number of the erroneous line.

It's a good idea to take **breaks** periodically. It generally falls to the stage manager to stop rehearsal for breaks and to make sure that the rehearsal starts up again on time. Actors Equity ("The Union of Professional Actors and Stage Managers in the United States") has in their contract a system of break periods that is reasonable and practical, and makes a good guide to follow. Equity calls for a break of five minutes after fifty-five of

rehearsal, or ten minutes after eighty. If you are in a run where it is not practical to stop, Equity requires at least a ten minute break at intermission. In a long rehearsal, there must be a meal break of at least an hour and a half after five hours. And finally, the cast should have at least 12 hours off between the end of one rehearsal and the start of the next.

Additionally, the Stage Manager is the liaison between the people who are at rehearsal every day -- the cast and the director -- and the people who are not -- the designers and the production staff. This relationship is a bit distorted in the undergraduate theater groups, where people often wear many hats, but the principles are still the same. It's up to you to make sure that people get the information they need, either in the form of periodic (as often as daily) **rehearsal reports**, or scheduling production meetings, or just making phone calls. You will also coordinate with the costume designer on getting **rehearsal costumes** and shoes and scheduling costume fittings, and with the scenic designer and director on getting **rehearsal props and furniture**.

Gathering items for the cast to work with in rehearsal is a group effort, involving the designers, director, and the cast, but the ultimate responsibility for this falls to the Stage Manager.

As the Stage Manager, you should be the first person to get to rehearsals, and the last person to leave. When you arrive, you will want to unlock whatever doors people will need to open, turn on the lights, clean up after the people who used the space earlier in the day, and get the space ready for your rehearsal. This may involve setting up a table for you and the director, setting out rehearsal props and furniture, and sweeping. If you are working in Nathan Seifer, you will want to read the section on Opening and Preparing Nathan Seifer, under General Information.

TECHNICAL REHEARSALS

Before you go into technical rehearsals (tech), a week or so before the show opens, you will want to assemble everything you will need. This includes things like getting the cues from the designers (see paper tech, below) and finding a crew. A good place to get a run crew is from the other members of the club that is producing your show. Chances are you have already found an Assistant Stage Manager or two that way -- people have come out of the woodwork at club meetings or gotten in touch with you through your producer. You will need to decide how many more people you will need backstage to help with scene changes, costume changes, and handling props. Up to now, you will have been doing most of this on your own in rehearsals, so you should have a pretty good idea of your needs.

One other thing that you should know about before you go into tech is **calling cues**. At paper tech (see below), you will get from the designers the placement of the cues. This refers to where in the script the designer wants the cue to take place. You will have to ask your designers if they are telling you when they want the cue to start, or finish, or something in between. Once you have written a cue into your script, you can go back and add warnings and standbys. A warning will tell the operator that there is a cue coming up, and they should double check their readiness. A standby will tell the operator that you are about to call the cue, and they should have their finger on the button (or whatever action is appropriate) so the cue can happen immediately when you say the word 'go'. You want to identify the cue with each call. Here is an example of how you would call light cue 39: "Warning, Light Cue 39". (pause, around 30 or 40 seconds, depending on how much advance warning your operator needs). "Standby, Light Cue 39". (just a few seconds pause here). "Light Cue 39, Go!" The operator should know that they don't do anything until they hear the word, "Go." Everyone on headset should know that only the Stage

Manager uses that word, and only when there's really a cue, and also that no one talks during a Standby or even a Warning unless there's a genuine emergency.

There are several variations on the technical rehearsal. Most shows involve all of these in some form or another. You will want to talk with your designers and plan things out, and then publish a schedule that everyone can follow. I will list the elements of tech in the schedule here, and then describe them in detail below. Paper tech can be at any convenient time for the parties involved. Traditionally, dry tech takes a full day, wet tech another full day, and then you can have as few as one or as many as four or five tech/dress rehearsals before you open. In Spingold, dry tech runs noon to midnight on Friday, wet tech is noon to midnight on Saturday, dress/tech starts at noon on Sunday, and the rest of the day Sunday (until midnight) is spent fixing problems or running the show. Monday night there is a final run-through, and Tuesday is preview with opening the next night. It will be up to you and the production staff to determine how much time your show will need in tech, but I recommend a schedule similar to Spingold's model. By the end of tech, you should have the show ready to go and running under performance conditions, so the only thing that is new on opening night is the audience.

Tech generally starts with a **paper tech**, when the Stage Manager sits down with the designers and writes the cues into the prompt script. This, of course, assumes that the designers have worked out their cues in advance, which is a reasonable assumption. But this can take place in a small meeting, and saves a lot of time during dry tech, when lots more people are around.

Once you have got the cues, you are ready for **dry tech**. Dry tech is also known as a Tech Without Actors, which is an accurate description. It's a chance for the lighting designer to see his or her cues on stage and show them to the director, and then make changes. It's rare that all the cues have been written before dry tech, so things generally slow down later in the day as the designer starts writing cues from scratch. It's also the time for the sound designer to hear the sound cues and set levels, and it's generally the first time that you get to see everything all together -- the set, the lights, and the sound. The Stage Manager generally starts sitting at the **tech table** in the house at dry tech, along with the designers who are present. There is no pre-built tech table in Nathan Seifer, so it's up to you and the design team to come up with one. You can do without one, and just use those little desks on the seats, but that won't work very well for a big loose-leaf binder. The easiest thing to do is just to take a sheet of plywood and lay it across the backs of the seats, so that you are sitting about 5 or 10 rows back. During dry tech, you will want to practice calling tough cue sequences. If you have set changes, this is the time to work out the details with your run crew.

At some point before you bring in the actors, you will need to make sure that you have got enough **running lights** (low wattage lights, often gelled blue) backstage, and enough **glo-tape** on your spike marks and on anything that an actor might walk into or trip over in a blackout (things like stairs, doorways, etc.). You will also need to prepare **props tables** in the hallways backstage. There should be a place marked for every prop on a table. This way, every prop will go in the same place every night, so actors will always know where to find them and ASM's can easily see if anything is missing. These are good things for your assistants to do while you are working with the designers during dry tech.

You will also want to prepare a **sign-in sheet** that you can post in a central location backstage. Each actor and crew member (and musician, if applicable) should sign in when he or she arrives for tech rehearsals and performances, and no one should leave after they have signed in without telling you. This way, you can quickly and easily see who is present

and who needs a reminder phone call. You can either make a big chart with everyone's names down the side and rehearsal and performance dates across the top, or make a new page for each day. Either way, you can also use the sign-in board as a place to leave notes for the entire cast each night. Some things you will want to post are the time of the next performance and any special calls they might have, like photo calls or a brush-up rehearsal.

Once you have the cues in your book, the sign-up sheets on the wall, and the running lights ready backstage, you are ready for **wet tech**, also known as Tech With Actors. At the beginning of the day, when you first bring in the actors, you will want to take some time and explain the plan to them all at once. Explain to them that this rehearsal is about the tech, not the acting. You may be asking them to start and stop at what seem like random times, and when you ask them to stop they should stay quietly in place until you tell them to go on or ask them to take a different position. You should give everyone plenty of time to walk around on the set, if appropriate, since it's often the first time that the actors have seen the entire set installed. Take the time to show the actors the real props, and make sure they know which real props are replacing which rehearsal props. Make it clear that, while you will be asking them to stop for the designers, they should feel free to ask you (or anyone else) to stop at any time if they don't feel safe. Things look very different under the lights, and it's easy for things to go wrong and people to get hurt if everyone doesn't know what's going on.

At some point, either during wet tech or at the next rehearsal, the director and designers will want to see the cast in full costume and makeup. Find out when that is and make sure everyone is aware of the schedule. Before this starts, you will need to make sure that the costume and makeup staff have everything in place and ready to go. Generally, they will set up in the Balcony, taking it over as a kind of hybrid dressing room and green room.

Things can get pretty confusing during wet tech, and it's up to the Stage Manager to keep everyone informed and to keep things running smoothly. If the lighting designer is taking too long on one particular cue, ask if he or she can take a note and move on. Very often a director will try to take advantage of downtime (while a designer is working) to get in some acting notes. That's fine, as long as when the designer is ready to move on, the director stops. The director should also be devoting his or her attention to the technical aspect the designer is working on, and not so much to the acting. It's your place to make sure that everyone is getting the attention they need and that everyone is on the same page. If you have stopped for more than a few seconds, yell out to everyone where you are in the script when you start up again. Also keep in mind that you are still required to take breaks during tech (both 5 minutes out of 60 or 10 out of 90 and every five hours for a meal).

During Wet Tech, the designers (lighting, scenic, sound, and sometimes costumes) should have a chance to see their work under something close to performance conditions. The set will look different under the lights, as will the costumes if they are available for wet tech, and all the designers will have to work together with the director to achieve the desired effects. Generally, you will go through the show in order, stopping as needed to fix things, and skipping over any long sections without cues. If you feel the need, you can go back and run things again to make sure everything is working right. In a complex show, this can easily take the full 12 hours allowed in a day, and even some of the next. But in Nathan Seifer, if things run smoothly, you can be home long before midnight.

Once you have all of the bugs worked out, you are ready for a **Dress/Tech** rehearsal. In a dress/tech, you try to run through the show completely. But since this is the first time you have actually run it with costumes, lights, sound, and scene changes, chances are good that something will go wrong. Everyone should be prepared to stop as needed.

This rehearsal, along with some extended time for the cast and crew to get ready and for a good notes session afterwards, will probably take the entire night.

Then, hopefully, you will have time in your schedule for one or more full **Dress Rehearsals**, culminating in a **Final Dress Rehearsal** before you open. When you are running a full dress rehearsal, you want to get as close to real performance conditions as possible. Give the cast half-hour, fifteen minute, ten minute, and five minute warnings before you call them to places for the top of the show. Make sure they have all of their costumes, props, and makeup before half-hour. Also make sure that the stage is set and all of the lights are working and everything is ready to go, so that you can hand the house over to the House Manager at half-hour. Then, while everyone is getting ready, take some time for yourself to look over your book, sit in the booth and stare at the stage, or whatever you need to do to get yourself mentally ready to call the show. Run without stopping, timing it on your stopwatch, take a regular-length intermission, run the curtain call, then let the director give notes after the show. The Stage Manager should be present at the notes sessions to get any notes that the director might have for the crew or the designers.

PERFORMANCES

By this time, you should know the show backwards and forwards. You have had a chance to run it several times without an audience, even under performance conditions, and maybe had an invited audience at your Final Dress. You have worked out all the technical problems, and struck the tech table. The time has come. Say farewell to the director and the designers, say hello to the house manager and the ushers. It's your show. It's up to the Stage Manager to ensure the artistic integrity of the show once it has opened. Take notes during the runs, and give them to the cast either after the show or at half-hour the next day. Don't go crazy, but if the actors suddenly decide to change the script, it's your job to steer them back in the right direction. It's also your job to watch for any technical problems, like lights not working or furniture falling apart. If you let the designers know, they should take care of it. If they don't, then you should handle it if you can. But the most important thing to remember is **have fun**!

Sample Audition Form

Name _____ Year _____

Phone _____ Alt. Phone _____

Mailing Address _____

Living Address _____

Email Address_____

height _____ weight_____ age _____

eye color_____ hair color _____

Emergency Contact:

Name _____ Phone _____

Please list any instruments you play _____

Please list any foreign languages you speak _____

What have you prepared for your audition?

Do you have any additional comments for the director?

Do you have ANY conflicts during the rehearsal period?

Sample Rehearsal Report

Rehearsal # Date:
Location: Stage Manager:

Start:	Resume:	Resume:
Break:	Break:	End:
Resume:	Resume:	**Total Rehearsal Time:**
Break:	Break:	

Planned Activity:	**Actual Rehearsal**:

Late/Absent Personnel:

General Notes:

Props Notes:

Set Notes:

Costume Notes:

Lighting Notes:

Sound Notes:

Sample Performance Report

Performance # Date:

Location: Stage Manager:

Curtain Time:

Act I start:	Intermission time:	Act II start:
Act I end:		Act II end:
Act I time:		Act II time:

General Notes:

Tech Notes:

TECHNICAL DIRECTION AND SCENIC CONSTRUCTION IN NATHAN SEIFER

Serving as the Technical Director for a production in Nathan Seifer is a unique challenge. Your tools are limited, your construction space is almost non-existent, and good help is hard to find. But with a little creativity and common sense, you can build a safe and sturdy set and have a good time doing it. In most professional theaters, the Technical Director is only in charge of scenic construction (and is often also the Master Carpenter), while the Master Electrician is in charge of implementing the lighting design and the Costumiere (or Costume Mistress) is in charge of implementing the costume design. In Nathan Seifer, the Technical Director can end up in charge of any or all of these departments. This guide will address some of the issues that will come up in constructing a set in Nathan Seifer, but will not attempt to discuss elements of scenic design.

WORKING DRAWINGS

The first thing you will need to do after the set has been designed is to figure out how to build it. One way to do this is to create a set of working drawings. These drawings will show each element of scenery to be constructed, in accurate scale, showing how all pieces of lumber will fit together. From these drawings, you can develop a fairly accurate idea of how much lumber and hardware you will need to purchase to build the set, and make your producer happy by pricing out your lumber order.

If you are not the first show in Nathan Seifer for the season, you will need to plan your constructed pieces in such a way that they will be easy to load in quickly when the time comes. Each piece should be small enough to fit through the stage doors and light enough to be easy to carry. You should decide far in advance exactly how each unit will connect with the others around it, and build your pieces with edges that will easily join together.

CONSTRUCTION

Once you have planned your construction, you are ready to get your supplies and start building. You will probably not be able to fit all the lumber you need into a car, so you may need to arrange for delivery. Both Home Depot and Mass Hardware can do this for you. Keep in mind that it may be several days after you place your order before the delivery can be made, so plan ahead. Be sure that Nathan Seifer (or at least room 28) is available at the time you have scheduled your lumber order.

You can build your set in pieces in room 28 in Ford Hall (downstairs across from the snack machine), or in the hallways in Ford after business hours. You should always have at least one person working with you during construction to help hold your materials and double check your work. When using the power saws, be sure that you have adjusted the blade depth so that you will cut through the wood and not the surface beneath, and always wear eye and ear protection.

At the end of each day of construction, you should allow time to clean up your work and your working space. The other users of Ford Hall will not be happy to come in the next morning and find lumber and sawdust scattered through the hallways. You will also find it easier to start work again if things have been put away properly. By putting away your lumber, you can find which scraps can be used and which are garbage, and ensure that no good lumber gets mistaken for trash. By putting away your tools, you can make sure that nothing disappears or simply gets lost in a pile of wood somewhere. When you go looking for a screw driver you will be happy to find it in the toolbox instead of in a corner under a platform.

For more information about building specific items, like platforms or flats, check out Gillette's *Theatrical Design and Production* in the Brandeis library. Another excellent reference is the *Backstage Handbook*, by Paul Carter, now in its third edition. (These and other books are listed in Appendix B: Suggested Reading.)

SCHEDULING

One of the most important things you will do as a Technical Director is to plan out your schedule. Once you have seen the scenic design and made your working drawings, you should have a pretty good idea of how long it will take you to build the set. Generally in Nathan Seifer, one show will close on a Sunday and the next show will open later that week. Your goal is to get the first set out and the second set in as soon as possible. As much of the set as possible should be built before load-in, so all that remains to be done is to bring the pieces into the space and attach them.

You will be competing for time in room 28 (which serves as your wood shop) with the other shows in production that semester. You will also need to find times when you can work without disturbing the other people who work in Ford Hall (including Public Safety). You should talk to the other technical directors and work out a schedule for sharing the space that gives everyone enough time to build their own sets before their shows open.

Before your load-in (which will usually end up combining with strike from the previous show) you should have a concrete, specific plan for installing the set. Determine which piece is the most important or central to the set, and install that first. Then work out from that, adding one piece at a time. For your strike, you can generally just reverse this plan. Don't forget to allow time for the outgoing show to paint the walls and floor black if needed. Take advantage of all of the people who are there to help you with strike. Put them to work carting away pieces of the old set, painting things black (or whatever color the new show needs) and bringing in pieces of the new set.

GENERAL INFORMATION

OPENING AND PREPARING NATHAN SEIFER

The first thing you will want to do when you get to the theater is open up and turn on some lights. If you have come into Ford from the main entrance and have gone up the stairs one flight so that you are facing the engraved glass house doors of Nathan Seifer, go around to your right, down the hall to the second door on the left (almost at the end of the hall). Your master key will open that door (as well as the other three upstage doors on either side, and the door to the Funky Room).

Inside the door on your left is a standard light switch, which will turn on a bare bulb in this little alcove. You will see several circuit breaker panels and some switches between them. There are also three white household-style sliding dimmers. These dimmers control the **houselights**. (The houselights are divided into three sections -- one basically over the stage, one under what used to be the balcony, and one in between.) There is also a master switch for all three sets of houselights, connected via conduit pipe to the three dimmers. You will need to turn this switch on to use the houselights and you should turn it off at the end of the night in addition to turning down all three dimmers.

Also in this room are the controls for the **high-volume ventilation system** in Nathan Seifer. This system is not quiet, and is especially loud up in the balcony which is now a classroom. You might not want to use it when classes are in session. There is a blower and a fan, and you can decide which is more appropriate for your situation. (Do you want fresh air from the outside, or do you want to suck up all that sawdust that's in the air?)

Finally, there are controls for the **fluorescent lights**. You won't want to use these during a performance, but they can add some much-needed **work light** when you are getting ready. If you go up the stairs towards the stage, on your left, just before you get on stage, is a switch that controls the on-stage fluorescents intended for use as work lights. In the rightmost breaker panel on the wall with all the other switches and panels are the breakers (to be used as switches) for the fluorescent lights along the top of the house walls. These don't work well as houselights because they won't dim out like the incandescent will, but they will throw more light into the house for rehearsals, and, in particular, there's one that puts lots of light into the booth.

In short -- for rehearsals and set construction, turn on all the lights: the house incandescent with the dimmers and the master switch, the house fluorescent controlled from the breaker panel if you want that light, and the on-stage fluorescents with the standard switch by the door to the stage. If you need them, you can also turn on the blowers. For performances, turn off all the lights except the three houselight dimmers, and turn off the blowers.

CLOSING NATHAN SEIFER

The first thing to do when closing up is to make sure that everything is put away. All tools should be locked up in the Funky Room or Room 28, and all props and costumes should be brought into Nathan Seifer from the hallways. If you have moved the piano or the extension ladder out of the theater, put them back inside before you leave.

Once everything is put away and everyone else is out, you can start shutting down. In the booth, make sure the light board, sound board, sound amp, MiniDisc player, and cassette player are all off. Turn off any running lights and close and lock the door. Turn off the lights in the balcony (the switch is next to the door away from the booth). Shut off the three big lighting disconnects in the Funky Room, turn off the lights, and lock the door.

Go down to the second floor and shut the main doors into Nathan Seifer. If the door has been unlocked with an allen key, you will need to unscrew the set screw on the hinge of the crash-bar on the door. Once the bar is released and the latch on the side of the door pops out, the door is ready to lock.

Head back to the upstage left exit door, where all the breaker panels are located. Turn off the blowers and fan (the big button switches between the panels near the top). Turn down all three houselight dimmers and turn off the master houselight switch. Turn off the fluorescent worklight switch near the entrance to the stage. Turn off the lights in this little room (the switch is near the exit door), then leave and lock the door. Double check the other three stage exits to make sure they are locked, and you are all set.

HEADSETS

As nice as it would be for Nathan Seifer to have a full set of ClearCom **intercoms**, we generally just use two-way wireless headsets from **Radio Shack**. These units are nice for two reasons -- they're wireless and they're relatively cheap. But they also have quite a few drawbacks.

The biggest of these problems is that only one person can talk at a time. Because all of the units transmit and receive on the same **frequency**, if more than one person tries to transmit, the two signals will interfere with each other and neither will be heard. The headsets can also receive interference from any number of other Radio Shack products that use the same frequencies (around 49 MHz), including baby monitors and cordless phones.

One possible solution to this frequency overlap is to use the five-channel version of the Radio Shack headsets. While these units are more expensive, they have better circuitry in them, and will allow you to change frequency if someone in a nearby building is using a device on one of the five available frequencies. You can use both the one- and five-channel versions together, although you will be limited on all units to the single channel in use by the one-channel unit. Depending on the frequency installed in the one-channel unit, you will be able to hear it on one of the first two channels on the five-channel unit.

If you find that your headsets are not working as well as they might be, there are a couple of things to try. If you are not getting interference, but you are just having trouble hearing or understanding other people, try turning the volume up. There are volume controls for the microphone and the headphone on each beltpack. Generally, when **batteries** are new, you will want to set the volumes at low. As the batteries wear down, you will need to turn the volume up. If the volume is already on high, it's probably time to put in a fresh 9V battery. If you are getting food for concessions from Costco, ask your producer to get some 9 volts from there, too. They generally have good prices on batteries.

Fresh batteries can also help overcome signal interference (static and the like). If your headsets have enough power (from new batteries) and are close enough to the other headsets, they can sometimes overpower the offending devices. One other thing to try is playing with the orientation of the antennas on the headsets. If you can tuck them behind your ear, you can sometimes get your entire body to work as the antenna.

It is not unlikely that a bad headset may be broken and unsalvagable. The Radio Shack headsets can only take a certain amount of use and abuse before they fail. Three or four shows is often their limit. The UTC should be prepared to buy new headsets at least once a season as needed.

Finally, these headsets have a three-way power switch. Off, manual, and VOX. When set to manual, you need to push and hold down the transmit button in order to communicate. VOX, on the other hand, will allow hands-free operation. As good as this sounds, it means that if you cough, you will prevent anyone else from talking. If someone accidentally sets their headset to VOX and the starts having a conversation backstage, it's nearly impossible for you to get a word in to tell them they're on VOX, and you will end up without any communications. Thus, it's a good idea to instruct your crew to be very careful not to use VOX.

An alternative to headsets that isn't often used in Nathan Seifer, but could save your neck in a pinch, is **cue lights**. Basically, a cue light is a system for the Stage Manger to give cues to the crew by turning on and off a light. They're not very complex -- a switch at the Stage Manager's position with a cord running to a light bulb at the crew member's position. When the Stage Manager turns the light on, that's a standby, and when the light goes off, that's the go. If you want to get more complicated, you can wire in a light in series at the Stage Manager's position, so that he or she can see if the light at the other end is on and working.

STAGE DIRECTION TERMINOLOGY

When referring to positions on stage, especially when one person is on the stage and another is in the audience, it is easy to become confused as to which person's right or left is being discussed. To alleviate this problem, it is conventional to speak of Stage Right and Stage Left from the point of view of an actor on stage facing the audience. Similarly, upstage is towards the back wall and down stage is towards the audience. To easily remember this, think of a raked (or sloped) stage. The stage floor is higher (more "up") at the rear. If someone asks you to move "on stage", that means towards center, left-to-right. Offstage is towards the side of the stage. Finally, less useful in Nathan Seifer, "in" and "out" refer to height above the stage. To fly something in means to bring it lower, and to take something out means to make it higher until it is no longer visible.

CHANGES AND PURCHASES MADE

In the fall of 1996, I presented to Rebecca Bagatelle, the then-head of UTC, a plan to spend $5000 of the accumulated UTC funds to upgrade the equipment in Nathan Seifer. This section details the purchases that were made, and makes some suggestions for what could be done in the future with additional UTC funding.

SOUND:

The existing mixer/amp unit was removed and discarded. It was replaced by a Mackie 1402 VLZ mic/line mixer ($423, BSW) and an ElectroVoice 7100 stereo power amplifier ($411, Production Advantage). A Sony MDS JE500 MiniDisc player ($450, J&R) was also purchased to supplement the existing cassette deck.

No changes were made to the existing Bose speaker pair mounted on the side walls or to the cable run from the booth to the speakers.

LIGHTS:

Several additions were made to the lighting inventory. Fourteen used ETC Source Fours were purchased, six 19 degree units and eight 26 degree units ($185, BASH). Six PAR-64 cans ($35.50, Production Advantage), 4 MFL PAR-64 lamps and 8 WFL PAR-64 lamps ($23, Production Advantage) were also purchased. All lighting units came with c-clamps and color frames.

To hang these new instruments, I also purchased ten 24 inch double-tee sidearms ($32, Production Advantage) and 6 18 inch single-tee sidearms ($21, Production Advantage), and thirty black safety cables ($1.95, Production Advantage).

I also investigated the existing dimmers, since only eleven of the eighteen were working properly. I discovered that, although the packs were wired to take a three-phase four-wire power supply, they were only getting a single-phase three-wire supply. Put simply, only the first four dimmers of each six-dimmer pack were getting power. With some help from the Brandeis Electricians, the packs were rewired so that each leg of the existing power feed was split to three dimmers instead of two. This added six more dimmers to our inventory, but effectively limited their capacity to 17 amps (instead of their rated 25 amps) due to the reduced power supply. Once there was power to all of the dimmers, I discovered that one of the dimmers has a broken fuse holder and one is simply broken.

SUGGESTIONS FOR THE FUTURE:

To further improve the sound system, I would recommend the purchase of a second MiniDisc player for the booth and perhaps even a third to lend out to Sound Designers. I would also recommend getting another convection-cooled amp (one without a fan) and pair of smaller speakers (such as RadioShack Min. 7's) to put in different places on the set for effects and other such purposes. The Aux or Alt 3/4 outputs on the Mackie board could drive the second amp.

To improve the lighting equipment, UTC should start with the dimmers. With the addition of the Source Fours and PARs in 1996, Nathan Seifer currently has more lights than can be controlled with the existing system. The first step would be to get the broken existing dimmers fixed by Jim DeVer. After that, the UTC should get Brandeis to install more power into the Funky Room. To fully power the existing 3 packs would require nine 50 amp circuits. Right now there are only six. At the time that this power cable is being run, UTC should also ask for enough power for one or more additional dimmer packs for future expansion. This would give shows the ability to rent more dimmers if they need, or perhaps for the UTC to buy another pack in the future.

One other item that should be addressed by the UTC is the lack of a useful Front-Of-House lighting position in Nathan Seifer. Ideally, there should be a pipe across the balcony wall about 25 feet above stage level instead of the useless existing pipe which is only 13 feet above stage level. If there is money available, it would be nice to install some kind of catwalk below this new pipe. This would greatly speed hanging and focusing of the lights, since it would cut out a lot of ladder-moving time. Even without the catwalk the pipe would be quite useful to improve the lighting in Nathan Seifer.

APPENDIX A: VENDORS AND RENTAL HOUSES

LIGHTING:

Local:

High Output, Cambridge, MA. (617) 787-4747
High quality rental equipment, new equipment, used equipment, and expendables (lamps, gaffer's tape, gels, gobos, etc.). Easy to drive to on short notice. They stock a large inventory of equipment, so they are likely to have what you need, but they require a safety deposit on rentals.

B/N Productions, Woburn, MA. (617) 938-9430
Good prices on rentals, but their inventory is not quite as large or always as nice as High Output's. They also stock expendables at good prices, and they are convenient by car. A popular choice with clubs for their prices.

Barbizon, Woburn, MA. (617) 935-3920
Sales only, no rentals. A large variety of products ranging from gaffer's tape to complete lighting systems.

Advanced Lighting & Production Services, Randolph, MA. (617) 961-3066
Repairs, equipment rentals, new equipment.

Jim DeVer at ALPS, (617) 464-0151
Jim is a very nice guy who knows all sorts of stuff about our dimmers. He's the guy to call if you are having dimmer problems, or if you want to think about buying or renting more.

Out Of State:

Production Advantage, Winooski, VT. 1-800-424-9991 Fax (802) 655-5107
Expendables, new equipment. Strictly mail-order, excellent prices. The place to call for lamps and new equipment if you can wait for the mail or if you can pay for overnight shipping. They supplied most of the new lighting equipment in Nathan Seifer, except for the used Source Fours.

Production Arts Lighting, NJ. (201) 440-9224
One of the largest lighting suppliers serving NYC, they will ship to you anywhere. They also sell new and used equipment and expendables.

BASH, NJ . (201) 863-6364
Another large rental house in the NY area. This is where Nathan Seifer got its used Source Fours. Like PAL, they will ship anywhere, and sell new and used equipment and expendables.

Kinetic Artistry, MD. (301) 270-6666
A large rental/supply house serving the Washington, D.C., area. Again, they will ship wherever you need it.

SOUND:

Local:

Boston Light and Sound, Boston, MA. (617) 787-3131
Rental, new equipment, and expendables of all sorts. Dave Wilson in Spingold does a lot of business with BLS. Ask for Zeke Zola.

Talamas Co., Watertown, MA. (617) 923-0166
Sales, rentals, and expendables. A little more expensive than some other places, but high quality equipment and a friendly, knowledgeable staff, and very convenient by car.

Radio Shack, everywhere, including three locations in Waltham.
Cables, adapters, batteries, fuses, headsets, and those little things that get you down at the last minute.

Out-Of-State:

Production Advantage, Winooski, VT. 1-800-424-9991 Fax (802) 655-5107
New equipment. Strictly mail-order, excellent prices. They supplied the ElectroVoice amp in Nathan Seifer.

J&R Music World, NY, NY. 1-800-221-8180
Good prices on consumer audio gear, blank tapes and MD's. J&R supplied the MiniDisc player in Nathan Seifer.

Broadcast Supply Worldwide, Tacoma, WA. 1-800-426-8434
Good prices on professional and some consumer audio gear and random other equipment. WBRS does a lot of business with BSW, and they supplied the Mackie mixer in Nathan Seifer. Ask for John Lynch, and be sure to mention that you are with Brandeis University for educational pricing.

GENERAL:

Norcostco, Fairfield, NJ. 1-800-220-6940
Boston Office: (617) 247-3247
A major national theatrical supplier, with lighting equipment and expendables, costumes, makeup, props, paint, sound equipment, intercoms, and stage hardware for sale or rental.

Boston Costume, Boston, MA. (617) 482-1632
Rentals of theatrical costumes, wigs, beards, etc., and sales of stage makeup. A decent sized in-stock selection and they can order whatever you need.

Eastern Coast Costumes, Moody St., Waltham, MA. 647-1175
Not a theatrical costume house, but nearby if you need novelty costumes.

RECOMMENDED INVENTORY FOR EACH YEAR:

All of these items should be purchased by the UTC and stored in the Funky Room.

One spare lamp for each lighting instrument (HPL 575/115X for Source Fours, PAR-64 WFL and MFL, EGG for Lekos).
One blank MiniDisc for each show.
A stock of commonly used gel colors.
Additional headsets to replace broken units. (This is likely every season.)
9V batteries for headsets.
Spare fuses for the dimmers, the sound amp, and the sound board.

APPENDIX B: SUGGESTED READING

Backstage Handbook (Third Edition) by Paul Carter. © 1994. Broadway Press: Shelter Island, NY. 800-869-6372

Theatrical Design and Production (Second Edition) by J. Michael Gillette. ©1992. Mayfield Publishing Company: Mountain View, California.

Stage Lighting Revealed: A Design and Execution Handbook. by Glen Cunningham. ©1993. Betterway Books: Cincinnati, Ohio. 800-289-0963

Sound and Music for the Theatre: The Art and Technique of Design by Deena Kaye and James LeBrecht. ©1992. Back Stage Books: New York, NY.

Sound Design in the Theatre by John L. Bracewell. ©1993. Prentice-Hall: Englewood Cliffs, NJ.

Sound for the Stage: A Technical Handbook by Patrick M. Finelli. ©1989. Drama Book Publishers: NY, NY.

The Stage Management Handbook by Daniel A. Ionazzi. ©1992. Betterway Publications: White Hall, VA. 804-823-5561

Stagecraft: A Handbook for Organization, Construction, and Management by David Welker. ©1987. Allyn and Bacon, Inc. Newton, MA.