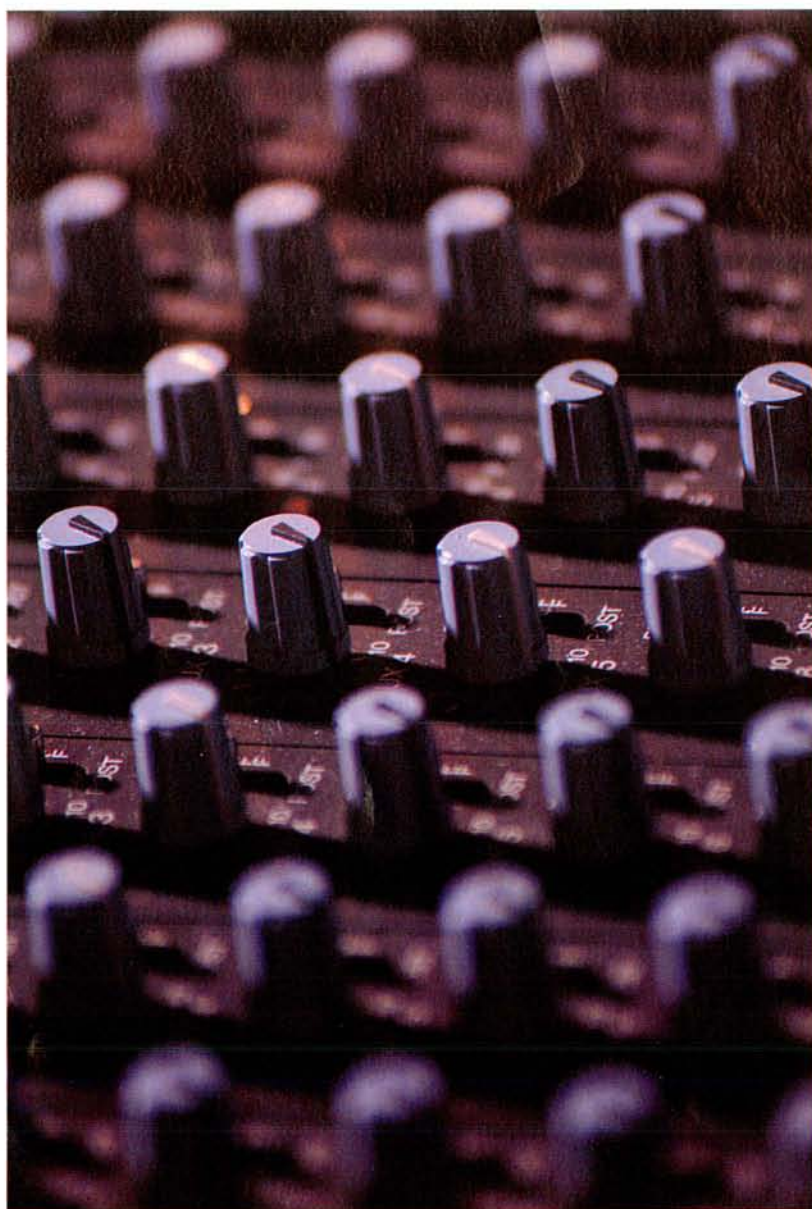




THEATRE DESIGN & TECHNOLOGY



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INTRODUCTION • IN THIS ARTICLE, BASIC PRINCIPLES OF CREATION, MAINTENANCE AND USE OF CUE SHEETS FOR THEATRE SOUND SCORE DESIGNS WILL BE INTRODUCED. THE ARTICLE IS DIVIDED INTO TWO SECTIONS: PRELIMINARY CUE SHEETS AND SHOW CUE SHEETS. PRELIMINARY CUE SHEETS INCLUDES A DISCUSSION OF WHAT PRELIMINARY CUE SHEETS ARE, WHAT THEY SHOULD INCLUDE, AND HOW THEY ARE TO BE USED IN THE PRODUCTION PROCESS. BULLETED (“◆”) ITEMS REFER TO *ZOUNDESIGNER*, A SHAREWARE HYPERCARD PROGRAM AVAILABLE FROM THE AUTHOR.¹ THE ARTICLE INCLUDES AN EXAMPLE OF A PRELIMINARY SOUND CUE SHEET AND A SHOW TAPE CUE SHEET FROM A RECENTLY REALIZED PRODUCTION.

PRELIMINARY CUE SHEETS

• WHAT ARE PRELIMINARY CUE SHEETS?

Cue sheets are a logical extension of script analysis: When the production team has reached a point in their analysis of the script where concrete ideas start to be formulated, it is time for the sound score designer to prepare preliminary cue sheets. The preliminary cue sheets are a logical extension of the analysis of a script—yet it is most unfortunate that many designers start by identifying the specific “cues” mentioned in the script rather than first coming to a comprehensive understanding of what the essential experience of the production is to be for the intended audience. Merely sifting cue requirements out of a script usually leads to productions in which the sound “effects” feel like they’ve been added on top of the production, rather than being an organic component of a total whole. Just about as often, this practice leads to distracting attempts at unnecessary realism.

• WHY ARE PRELIMINARY CUE SHEETS NECESSARY?

One of the unfortunate traditions of theatre sound is that sound is typically the last thing considered in the production. It is not at all unusual for the set to be under construction in the shop before the sound designer has any input into the spatial requirements of sound for the stage space. Very often preliminary design meetings occur which include the visual artists (scenery, costumes, and lighting), but leave out the sonic artists (reinforcement, scoring and composition). Preliminary cue sheets provide a way to get the attention of the entire production team focused on the potential for the sound score to impact the production. There are many areas that the sound score will impact in a production—such as the actors (e.g., underscoring), the set (e.g., speaker locations), the costumes (e.g., wireless microphone placement), or the lighting (e.g., scene change music).

The longer the production team waits to address the implications of the sound score in the production, the more likely the possibility that sound will be cut for both technical and aesthetic reasons. If sound is not carefully planned early in the process, the director/production team will usually figure out what the function of sound should be in the production a couple of days before opening. This means that most of the sound work that has been done prior to this will not work in the production, and will inevitably be cut. Preliminary cue sheets are a way of getting to the most important parts of the production early enough to ensure that the potential of sound design can be maximized.

• THE PURPOSE OF PRELIMINARY CUE SHEETS

The purpose of the preliminary cue sheets is to condense the portion of the auditory communication by the production

team that will become the sound designer’s primary responsibility into a manageable form.² They also need to show how the sound score will accomplish the communication of the sonic portion of the theatre experience for which the sound designer has accepted responsibility. They should make it easy to trace themes and see relationships among characters, situations, ideas, etc. They also serve as a “shopping list” which enables the sound designer to make more accurate estimates of the time and money needed to execute the design.

Equally important, preliminary cue sheets serve as an ongoing record of the development of the sound score for the production. It is usually very helpful to reassure the director that cues developed early are not “carved in stone” but are starting places, so that work may proceed in conjunction with the rehearsal process. Preliminary cue sheets serve as a means for the director and designer to check that they are in agreement on the status of any sound cue for which the sound designer has assumed responsibility.

• WHAT DO PRELIMINARY CUE SHEETS INCLUDE?

Preliminary cue sheets, then, are an ongoing, written record documenting every change in the sound during the development of the sound score for a production. The preliminary cue sheets should include fades (in, out, or to a different level or speaker), live sound effects, miking cues (that are generally outside the province of the sound reinforcement designer), and preset changes (and when they are to be made). They should include a separate cue for every occasion in which the sound board operator, stage manager, actor, etc. makes a change in the part of the sound score for which the sound designer is responsible. Since the preliminary cue sheets will be distributed to members of the production team (including the director) who may have little to no experience with the technical requirements of sound, it is imperative that the preliminary cue sheets use plain, simple English to communicate. Technical terms, abbreviations, acronyms, etc. should be avoided unless they are terms that are commonly used by all members of the production team.

◆ *In ZounDesigner, use the words “CHANGE” or “OUT” in the “Sound” field to indicate cues that do not involve a separate piece of tape (or hard drive, etc.). These will then be skipped over by the Tape Logs section of ZounDesigner when you use the “Compile” button to prepare the order in which cues are to be cut to each deck.*

Eventually the preliminary cue sheets will be used to create the cue sheets which the sound board operator uses to run the show. Experienced sound designers are usually able to anticipate a great many of the changes that are going to need to be manually made during the course of a performance, and include these in the preliminary cue sheets.

• SPECIFIC FIELDS OF CUE SHEETS

There are eight fields of information that are required in the preliminary cue sheets. They are the CUE NUMBER of the cue, the unique label or SOUND attached to each cue, the CUE that causes the change in the sonic environment, the SPEAKER (or speaker presets) involved in the change of sound, the DECK that is involved in the sound change, a DESCRIPTION or message area for communicating important information about the cue, the anticipated TIME of the cue, and the PAGE number from the script on which the change occurs.

CUE NUMBER: It is important to assign a unique number or letter to each occurrence of a change in the sound in the production (excluding the spoken script). Sound cues tend to be developed much earlier and change much more often during the production process than lighting or other cues. In a small show with less than 20 cues, it may be feasible to use letters instead of numbers so that the lighting cues and sound cues don't get confused during the running of the show. This procedure is also useful when the sound board operator is inexperienced or unfamiliar with the show and requires the assistance of the stage manager in executing the sound cues. In this situation, the stage manager calls the sound cues over a headset system, and it is very easy for the sound and lighting cues to become misunderstood if they are very similar.

However, large shows with experienced sound board operators are a very different story. It is usually unnecessary for the stage manager to call sound cues as the sound board operator is very experienced both with the show and with the equipment.³ In large, complicated shows, the use of headsets by the sound board operator is not advisable, not only because of the way the headsets interfere with the sound board operator hearing the show as the audience hears it, but also because of the increased amount of distractions created by unrelated talking on the headset by the stage manager, light board operator, etc.

Large shows are also more likely to have the sound board operator located in the audience to ensure that the sound board operator hears the show in the same way that the audience hears it. Conversing on a headset increases the possibility that the sound board operator will distract the audience from the performance. Finally, large shows usually have well over 100 sound cues, and this makes the use of letters extremely cumbersome, and the insertion of new cues even more awkward. A better system is to use sound numbers in increments of 10: Sound Cue 10 is the first cue, Sound Cue 20 is the second cue, etc. This numbering system allows great flexibility to insert cues between two cue numbers.

◆ *ZounDesigner will enter the cue numbers automatically for you when you insert a cue. However, you may manually change them and then use the sort or renumber command to put them in the proper order. The cues start with number 10 and are incremented by 10 each time you use the "Insert Cue" com-*

mand. If you insert a cue between two numbers, it will create a new cue number that is half way in between the two cues. For example, if you insert a cue between CUE 10 and CUE 20, the new cue will be CUE 15. If you click on the word "Cue #" you will be prompted for a cue number. Enter a cue number and click "OK" and the program will take you to the card for that cue in the stack.

SOUND: Assign a one-word name to each sound to which the entire production team can refer. This can be trickier than it sounds. It is extremely important in complicated shows that every member of the production team communicates precisely. If members of the production team use different names for the same cue, confusion and errors can develop. Listen very carefully to hear if the director has developed a pet name for a cue. In the event that the director doesn't supply a name for the cue, try to develop a name that is simple and catchy, so that the entire production team will use it.

A special case of assigning names to cues is the development of themes in a production. In these occasions, try to use a unique one word name for the theme. Assign a unique number after the name (e.g., Dog 3, Hamlet 2, etc.) for each reoccurrence of the theme. This will help you keep track of how you are developing your themes over the course of the production.

◆ *ZounDesigner allows you to track themes with similar titles. When you click on the "Track Theme" button, the program will display the next occurrence of the first word in the field "Sound." For example, if you are viewing the cue card for "Hamlet 5," clicking on "Track Theme," will take you to the next occurrence of the theme, e.g. "Hamlet 6," or even back to "Hamlet 1." This makes it easy to study the aesthetics of thematic usage in a production. Also, note that you can find any sound in the cue sheets by clicking on the word, "SOUND." A prompt will ask you to type in the name of the sound for which you are looking, and will take you to the card for that cue.*

CUE: Cueing is one of most difficult aspects of a production to predict, as when a sound starts and stops depends greatly on the fully staged scenes. As a general rule sound is best started and stopped on visual actions rather than on spoken lines. Sound cues almost always need to occur on actor beats (a change in thought or motivation on the part of the actor). If sound is thought of as another character in the play, it is easy to see why one would not start a sound in the middle of an actor's line, unless the sound was meant to interrupt the actor. The same rule of thumb holds true for a sound fading out. A sudden silence in the middle of a speech can cause the audience to not be able to hear the last part of the speech! Any change in the auditory environment will tend to distract from the action of the stage. To prevent this, it is extremely important to find moments in the scene in which the major action is the start or end of a sound cue.

Obviously, predicting where these moments may occur is very difficult in the early stages of a sound score design. It is extremely hard to predict the unique interpretation the actor will give to a moment or for other creative ideas that will occur in the rehearsal process. When a sound occurs in the production is something that usually needs to be zeroed in on, rather than forced on top of a production. This is a major reason why rehearsal sound is so important to a production, and why the sound score designer needs to be intimately involved in the rehearsal process.

To save space in the cue sheets and to maximize communication, the CUE is usually limited to three or four words. Actors names are abbreviated to the first three letters of the name and capitalized, e.g. HAM for Hamlet, GER for Gertrude, etc. For visual cues, give a short description of the cue (e.g., HAM sees ghost). For a cue line, use the last 3 words preceding the place where the change is to start (e.g., HAM: not to be).

SPEAKER: In preliminary sound plots, speaker locations should be given in very broad, simple, and easily recognized abbreviations. SL (stage left), USL (upstage left), Prosc (Proscenium), etc. This will give the production team a general idea of where the actual source of the sound will be located. In the preliminary cue sheets that are released with the technical drawings, the speaker numbers should correlate with the speaker numbers used on the speaker plot.

Assign a number (from the speaker plot) to each loudspeaker and list which speaker(s) will be used in this cue. In production cue sheets, use the label attached to the appropriate speaker preset of the mixer in the field, **SPEAKER**. If using multiple speakers, explain in the description field.

DECK: When the first version of the preliminary cue sheets are created, it is very important to assign a deck to each cue on tape. Doing this will help to clarify the feasibility of running multiple decks simultaneously. Remember that on every deck, you should allow about five seconds after the cue has expired as a minimum amount of time required to cue the deck up for the next cue.

Cues that are to be faded out require special attention. It is important to have at least 25% more audio on a deck that is to be faded out than is required for the cue, in case the scene lasts longer during any given performance. For example, in the case of a four-minute scene requiring an ambience underneath throughout, at least five minutes of ambience should be recorded on tape.

Obviously at least 5:05 needs to be allowed from the start of this ambience cue before another cue can be run on this deck. It is also extremely inadvisable to ever fast forward or rewind a tape deck during a performance. In addition to the acoustic noise that occurs, fast forwarding and rewinding decks during a performance is very prone to causing errors

such as improperly cued tape decks, broken or stretched tape, etc.

Tape decks are usually labeled with a letter: "A," "B," "C," etc. Other equipment such as samplers may use acronyms such as "EIII," or "SCII." Microphones are usually designated by the input channel number of the mixer to which they are connected.

◆ *ZounDesigner provides Deck cutting order compilation and tape box label support for up to three tape decks. In order to use this feature, you must label these three decks, A, B, and C. You may use other labels, but ZounDesigner will ignore them when compiling cues in the tape logs. Simply type in the letter of the deck to which this cue will be assigned. When you go to compile your list of cues on that deck, ZounDesigner will find all of the cues that belong on that deck and put them in order on a card suitable for pasting on the tape box.*

DESCRIPTION: This is a catch-all area for any notes, ideas, reminders, etc. for this cue. It is sometimes referred to as the **MESSAGE** box, for in preliminary cue sheets, it is a space used to communicate information about the cue back and forth among the production team. In this capacity, notes in this box should be written in plain English so that the non-sound area members of the production team can readily understand the message.

TIME: In the early stages of the planning process, you will estimate the length of each cue (usually by reading your own timing of a scene) and record it here. When you start creating the actual cues, record the length of the sound that is on the tape here. This should be the same length as the timings you put on your master tapes, rough sound and rehearsal cassettes, and show tapes. Of course, you will update these timings as the cues change.

Timing of sound cues is an extremely important part of the process of designing sound. It can be extremely frightening when this important step has been overlooked and one waits until the first tech rehearsal to find out that all of their carefully recorded cues are too short (the most typical problem)! The following process helps to ensure that the length of sound cues is tracked throughout the rehearsal process.

The first order of business is to record the sound cues into the script. This is done by drawing a line that begins at the exact point in the script where the cue starts, and ends in either margin. Next to the line in the margin print the cue number and the name of the cue:

Pericles: I give to you, who best can justify _____ Q20 Gong 1

At the first read through, have an assistant time the script. To do this, start the stop watch at zero at the beginning of each

act, and then record the time underneath the cue number in the script:

Pericles: I give to you, who best can justify, _____ Q20 Gong 1
1:28

Note that this is not the length of the cue, but the amount of time that has elapsed since the act began. When the sound cue needs to end at a specific point in a scene (as it usually does) make sure there is a separate cue written in the script where the sound goes out. Do not worry about recording the actual length of the cue until you are outside the rehearsal. Once you are outside of the rehearsal, you simply subtract the start time from the stop time and record this new length next to the cue in the script:

Pericles: I give to you, who best can justify, _____ Q20 Gong 1 (0:13)
1:28

This is a good method for getting timings, rather than attempting to time each cue separately, as there is not usually time in the readthroughs for resetting the stop watch, making calculations in multiple running cues, etc. By timing the entire scene, you will also get an idea of how the cues "bunch" together and any difficulties you may encounter with the deck cutting order you have planned. After you make recordings, put the actual running time here so that you can later compile it into your tape log.

Plan that the length of the cues you have timed in the first read through will be about 50 percent too short. The first time you will be able to get a reasonable approximation of the length of a cue is at the first run through, when the blocking rehearsals have been completed. Make sure to get timings from this run-through, and put the timing underneath any other timings you have recorded. This is a better procedure than erasing prior timings, as it allows you consider the range of times that the cue may last.

Two more important tips about timings: If you are working on a show from out of town, usually the assistant stage manager can get the timings for you—especially if the director requests them. Also, do not worry if there are many rehearsal starts and stops in the middle of a scene (even in the middle of a cue that requires a timing). Simply stop the stopwatch any time the scene stops, and do not start the stop watch until the scene moves forward from exactly the same point.

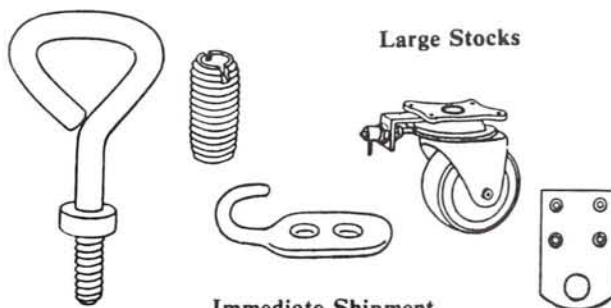
The timings that you get from rehearsals need to be compared to the actual timings of the cues that you record in the TIME field of the preliminary cue sheets. Remember that cues that are to be faded out should last at least 25% longer than the timing of the scene in rehearsals. Obviously, if the cue is supposed to fit the rehearsal timings exactly, the recorded cue will need to be adjusted accordingly if it is too long or too short.

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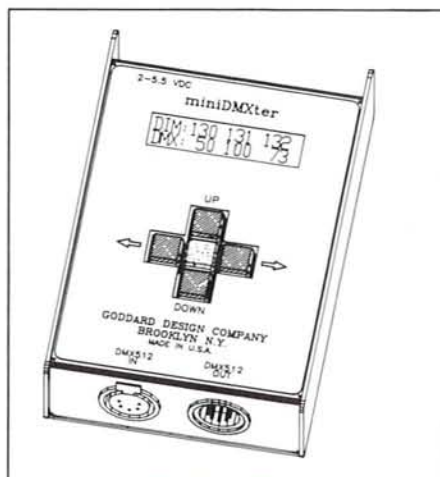
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PAGE: Include the page number of the script where this cue can be found.

◆ *ZounDesigner allows you to find any page in the cue sheets by clicking on the word "PAGE." A prompt will ask you to type in the page of the script for which you are looking, and will take you to the card for cues on that page of the script.*

• A PROCEDURE FOR CREATING CUE SHEETS

Once the production team has reached a point where the basic sound cues for the show are roughed out in the script, the sound designer can move ahead and create the first set of preliminary cue sheets. If the cues are clearly marked in the script, this becomes a fairly quick and painless process.

◆ *In ZounDesigner, the first step is to create a new stack with the title of the show as the name of the stack. Note that this is very important, as ZounDesigner will use the name of the stack (e.g., show) in several fields throughout the stack. Open the new stack, and click on the words "PRELIMINARY SOUND CUES" to go to the first cue card.*

When preparing the preliminary cue sheets, it is important to fill in the information for every field in each cue. This will help to make sure that the information that has been addressed by the production team is accurate, and push the production team to address questions that have not been resolved. For example, if the sound designer has no idea of the length of a cue, they should read or mime the scene out until they feel very confident that if they were directing the show, they would need a certain amount of time for the cue. Put this cue in the TIME field of the cue sheets. It may also help to put a question mark after information that is very uncertain.

Print the cue sheets and give a copy to the director. After the director reviews them and the appropriate changes are made, print another copy and distribute them to the director and the rest of the production team.

• WHAT HAPPENS TO PRELIMINARY CUE SHEETS AFTER THEY ARE CREATED?

Usually there are several exchanges of cue sheets between the sound score designer and the director before the first public release of the preliminary cue sheets. This is done to ensure that there has been no miscommunication between the director and the designer, and to allow the score to be developed as far as possible so that other members of the production team can get a reasonably accurate understanding of the how sound will function in the production.

The first set of preliminary cue sheets that are publicly distributed are a record of the agreement between the director and the sound score designer of the cues that would be in the show if the show had opened on the date the cue sheets

were released.

This is an important concept that has a couple of implications for the sound score designer: First, since the cue sheets that are distributed are a written record of an agreement, they should be approved by the director before being released. Second, it must be understood by all involved that the production process is, by nature, one in which the production is continually changing and evolving. It is an unfortunate, but absolute necessity that cue sheets are usually obsolete the minute they are released. Rather than viewing the preliminary cue sheets as a record engraved in stone, it is much better to think of them as a constantly evolving communication between members of the production team.

Obviously, then, regular updates of preliminary cue sheets need to be distributed to the production team. In the typical four-to-six-week production periods of academic and regional theatres, revised preliminary cue sheets should be released with the technical drawings, with the rough sound and/or rehearsal tapes, and with the show tapes. This would mean that the Production Team will be updated about the status of sound cues in the show every one to two weeks.

◆ *In ZounDesigner, it is a good idea to use the "SAVE A COPY" Command from the "FILE" menu to save a copy of the cue sheets every time you print them. In the above example, you would have copies in your cue sheet folder, titled, "Show Name Preliminary," "Show Name Technical Drawings," "Show Name Rough Sound," "Show Name Rehearsal Sound," and "Show Name Show Tapes."*

Preliminary cue sheets need to be distributed to the entire production team in order to ensure that everyone is doing the same show. The list includes, but certainly should not be limited to, the director, stage manager, technical director, scenery, lighting, costumes, and properties designers, vocal coach, musical director, and choreographer. This procedure allows you to get back to any old version of the cue sheets and confirm communication that had taken place should a misunderstanding arise.

• TRY IT YOURSELF!

1. Find a scene in a play in which it is easy for you to imagine at least ten sound cues. Use *ZounDesigner* to create and print the cue sheets for this scene for you.
2. Try some of the other features of *ZounDesigner*: try moving a cue to after another cue using the "MOVE" button; create cues out of sequence and use the "SORT" button to put them in order; create a theme with at least three cues, and use the "TRACK THEME" button to cycle between the three cues; insert a bunch of new cues in between two old cues and use the renumber button to renumber the cue sheets.

SHOW CUE SHEETS

• WHAT ARE SHOW CUE SHEETS?

The preliminary cue sheets will be used by the production team all the way through the opening of the show. However, the sound board operator will require a specific version of the preliminary cue sheets in order to actually run the show. These are the "show cue sheets." Their purpose is to provide technical documentation of every change in the sound design for the show, excluding live voices and continuous reinforcement mixing. They differ from the preliminary cue sheets in the way the different fields are arranged on the page, and on the content of the fields. The content is different in that a special type of "shorthand" is required for the sound board operator to fit the technical information required to run a cue into the speaker and description column. Since no one but an experienced sound board operator is expected to use the show cue sheets, the inclusion of technical information in the show cue sheets is not a problem—it is a necessity.

Sound cues are usually set with lighting and other cues in a preparatory session to the technical rehearsals known as a "paper tech." A paper tech is a special meeting between the stage manager, lighting designer, sound designer, board operators, and any other members of the production team who need to have input into the incorporation of cues into the show. The purpose of the meeting is to attempt to resolve any differences in placement of cues in the show, and to resolve logistical problems of scene changes, etc. before the tech rehearsals begin. Since the sound design should be close to performance shape before the tech rehearsals begin, and because a "plan of attack" is needed to make the most efficient use of the time set aside for the paper techs, show cue sheets should be prepared before the "paper tech" by the sound score designer and the sound board operator.

Although the sound board operator will refer to cue sheets as necessary during the operation of the sound cues in a performance, the ideal sound board operator would know the "score" well enough to "play" without the music. Indeed, the sound board operator's relationship to the show cue sheets is analogous to the relationship between the orchestra conductor and the orchestral score during a musical performance. Although conductors may follow the score, they are usually familiar enough with the score that they can devote their attention to what is happening with the musicians. Similarly, sound board operator must never find themselves so dependent on the show cue sheets that they no longer are intimately involved in the action on the stage.

On the other hand, if something should happen to the sound board operator during the run of the show, the completeness and correctness of the show cue sheets can go a long way toward minimizing the adverse impact of a new sound board operator running the show. Show cue sheets need to provide a quick efficient means of retrieving important techni-

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cal information for any changes the sound board operator must make to the sound score during the show. They should be quite capable of providing a replacement sound board operator with all of the necessary technical information regarding the running of the show (albeit minus the experience).

Unlike the preliminary cue sheets which would be typed in plain English, the show sound cue sheets should be written by the sound board operator in pencil or recorded in the sound system's computer. Either way, the show cue sheets must be regarded as evolving entities, and must be very amenable to rapid changes in the information that has been recorded. Once written, the show cue sheets should not leave the theatre, but be safely stored (or backed up) along with the show tapes (it is obviously advisable to back-up and print out computer generated cue sheets). Show cue sheets should not be rewritten (except as a last resort) because of the possibility of making important errors in the recopying.

Another common problem in technical rehearsals is the negative impact of time on the correct recording of cues in the show cue sheets. This is particularly a problem among young sound board operators, who, in their anxiousness to impress the sound score designer with the quickness with which they can carry out instructions, neglect to make thorough and accurate notes about what they have done. The net result is that they are unable to run the same cue twice in the same way. Obviously, the cost of not recording cues completely and correctly turns out to be much higher than the amount of time it would have taken to record the cue properly in the first place.

• HOW TO CREATE AND USE SHOW CUE SHEETS

Refer to the accompanying example for the following discussion.

◆ *In ZounDesigner, you should eliminate anything in the description field before you print show cue sheets. Make sure to make a copy of the stack first so that you can go back and find the comments you have deleted. This will ensure a blank area in the show cue sheets in which the sound board operator may write the technical description of the cue. You should also go through the cue sheets and make sure that the speaker field for each cue lists the speaker preset the sound board operator will actually use on the sound mixing console. After you press the "PRINT CUES" button from any cue card, select the "SHOW CUE SHEET" template from the "REPORTS" menu. Use the "SHOW CUE SHEETS" template to print a set of cue sheets that you can give directly to the sound board operator.*

The cue sheets are divided into one-inch horizontal blocks to allow plenty of room to insert cues, make notes around the cues, etc. To preserve this "room for changes," all notes regarding a cue should be written in the center of the space (to allow additional cues, notes, etc. to be written above and below the original cue). The vertical rows divide each cue

into the nine separate categories in the following order: "CUE #," "PAGE," "CUE," "SOUND," "SPEAKER PRESET," "DECK," "PRESET NOTES," "DESCRIPTION," and "TIME." Generally speaking, only the information for "SPEAKER PRESET," and "DESCRIPTION," will vary from the preliminary cue sheets. These are explained below.

SPEAKER: If a single speaker is to be used, the identifier from the speaker plot should be placed here. In systems with multiple preset and matrixing possibilities, the preset number or letter should be listed here. For multi channel cues (including stereo), the routing of the input channel should be listed first, followed by a dash, and then the speaker preset to which that channel is to be assigned. For example, in a stereo cue in mixer channels AL and AR to be assigned to speaker presets 1 and 2, the notation would look like: AL-1, AR-2 (mixer input channel A left is routed to output preset 1, and mixer input channel A right is routed to output preset 2).

Since this is the most common case (i.e., the left or lowest numbered channel is routed to the lowest numbered preset), it is permissible to simply list the preset as 1/2. The preset positions of the faders in the output matrix should be recorded on a separate page (see example).

To make the cue sheets more legible, it is not necessary to list the speaker presets in a cue with multiple parts after the cue in which the speaker is preset initially (remember that cue sheets need to only document changes that the sound board operator must make). In any case, the sound board operator should be able to tell at a glance the proper routing of input channels to output presets. Refer to the accompanying show cue sheet page for additional examples.

DESCRIPTION: This space should contain a concise technical sentence which describes the fundamental operation of the cue. The "subject" in this sentence describes the source-use the same identifier for the tape deck as for the mixer channel. If several channels are to be used in unison, their identifiers can be grouped together: "A" could signal tape deck A, left and right channels, while AL would indicate that only the left channel was to be used.

The next part of the "sentence" is the verb. The verb describes the action that must be taken on the subject. Some of the more common verbs are listed below:

- ↑ fades up to a level
- ↓ fades down to a level
- starts at a level
- XF Crossfades from/to

The "object" of the sentence follows the verb. Usually this is the relative loudness level and is underlined for ease of visibility. A very simple, sample sentence:

A→-5

would read, "Deck A, left and right channels start at a level of -5dB. The "object" may be appended using simple modifiers. The most typical is the relative length of a fade, which is always placed in a box. For example,

A ↓ ∞ [5]

would read, "Deck A, left and right channels fade out (i.e., infinite attenuation) on a 5 count. Since the symbol → means start at, it would never have a fade box associated with it. Conversely, the symbols ↑ and ↓ would always have fade boxes associated with them.

Another useful modifier is the expression EC which stands for "End Cue" and implies an "Easy" cue to operate. This notation is placed after a cue to alert the sound board operator that after this change, the cue will undergo no further modification. In many systems in which decks automatically cue up for the following cue, the notation EC alerts the sound board operator that they no longer need to concern themselves about that deck. For example, in the cue

A ↓ ∞ [5] EC

the EC placed at the end of the cue indicates to the board operator that once the cue has been faded out, no further attention will be required to that particular deck until the next start cue. Sometimes there will be several modifications (all with separate cue numbers) that will take place with a given sound before a cue is called that is designated "EC." This lets the operator know that attention can now be focused on other cues.

Sometimes the writing of cues can become quite complex and require some imagination in the sentence. By always constructing a "sentence," the sound score designer and sound board operator will be able to simplify and make concise difficult descriptions. A typical example of a complicated cue simply notated with all of the necessary information is:

A → -5 XF B [5]

This cue reads Deck A, Left and Right Channels, starts at a level of -5dbVU, and then immediately crossfades to Deck B on a five count.

In another example, the sound from one tape deck is to be crossfaded between two different stereo presets. This might be done when the preshow music is crossfaded into a practical stage speaker such as a prop radio. One way to accomplish such a cue is to split the incoming tape deck into two sets of input channels, and then assign the outputs of the channels to different presets (Note that each channel could also have its own EQ, effects sends, etc.). The first cue to start the preshow would be simply:

A¹ → -5

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and would read "The left and right channels of the first set of A Deck faders start at a level of -5dBVU." (The superscript indicates which channels of the mixer assigned to the A Deck are to be used). The crossfade would then be written:

$$A^1XF \ A^2 \uparrow -5 \quad \boxed{5}$$

and would read, "The left and right channels of the first set of A Deck faders crossfade to the left and right channels of the second set of A Deck faders up to a level of -5dBVU on a 5 count."

Cue	Page	Cue Line	Sound	Message	Time	Spkr	Deck
80	10	AGU: a month longer.	Ague 3	takes the theme to a sadder note. Break at 0:45.	1:00	Stage	A
85	10	TOB: see thee caper	Duke's Clock 1	Should have the same feeling as a galliard. Music crossfades to Duke's clock chiming 3:00 in the afternoon	0:05	Stage	B
90	11	VAL: No believe me.	Duke 2	Breaks at 1:00, 1:15, and 1:30. Use a variation of "Come Away" from opening scene to underscore the Duke's continued melancholy. Towards the end, the theme can get a little more hopeful. Try out this ending.	1:45	Stage	B
100	12	DUK: For this affair.	OUT	Gently comic, melancholic 0:10 string chord into "Feste's Theme" on clarinet--The Rain it Raineth Everyday--for 0:15.	0:25	Stage	B
110	12	VIO: woo your lady.	Feste 1	A Feste phrase on clarinet and then an Olivia phrase on violin.	0:20	Stage	A
120	14	CLO: than a foolish wit.	Feste 2		0:05	House	A
130	15	CLO: the fool, gentlemen.	Bicycle Bell		0:25	Stage	B
135	15	OLI: to that, Malvolio?	Malvolio 1		0:30	Stage	A
140	16	CLO: cram with brains.	Toby 2		0:20	Stage	A
150	17	MAL: exits	Viola 2	Some variation of the Duke's theme with viola solo. Music needs to hurry Olivia and Maria veiling themselves.	0:15	Stage	A
160	19	OLI unveils	Olivia 1	"O Mistress Mine." Possibly a counter melody for "Come Away, Death." Violin solo (0:15) for unveiling. Romantic theme from "Gone with the Wind."	0:15	Stage	B
170	21	VIO: farewell, fair cruelty.	Viola 3	Solo viola lingering like a perfume.	0:15	Stage	B

Cue	Page	Cue Line	Sound	Speaker	Deck	Presets	Notes	Description	Time
40	3	DUK: beds of flowers.	Viola 1	Stage	A			A → -5 ↑ 10 [5] EC	0:15
50	7	VIO: worth his service.	Toby 1	Stage	A			A → -2 EC	0:39
60	8	MAR: in your company.	Ague 1	Stage	A			A → -15 ↑ -5 [3] EC	0:22
70	9	MAR: let it drink.	Ague 2	Stage	A			A → -10 EC	0:22
80	10	AGU: sometimes altogether	Ague 3	Stage	A			A → -15	1:00
85	10	TOB: in heaven.	Feste 3	Stage	A			A → 0 [2] EC	
90	11	DUK: music the while	Duke 2	Stage	B			B → -10	1:07
100	12	DUK: For this affair.	OUT	Stage	B			B → 0 [5]	
110	12	VIO: woo your lady.	Feste 1	Stage	A			A → -10 [5] ↑ 0 [5] EC	0:32
120	14	MAR: you were best.	Feste 2	Stage	A			A → -10 EC	0:22
130	15	CLO: the fool, gentlemen.	Gate Bell 1	House	A			A → 0 EC	0:04

There are a couple of more ways to make the show cue sheets easy to read. First, whenever two or more different cues work together at the same time, brackets should be placed around the sections of the cue that differ. See the accompanying example. Second, cues tend to group in bunches during the course of a show, and the space in between these bunches provides the sound board operator time to prepare for the next set of cues. Whenever there are a bunch of cues that happen very close to one another it is a good idea to visually group them, either by drawing a heavy line before and after the sequence of cues, or by

leaving a blank space before and after the section. Finally, it is also very helpful to separate Act breaks by inserting a space or separating the cues before and after with a double solid line.

◆ In *ZounDesigner*, a blank space may be left in the *Show Cue Sheets* by inserting a cue, and then deleting the cue number.

• TRY IT YOURSELF!

1. Have someone who is familiar with this form of notation dictate a series of sound cues to you. Have them critique the notation for you.
2. Dictate a series of cues to a "sound board operator." This takes a little practice to get both you and the sound board operator quick and efficient. However, the key is to dictate each cue in the order of the fields on the page, and to dictate the description as a sentence in the manner described above.

CONCLUSION

The above model for cue sheets is one of many in use today. It has proven to be adaptable to a large variety of theatres and sound systems. It is also a system that will interface well with emerging computer technologies due to the logic of the layout. Whether or not the production team adopts this particular system it is important to understand the importance of clearly and concisely documenting the sound score design before the tech rehearsals begin, and maintaining efficient and concise records of all sound cues in the show. **TD&T**

RICHARD K. THOMAS is the *USITT Sound Commissioner* and professor of theatre at Purdue University.

Endnotes

- 1 In this paper, items marked with a "◆" refer to the Hypercard application stack *ZounDesigner*. If you do not have this stack and would like to obtain a copy, send a blank 3.5" floppy disk, and a stamped, self-addressed mailing envelope, to:

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Purdue University
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- 2 A question often arises as to where the responsibility falls in the case of an on-stage prop that produces sound. Generally the visual appearance of the object should be the responsibility of the prop designer and the sound that the property will make should be the responsibility of the sound score designer.
- 3 One exception is simultaneous technical cues in which the stage manager gives a go for several technical elements to happen at once. Surprisingly, the actual occurrence of simultaneous technical cues in a theatre production is relatively rare, as almost all cueing either happens off of actor beats or off of the music.