

## DIFFERENT POSITIONS IN THEATRICAL SOUND

In any profession it is important to understand the hierarchy you are dealing with. It is also important to understand the roles available and the duties and expectations of these roles. Without a strong understanding of this, it is harder to know what personal goals to set and how to achieve those goals. It is also important to understand the positions and the expectations of each position so that lines can be established that are not crossed. Theatrical sound definitely has a hierarchy and roles that are well defined. There are times when several roles can merge into one, but there are often times when the positions are isolated and defined. There are times when there is only one position, which really simplifies the hierarchy, but the reality on Broadway is a pretty structured set of roles with an established chain of command. Knowing and understanding this structure can be crucial to success in the business.

### Designer

The role of the sound designer seems obvious enough, although when I tell someone I am the sound designer on a show I usually get a blank stare and a smiling nod. It is easy for people, even theatre people, to understand the other design fields in theatre, but sound is just not that tangible. With the lights or the sets or the costumes, people can see the design. They can touch it. Sound lives in the air and it just isn't obvious to people that it takes a plan and a design to know how to move that air around a theatre. I designed a musical at a regional theatre once that had no sound cues.

The show was a straight up musical with two women and a country band on stage. I was really proud of the sound of the show and I even received a good mention in the review, yet as the lighting designer was saying good-bye to me he made the comment, “It was great working with you. Maybe next time I will get to see you actually design.” It stopped me dead in my tracks. To many individuals in the industry, it would appear that I had done nothing because there were no sound cues. This understanding of sound design is more common than not. So what is the job of the designer?

To understand the job of the sound designer we have to look at the different permutations of the role. The first thing to understand is that there are two major categories for sound design and each is ultimately responsible for the aural environment of the show. The first is a *musical theatre sound designer* and the second is a *straight play sound designer*. There are massively different techniques and skills and sensibilities required for these two distinct styles of sound design. It is similar to the difference between a pastry chef and a savory chef. Both are chefs and both can cook and both can cross over to the other style, but both have a strength and a preference for one style over the other. A straight play sound designer is very often a musician or a composer. This type of designer specializes in building soundscapes and works within the script to find ways to heighten the emotion of the show using sound and/or music. Some great examples of this type of sound designer are John Gromada, Dan Moses Schreier, and John Leonard.

A musical theatre sound designer does not have to be a musician or a composer. In fact, many musical theatre sound designers are mixers or former mixers. This type of designer specializes in manipulating the sounds made by others to enhance the emotions of the show without being noticed. A musical theatre sound designer usually tries hard to remain invisible because if the audience is being drawn to the speakers, then they are being pulled out of the show and the suspense of disbelief is gone. Some great examples of this type of sound designer are Tony Meola, Brian Ronan, and Steve Kennedy.

This is definitely not to say that there can't be a designer who does both. Dan Moses Schreier is a perfect example

of a designer who crosses over. He is a wonderful composer and an amazing designer of straight plays, and a very skilled musical theatre designer. But it is important to understand that these are very different styles of sound design. Designing a musical usually requires knowledge of wireless mics and band mic'ing techniques, as well as an understanding that you are there to help bring the composer's sound to reality. Designing a musical requires an understanding that you are a vessel for someone else's aural creation more than a vessel for your own. Of course, that does not mean there is no creativity involved in designing a musical, but rather that it is more collaborative, with more cooks in the kitchen when it is a musical.

Inside of each of these styles of design we can further break down the role of a sound designer to what has traditionally been called *technical sound design* and *conceptual sound design*. These are equally important and equally challenging aspects of sound design. This distinction started in the 1960s and defines the duality inherent in sound design. Often both roles are accomplished by one person, but there are times when the roles are covered by two people.

Technical sound design is also called *theatre sound system design* by the United States Institute for Theatre Technology's (USITT) Sound Design Commission. Technical sound design deals with the nuts and bolts. This part of design is all about the gear and what will be needed to amplify the show so everyone can hear it. The technical aspect deals with picking the right amps and speakers and deciding where to hang the speakers. It also deals with choosing a console and processing that will accomplish what is needed. It also deals with EQ'ing the room. To EQ a room a designer can use a variety of tools such as Smaart or Systune or Meyer Sound SIM. Technical sound design also means planning out the cabling and racking of the equipment.

Conceptual sound design is also called *theatre sound score design* by the USITT. Conceptual sound design is definitely the more creative aspect of sound design. In straight plays, this is the part of the design that selects the music or composes the music. In musical sound design, this is when

the designer creates a vocal reverb for a specific moment. In both types of design, the designer is working on the conceptual design when he builds sound effects and works on reverbs and vocal effects. This is when the designer works with the director or composer to understand what their needs and goals are and he finds ways to accent the emotions of the show. There are many straight play sound designers who are accomplished composers and not technical designers and there are many musical designers who are accomplished technicians and not composers.

In the end both aspects of sound design are crucial. If a show has a conceptual only designer then someone will have to fill the void on the technical side. This is much more common in straight plays than in musicals. A musical by its very nature is much more about the system than anything else and there is already a composer for the show, so the conceptual needs for the show are different than for a straight play. The goal, however, is always the same, which is not just to make the show sound good, but to make the show happen and that is the real job of the sound designer. Tony Meola, the sound designer for *Wicked*, taught me a valuable lesson about what the role of the sound designer is. From him I learned that sound design is not just about how your show sounds. You also have to be good at the politics. Sometimes I say sound design is 90% politics and 10% how it sounds. You can have the best-sounding show ever, but if you went way over your budget and had screaming arguments with the director and producer and worked the crew through every meal break, you probably are not going to be asked back. However, if you produced a good-sounding show under budget while being pleasant to everyone, then you will probably work for those people again.

Perhaps the most important aspect of being a sound designer is being the person who can pull it all together. The designer has been hired as the person with the expertise to make the show happen. In the case of a musical designer, that means the designer may have to explain why there are wireless mic problems or why the mixer is having trouble mixing a scene. The musical designer may need to explain why the vocals can't go in the monitors or why the hats are affecting the sound of the show. Being a designer

is not about knowing the answer, but knowing how to get it and how to explain it so everyone understands. Brian Ronan, the Tony award winning sound designer of *Book of Mormon* and *American Idiot*, is one of the best and most unassuming designers I have ever worked with and he excels in solving problems. If he encounters a problem and doesn't know how to fix it he will throw the net out and fish until he finds it. He is very open to opinions of his mixers and the result is that he creates an accepting and collaborative environment and his shows sound fantastic.

When designing musical theatre, it is very helpful for the designer to have an understanding of the other positions and techniques involved. It is helpful for a musical theatre designer to know how to mix, and historically most musical theatre sound designers on Broadway have been mixers. Understanding how to mix a musical goes a long way to making a show sound the way a designer wants it to sound. It is also helpful to understand wireless mic techniques. It is good to know the process of prepping mics and hiding them. For all sound designers it is crucial that they understand that part of their job is to create an environment where everyone below them can succeed. It is the designer's job to establish a good rapport with the other designers and to gather the information that is needed for the others to do their work. If a sound designer wants to be successful, it is his job to make everyone who works for him successful. A failure on the designer's team reflects directly on the designer.

## **Associate Designer**

The associate designer is just under the designer in order of importance. The designer hires the associate, but not all shows have an associate designer. A person becomes an associate for a designer by working with the designer repeatedly and gaining the designer's trust. An associate should fully understand the designer's aesthetic and system preferences and be able to replicate what the designer likes. An associate is an acceptable stand-in for the designer and has been given permission by the designer to make decisions in the designer's absence. There are times when the designer cannot be at the full tech of a show, so his

associate will take the lead and be the designer's representative whenever the designer is not around.

It is very challenging to become an associate. Usually the associate has mixed for the designer and has built shows and loaded shows in for the designer repeatedly. It is possible that the associate worked his way up by assisting the designer as well. Kai Harada is a great example of an associate sound designer. Kai is the associate designer for Tony Meola on *Wicked*. Kai worked for Tony for years as an assistant and did all of the paperwork an assistant does very well. Over time Kai grew to the point where he could put together the paperwork for a show designed by Tony with very little input from Tony, and Tony grew to trust Kai's ear and his judgment. Then Kai moved from the assistant on shows to the associate on shows.

Being the associate on *Wicked* means that Kai has been given the authority to speak in place of the designer. He can fly out to a production and give design notes to the mixer. He can also make decisions on the direction the system needs to go on the tours or on Broadway. Since *Wicked* opened, there have been several productions of it around the world and Kai has worked on all of them, to keep the shows as consistent as possible. With so many productions of *Wicked* that have opened, at times Tony is not available, in which case Kai, as the associate, acts and is treated as the voice of the designer. Now Kai has moved to designing his own shows, which is the logical progression of an associate.

Andrew Keister is another great example of an associate. Andrew is Steve Kennedy's associate. Andrew worked for years as a mixer for Steve. Andrew was a mixer and he mixed *Hairspray* on Broadway, among other shows. He began assisting Steve as well as mixing for him and soon he became Steve's associate. Andrew is the associate on *Jersey Boys*, another show that has been remounted all over the world.

## Assistant Designer

The assistant designer is one step lower than the associate. A show may not always have an associate but almost always has an assistant. An assistant's job is usually not a high-paying one. It is intended for people learning the ropes

or working their way up in the business. This is not always the case, however. There are assistants who have done several shows and are very good at what they do. Those assistants will usually be paid more because of their experience. Some assistants make a very good living bouncing from one designer to another. Those assistants are incredibly skilled at what they do and they make it look easy.

The job of the assistant is very similar to that of the associate: to produce paperwork and answer questions in place of the designer. One difference between the associate and the assistant is that, whereas the associate has been granted license to make design decisions in place of the designer when needed, the assistant has not been given that authority. The assistant is more of a conduit to gather questions and bring them to the designer to get answers and report back with those answers. Of course, this is not always the case, as the line between assistant and associate can blur based on experience and the history the assistant has with the designer. If an assistant has done half a dozen shows with the designer, he has probably reached the point where the designer trusts the assistant enough to take more of the reins.

When I design shows and I have an assistant I consider our first show together as training. I invest time in explaining to the assistant how I like things done and why. I try to hand that person a system and paperwork that has been roughly thought out. Whenever I can, I surround the assistant with people who have worked with me before. The hope is that after the assistant has done a show for me then the next time that person will be able to take on more of the duties of the assistant. After two or three shows, that person should know me and my quirks well enough to take the reins from the beginning and complete the project with little help from me.

Another way this can work is by new assistants working with old assistants or associates. There are times when a big name designer is too busy and has his assistants and associates all working on projects and has to go outside the “family” to find an assistant for this other project. That is when you end up with someone with little Broadway experience or is fresh out of college working as an assistant. When this happens, a lot of weight is put on the shoulders

of this new assistant. Typically, the new assistant is given paperwork from older shows from one of the other assistants and is encouraged to talk through the process with the more experienced assistant. Hopefully an experienced shop crew and production sound operator will be employed to help fill the gaps the new assistant needs help with. This system can be very effective, but can also lead to frustration. It is like throwing someone into the deep end and hoping he or she learns to swim. Inevitably mistakes will be made that can frustrate the shop and the crew, but if that person pulls it off and learns from it, then he or she is on the way to a very bright future.

A mistake that happens all too often is when a young designer tries to replicate this structure before he or she is ready. It is important to understand where you are in your career. A well-established designer has spent years building relationships with mixers and crew and assistants and theatre house heads. An established designer can have his pick of sound operators. He has a stable of people who have worked with him repeatedly and understand his likes and dislikes. He or she has the experience and the repertoire with the producer and technical director to point out when something is not going to work and possibly avert a crisis. This is not something that happens automatically when you get your first design job.

This structure works when you have highly experienced people working on the project. If you have talented and experienced people working with the assistant, they can help deal with any weaknesses the assistant may have; otherwise it is a recipe for disaster. The mistake is that someone fresh out of college gets a job as an assistant for a big name designer and is given a signal flow drawing and told to create the paperwork. That assistant does it and feels a great sense of accomplishment and gets plenty of “atta-boy’s” for a job well done. Then that assistant gets an offer to design a low budget off-Broadway show. Now that the assistant is the designer he decides to replicate the structure that he or she just experienced.

The first problem is that the new designer hires an assistant and expects that person to do what the new designer did as an assistant and create all of the paperwork for the



system. Inevitably the money is lower and the caliber of assistant and mixer is going to be lower. Something the new designer might not understand is how long it has taken for the established designer to develop his or her system. From naming convention to preference in the way a rack is built, this has developed over the course of years of designing. Inevitably the new designer wants to position himself like the established designer, so he allows his team to do too much. The result can be a system that is labeled poorly and doesn't work properly, which can make tech a nightmare and be a huge black mark for a young designer's reputation.

The key as an assistant is to learn everything you can from the people around you. Learn the techniques of other assistants. Learn the techniques of the people building the racks. Learn why something is done one way and not another. And learn that if you want to be a designer then you have to start developing your system and your style and you have to learn how to teach it to others so you can start to build your own stable of people to work with.

## **Production Sound**

The position of a true production sound is somewhat rare in theatre. If there is a production sound position then you can bet that it is a very large-scale production with a healthy budget. In hierarchy the production sound would be on the same level as the associate, but with no artistic license. The production sound position is strictly as a sound system builder and installer. In lighting there is an equivalent position called the production electrician. There is almost always a production electrician, but rarely is there a true production sound. The job of the production electrician is to take the lighting plot from the design team and flesh it out. The production electrician will do the cable order for the shop and figure out the logistics of building the system and loading it in. The production electrician usually does not work on the run of the show but rather works until the show opens and then moves on to the next show. If the show tours, then the production electrician will figure out how to manipulate the lighting design into a

touring package. Basically the production electrician takes care of all the nuts and bolts of the lighting design and leaves the design team to only deal with the artistic aspects.

It is much harder to separate artistic from system design when it comes to musical theatre sound design. I designed a tour several years ago in which we loaded into the venue and started tech and found out there was a problem with the building power and it kept crashing the lighting system. We would get 15 minutes into tech and the whole lighting rig would start to do weird things and then shutdown. After an afternoon of this there was a meeting with the lighting design team and the director and the technical director and the production electrician. The result was that the design team wished the production electrician good luck fixing it and went to dinner. No one batted an eye at this because lighting has done an excellent job in establishing its hierarchy. No one would expect the lighting designer to grab a voltage meter and run backstage and figure out the problem and fix it. That's not his job. That is the job of the production electrician and if it doesn't get fixed, the blame would fall on the production electrician. This is not to say the lighting designer isn't expected to be involved and offer ideas to solve the problem, but that person is not expected to be the expert on the nuts and bolts of the system. This is because the lighting designer has done an exceptional job of shifting that responsibility onto the production electrician and everyone accepts this hierarchy.

This would never fly with a musical theatre sound designer. If the intercom system was down all afternoon, it would not reflect well on the sound designer to wish everyone luck in fixing it and then head out to dinner. Maybe it is because most musical theatre sound designers have worked their way up from being mixers so people expect them to be more hands on. Or maybe it is because sound designers have a hard time walking away because they used to be mixers. The fact is that sound has not done as good of a job in separating the system from the artistic. The result is that it is rare to have a true production sound person on a show who is solely responsible for the system and has nothing to do with the run of the show or the artistic integrity of the show. There are definitely designers who are

trying to change that and progress has been made. Some of the more recent sound designers to join the ranks are much more artistic and the system-minded and mixer-turned-designer models are slowly going away. As things change, the need for a production sound position is becoming more important. In another ten years we may be at the point where lighting is and we will have successfully separated the artistic from the system and solidified the need for a true production sound position on all shows.

So exactly what does a true production sound do? In a word...paperwork. This person fleshes out the designer's design and adds all the cable and parts and pieces to make the system work. The production sound would create the cable order and rack drawings. He would plan out speaker rigging and oversee the build process. He would work with the assistant, associate, and designer to make sure they have everything they need. When it comes time to tour a show, the production sound would get involved to alter the show into a touring system. In the absence of this position this work gets split up and divided amongst the existing positions of associate, assistant, and A1. Sometimes the mixer, or A1, will be given the title of production sound, but this is not a true production sound because he has crossed the line between artistic and system by mixing the show.

The result of having a dedicated production sound person is that you can employ a lesser experienced assistant and A1 because they are not responsible for the nuts and bolts and do not need to have a full understanding of a sound system or loading in a sound system. It becomes the production sound's responsibility to know and understand the designer's likes and dislikes and his or her vision. It becomes the production sound's responsibility to staff the build with experienced people and take on the mundane minutia involved in putting a system together. It also frees up the A1 to concentrate on the mixing of the show rather than worrying about the buzz in the Spots channel on the Clear-Com. It can lead to an easier tech because the mixer is less likely to be burned out and overworked and more able to mix a better show. It frees the mixer up to worry only about the artistic integrity of the designer's vision, which in the end is the most important aspect for the mixer.

## A1/Head Sound

The role of the mixer in its simplest definition is the person who moves the faders based on what he or she hears, to make a show sound balanced and pleasing to the audience and maintain the aesthetic wishes of the designer. There are dozens of names for this person. A1 stands for Audio 1. (Lighting has an equivalent E1, E2, and E3, for Electrician 1, 2, and 3.) They can also be called *head sound*. This title can be a little deceiving. In regards to the union, all sound positions fall under the Electrics department and are therefore assistant electricians, but it is pretty common practice that sound is seen as its own department within the Electrics department. Therefore you are the head of a subset of a department within a department. Just remember that you still answer to the house head electrician. Then there are times when you can be called *production sound*, which elevates you to being more responsible for the system build and installation as discussed in the previous section. You can also be called the *sound mixer* or *sound board mixer*, a simple and self-explanatory title. Sometimes you are called the *sound operator* or *sound board operator*. This is the equivalent to the light board operator. This is another simple and self-explanatory title, and probably the best and most succinct title. Finally, at times you are called the *sound engineer*, which seems to elevate the position into something it really isn't. Engineering connotes some form of system component design that really is not part of the job. The term *sound engineer* comes from the recording studio world and was adopted by many in theatre as a way to label the position of being the person in charge, but I have found most Broadway musical people call themselves *mixers*. Maybe it is because our real area of expertise is mixing. But no matter the label, this is the person who mixes the show.

By far the most important task for this person is to mix the show. If you can't build a show but you have great ears, then someone can be hired to build the show. If you can't load-in a show but you never miss a pick-up, then someone can be hired to load the show in. But if you can't mix then you will be replaced. And just to be extremely clear, let me

repeat. *If you can't mix then you will be replaced.* The minute you decide you are irreplaceable is the minute when you start to lie to yourself. No matter how hard it is for the show, if you can't mix it is harder for the show to keep you around than to let you go. A bad mix can sink a show. Bad lighting is annoying. Ugly costumes are an eyesore. A bad set is disappointing. But bad sound is a reason to ask for your money back. In all of my years in the business, I have never heard of anyone asking for a refund because the lights were a little dark, but there are plenty of stories of people wanting their money back because of the sound.

I know of a theatre that went into a panic after a musical tour came through that had disastrous sound. The theatre had a large subscriber base and after the tour left literally hundreds of subscribers called and complained and cancelled their subscriptions. This could have bankrupted the theatre. If a subscriber-based theatre loses its subscribers, it might as well close its doors. This led the theatre to hiring an acoustic consulting firm and paying them a very large sum of money to come in and fix the sound problems in the room. The firm moved the speakers and hung new ones and EQ'ed the room and hung acoustic panels and did everything they could to make the room sound great. I have been there since the renovation and I have to say they did a nice job. However, having mixed in that room many times before the renovation, I can attest to the space being hard but definitely not impossible. Even though the room was challenging, the real problem was the mixer of this tour. A poor mix almost collapsed a theatre and in the end cost them hundreds of thousands of dollars to upgrade their system.

This is a scenario that has happened all over the country. As a touring mixer, it is common to walk into a house and be told the story of a show that sounded so bad that the powers-that-be wrote a big check to have someone come in and *fix* the room. Inevitably the mixer is told that he will not need to bring in his sound system because their system has been meticulously tuned and the room is (this is one of my favorite quotes and I have heard it so many times over the years) "acoustically perfect." Then the battle begins as the A1 tries to explain why it is so important that he use

his own gear. The key for the A1 is to keep a level head and explain that the system is tuned and that tying into their system is not as easy as it sounds. I have designed dozens of tours and I tell all my mixers the same thing. Using a house system is a last resort. The problem is that you do not know what you are plugging into. Most of the time these systems are EQ'ed and the EQ is password protected, which means you are stuck with it, whatever it is. I have known more than one mixer to be fired for using a house system and having a terrible show.

The problem is that it is not always about the gear. We all want good gear and we can all get a bit snobbish about the superiority of this console over that one, or this mic over that, but the reality is that it comes down to the quality of the mixer. The designer can design the most amazing system with every bell and whistle and that system can sound amazing, but if the mixer isn't good then the show could sound mediocre at best. The fact is that one of the best shows I have ever heard was mixed on a Mackie (the Ford Escort of mixers) and one of the worst shows I have ever heard was mixed on a Cadac (the Jaguar of mixers). I have also heard two people mix the same show on the same system on different nights and heard completely different shows. A 2dB push on the sax in one line of a song might be exactly what makes that song perfect. That is not about the gear. That is about the mixer knowing what to do.

I have been sent out several times to fix tours that are having sound problems. Most of the time what I find is a good system with very nice gear that isn't being used properly. The result is a show filled with feedback and tinny distorted vocals. One tour in particular was a good example of this problem. When I arrived I found that the gains on almost all of the wireless mic inputs were either maxed or almost maxed. When I PFL'ed a mic and talked into it the sound was immediately distorted and yet kind of quiet (PFL means *pre-fade listening*). The wireless was Sennheiser SK-50 packs with MKE-II mics going into a Midas Heritage H3000 console. It was all very good gear. So why was the gain so high?

The answer is EQ. This is what I consider a rookie mistake and I have seen it so many times. A mixer starts to EQ

a mic and makes some cuts. Sometimes they pull an old trick where they put all the mics on stage and turn them up until they feedback and start cutting EQ. (I am just going to say that this is a horrible idea, and if you ever find yourself with an urge to do this, please take a moment and stop yourself. I promise you that something else is wrong with your system.) As he makes cuts in the EQ, the mixer has a problem. He is losing gain. So gain up. New problem. The bad frequencies are back and now there are new ones. So more EQ. After a while you end up with a mess. On this show the gains were almost maxed and the EQs were almost all completely cut. Then when there was no more EQ on the board to cut, the mixer inserted an EQ on the vocal mix and continued to cut. When he ran out of places to cut on that EQ, he actually put a second EQ inline and started cutting more. The result was great gear and a horrible sounding show.

This is not to say that if you can mix then you can sit back and relax, because you have it made. The best A1s in the business are well-rounded. They can mix and build and load-in. They are good managers and are detail-oriented. The best mixers can walk up to just about any piece of gear and figure it out and they can throw faders effortlessly. The best mixers are constantly looking to learn the latest gear and are extremely protective of their ears. The best mixers are like the best artists. They understand that their value and their art is crafting an emotional mix, but in order to do that they have to understand and master the technical and political aspects of the business. Picasso didn't start by painting Cubist painting. He learned how to use his tools and then learned how to manipulate them.

The sound board operator is also the catch-all for the system. It falls on the A1 to catch all of the things that have slipped through the cracks and make sure the system works the way it is supposed to. The A1 has to make sure the intercom system is tested and working. He also has to make sure the video system and paging system are working. He has to make sure the main PA is working and he has to run a crew. Typically the design team will give notes to the head sound and then it is his job to delegate who will do the notes and make sure they get done. It can be an incredibly

demanding and exhausting job. The A1 works from 8 am to 12 am six days a week for weeks to get a show open, and then once the show is open the A1 isn't allowed to take the day off no matter what. The A1 is the only person who knows how to mix a show and if the A1 didn't show up, the show would be very quiet. Broadway is littered with stories of sound people throwing up while mixing because they are so sick and don't have a sub trained. It is a hard job, but it is also incredibly rewarding and people do it because they are passionate about it. Mixers love what they do. When they stop loving it they get out, because it is too hard for anyone who doesn't get some kind of joy out of standing behind a console and being part of the spontaneous artistic creation.

## **A2/Deck Sound**

The A2 position can also be called the *deck sound* position and sometimes a *mic tech*. There are shows in which there is more than one sound position on deck, in which case there could be an A3, A4, A5, etc. Typically these positions would just be called deck sound positions. If the show is a tour, it usually travels with an A2 and the local sound person is called a deck sound. If the show does not travel with an A2, then the local sound person is still called a deck sound. The deck sound person is responsible for everything from the proscenium line to the back wall. His job is to prep the mics, manage the inventory, maintain the mics, deliver the mics, mic the actors, do the cues in the show, and check for mic problems. It is quite a lot of responsibility.

Deck sound people are usually more technically minded than conceptually minded. There are some deck sound people who also mix, but it is not a requirement. Every musical on Broadway has a sub mixer, which is someone who knows how to mix the show and mixes at least one show a week to stay fresh on the show. The job of the sub is to be there in case the main mixer is not able to do the show. It has become common on Broadway to hire a deck sound person who can also be the sub on the mix so that there are always two people in the building who can mix the show. Having a good deck sound person is extremely important to a musical. A good deck sound person will do



preventative maintenance to make mics last longer and will find a bad connector and take it out of the system and replace it without the mixer ever knowing it happened.

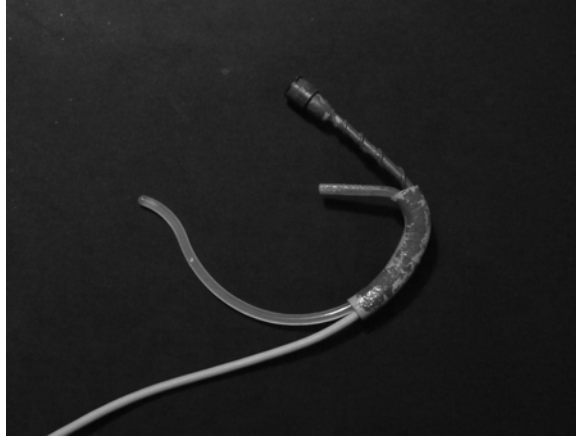
The main task of the deck sound person is to deal with the wireless microphones. The first part of this is to understand the designer's goals in mic'ing the show. Some designers are adamant that the mics never be seen. There are some producers and directors who insist the mics never be seen. Then there are other designers who don't mind seeing the mics and are only worried about the sound. There could also be mics on headbands or booms. The revival of *A Chorus Line* on Broadway was a great example of hiding mics. None of the creatives, which is the term used for the group of directors and designers on a show, wanted to see a mic or a mic wire or a mic pack. Most of the cast was in leotards with low-cut backs. The first problem was where to put the mic packs. The deck sound person worked with the wardrobe department and had pouches built into the bras for the women and the dance belts for the men. The next problem was where to put the mic. For some women it was not possible to run the mic to their head without seeing the cable so those mics ended up in the women's cleavage. Other mics were fished through elastic loops, sewn in by wardrobe, to get the mics to the shoulder and then up the neck under the hair and to the forehead. In the end the effect was stunning. The audience could not see any clue that the actor was wearing a mic and this was all due to the deck sound person. *Rent* was a very different show. The creatives on that show actually liked seeing the mics and the whole cast was placed on booms, which gave the designer, Steve Kennedy, a lot more headroom, or gain before feedback.

Once the deck sound person knows what the goals are, then that person can start prepping the mics to meet the goals. The first step is labeling. The deck sound person will label every receiver and transmitter with a number. Then a separate label will be added with the track name for a cast member as well as his or her real name. These are separate labels because the number relates to the hardware, but the cast member might shuffle through different packs throughout the course of the run of the show. Next, a label

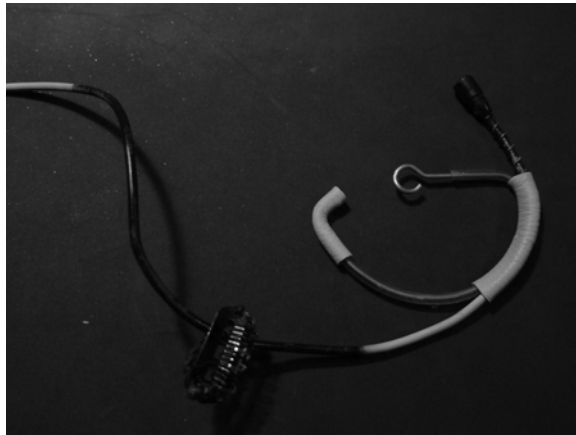
with the actor's name is attached to the mic near the connector. This is usually a tiny flag label. Next, the cable near the connector is doubled over and a Hellerman sleeve, which is a 1" rubber tube, is used to attach the cable to the connector. This creates a strain relief for the connector, which is the most fragile part of the mic. Next, a cap is placed on the mic, which could either be flat or high boost depending on the designer's needs, and usually a piece of waterproof tape, such as Elastoplast, is wrapped around the cap to deter sweat-outs.

Certain tools are very important to a deck sound person. One of the most important tools is the Hellerman tool, which is used to spread a Hellerman sleeve open. This tool can be used to strain relief connectors or attach mics to booms or ear loops. Ear loops are another important tool. These can be made of plastic, metal, or rubber. Ear loops wrap around the actor's ear to hold the mic in place. Toupee clips are also important. They are used to hold the mics in the hair, and come in different sizes and colors. It is good to try to match the toupee clip with the hair color. Toupee clips are prepped by tying elastic string across the clip and the mic slides through the string. Usually three toupee clips are used. One is very close to the head of the mic. The second is near the crown of the actor's head. The third is near the hairline on the back of the neck. Artist craft wire is another important item. It is used to stiffen a mic so it can be bent into the position needed. Usually craft wire is wrapped several times around the mic near the capsule. That allows for the mic to be positioned and maintain its position. Sometimes a Hellerman sleeve is placed on top of the craft wire to help it hide better and be smoother. Figure 3.1 shows some example pictures of some mic rigging techniques.

When it comes to hiding the mics, the deck sound person colors the mic cable to match the color of the actor's hair. The mics can be colored several different ways. Sometimes spray paint can be used but more commonly paint markers such as Pentel paint markers are used. Then, using the toupee clips and a rat tail comb, the deck sound person clips the mic in the hair and hides it as much as possible. If the actor is wearing a wig the mic ends up going under the wig cap.



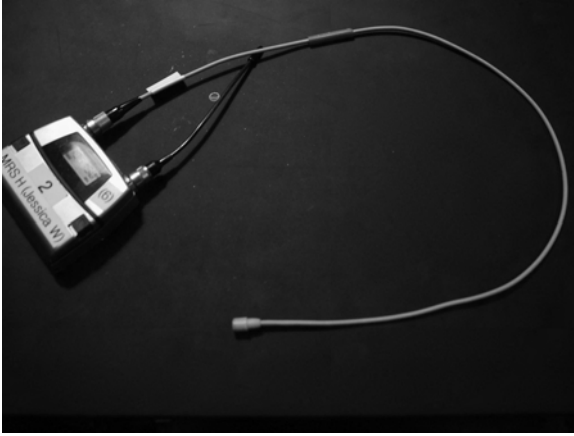
**Figure 3.1.** This photo shows a mic attached to a plastic ear loop using a Hellerman sleeve. The Hellerman has been colored (but needs a touch-up) to match the actor's hair. Craft wire is wrapped around the mic to stiffen it.



**Figure 3.2.** A mic attached to a metal ear loop. It also has a toupee clip to attach the mic to the actor's hair.

Sometimes it is possible to put the mic pack in the wig as well. Putting mic packs in the wigs is great for the life of the mic because they have much less wear and tear.

Once the mics are on the actors and hidden, the deck sound person's job is to sit by the RF rack and monitor the RF. This entails listening to the show feed for issues and using headphones to listen to individual mics to find problems when the actors are offstage and fix the problem before it gets onstage. The deck sound person sometimes monitors the wireless mics using a computer hooked up to



**Figure 3.3.** An 18" mic made short for placing in wigs.



**Figure 3.4.** This shows the normal method of wrapping the mic to prepare it for delivery to the actors.

the receivers. If a problem, such as a bad and crackling connector, is found, the deck sound person has to decide how to deal with that problem. Usually the first response is to disconnect the receiver from the system by unpatching the XLR or by turning off the receiver. Then it is the deck sound person's job to know the show well enough to know if that actor has any upcoming lines or is offstage for a while. The deck sound person then has to find the actor and replace the mic.

The deck sound person is also responsible for cues back stage. These could be cues for mic swaps or cues to pat sweat off of an actor and spray out the mic with air. The Broadway production of *The Full Monty* had a very important deck sound cue. The final scene in the show is the scene where all the men strip down to nothing. Literally nothing. So before that scene the men had a quick change to get them out of costume and mic and into their police/stripper outfit. So where do you put a mic and pack on a nude man? You hide them in their hats, of course. The deck sound person had a cue to prep mics in the police hats and then be at the quick change to make sure to get everyone's mics as the quick change finished.

The deck sound person is also responsible for maintaining the mics. This involves touching up paint periodically and replacing toupee clips as they age and lose their snap. It also involves re-applying Elastoplast to the caps and cleaning the tape goo off the mic cables. It also involves an ultrasonic jewelry cleaner. The caps on the mics can become caked with hairspray or make-up and they

have to be cleaned, and the only way to clean them is to use an ultrasonic jewelry cleaner. If there are handhelds in the show they also need to be cleaned periodically, or they begin to smell. To clean these mics, the deck sound person takes some mouthwash and a toothbrush and scrubs the outer portion of the mic head.

Finally, on a daily basis it is the deck sound person's job to battery up the mics. The battery-up process actually has its own prep. If the show is using conventional alkaline batteries, then each battery is tested with a VU meter. This usually happens the day before, but sometimes the deck sound person will check all the batteries needed for the week and have them ready. If the show uses rechargeables, which is becoming more popular, the batteries have to be conditioned after so many uses according to the manufacturer specs and they still have to be metered. Once the mics are battered, the deck sound person checks the In/Out sheet from stage management that explains if there are any cast changes in the show and adjusts the mics accordingly. It is possible that cast changes for a show could add a cue for the deck sound. Sometimes one actor will cover another actor's track for one scene and the deck sound will have to manually repatch the wireless backstage so the mixer out front does not have to change the mix of the show. Once all of this is done, the mics are tested through the system with the A1 and then they are delivered. There are several delivery styles. Some deck sound people like little plastic buckets and some like shoe bags. It is the debate for the ages.

As you can see, the job of the A2 or deck sound can be very complex and very hectic. Finding a good A2 is crucial to a show running smoothly and with few problems. This is why there are deck sound people on Broadway who have worked in the same theatre for years. Once a theatre finds a good A2 they hold on to that person. Some important A2s on Broadway include Dave Shepp, who works at the August Wilson Theater; Bonnie Runk, who worked at the Al Hirschfeld for years; Bob Beemers at the Broadway; John Cooper at the Imperial; Steve Carey who has been the A2 on *The Phantom of the Opera* for 20 years; and Randy Morrison who works at the Shubert. Randy Morrison is probably the most famous deck sound person on Broadway

because he also fixes broken connectors on mics, so everyone knows Randy.

## Monitor Mixer

More and more shows have started to add a *monitor mixer*. This is the backstage equivalent of the A1, with the biggest difference being his audience. The A1 mixes for the audience, while the monitor mixer mixes for the cast and musicians. The skill set is basically the same, but there is an added level of politics. The A1 has to deal with notes from the creatives, such as the director or composer, when they watch the show, but the A1 doesn't typically have to pay much attention to notes from the audience. On the other hand the monitor mixer gets notes constantly from the cast as well as stage management and has to find a way to make everyone happy.

The rise of the monitor mixer position is happening because of the change in the type of shows being created. In rock and roll sound, the monitor mixer is a given. No one would even question the need for a monitor mixer, but in theatre it has not been so common. As shows have begun to increase in complexity and as the music in modern musicals trends toward more modern rock and roll, the necessity for a monitor mixer has been increasing. Also as celebrities who are used to wearing in-ear monitors continue to cross over into Broadway, they bring with them an expectation of what it should sound like onstage.

When a show does not have a monitor mixer, this lack of personnel can be used effectively to curb the impossible requests that sometimes come up. As the cast starts to request more and more monitors onstage, at a certain point the designer can go to the producer and director and tell them that it can only be done if they hire a monitor mixer. If the show can't afford that, then the producer and director will usually, but not always, work to help calm the cast. But if the show can afford a monitor mixer, then there is nothing better. It is very liberating for an A1 to be able to only worry about the sound in the house. It is so much less stressful to know that someone else is taking care of the

cast and musicians. After that, the only problem is for the AI and monitor mixer to work together to make sure the monitor levels are not affecting what the audience is hearing, which can be a battle unto itself.