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THE ECHO

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Showcase: Hamilton



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Back to basics: level and intelligibility

Fees

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Daveed Diggs, Okieriete Onaodowan, Anthony Ramos, and Lin-Manuel Miranda in *Hamilton*



Showcase: Hamilton



GARETH OWEN

Venue: Richard Rogers Theatre
Director: Thomas Kail
Sound Designer: Nevin Steinberg
Associate Sound Designer: Jason Crystal
FOH Engineer: Justin Rathbun
Production Sound Engineer: Nick Borisjuk

By the time you read this article it is just possible that Lin-Manuel Miranda's biopic musical *Hamilton* will have won more Tony Awards than any other musical in history. With a record sixteen nominations this ground breaking show has reinvented the Broadway musical scene – tickets are unavailable for years to come – while single seats trade for twelve thousand dollars online, the lottery queue often stretches around the block before the sun is even up.

Hamilton tells the story American founding father Alexander Hamilton, set to a earth-shaking hip hop score, which, for Sound Designer Nevin Steinberg, is a once in a life time show. I was lucky enough to catch up with Nevin during a break in his tech schedule for Broadway musical *Bright Star*.

***Hamilton...* Well, it doesn't get much cooler than that. You were involved before it came to New York I assume?**

Yes, the Public Theatre had been courting the producers to open the show there and I have worked with all the creative team before on *In*

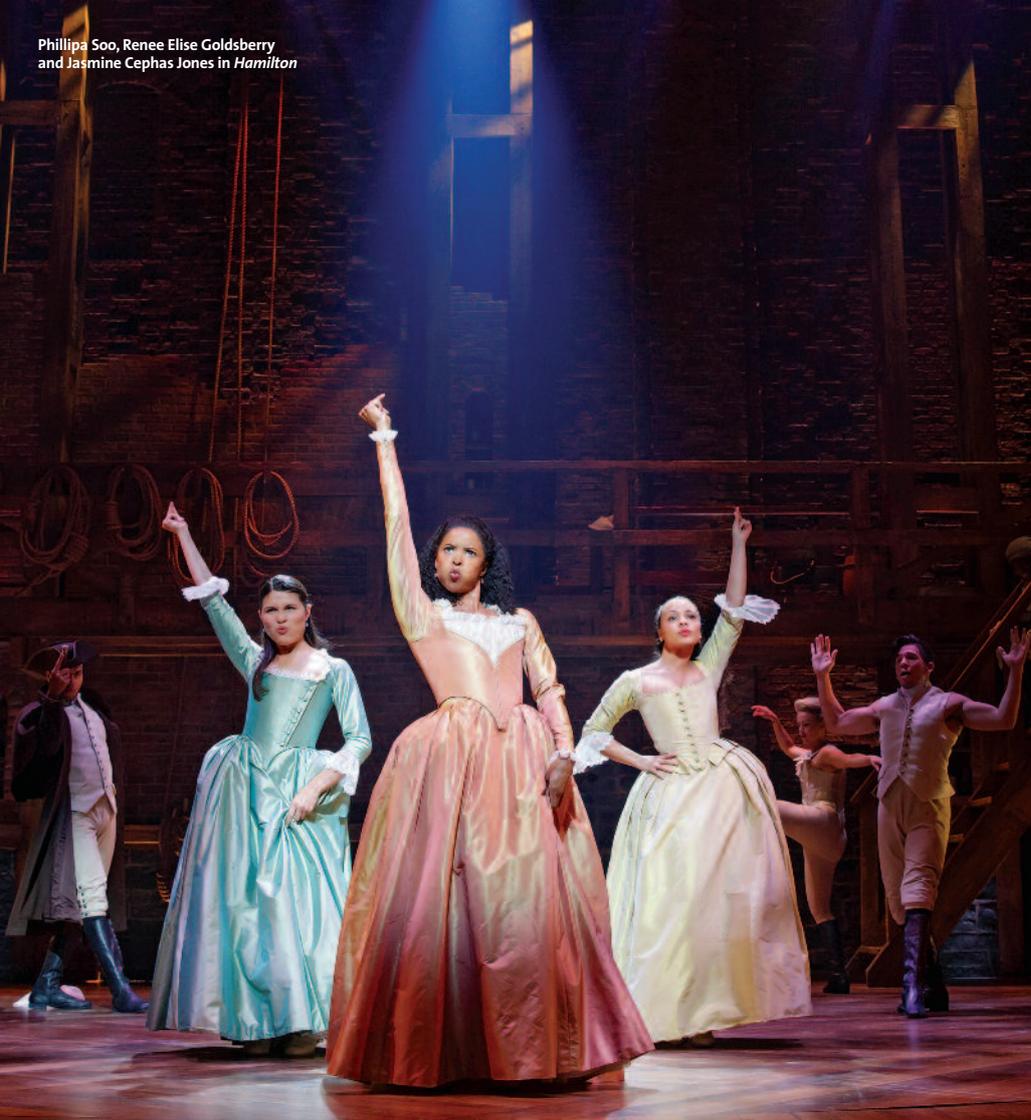
The Heights back in my Acme days. We did some readings and work shops and things, but the first actual production was at the Public, about a year ago. We ran for three months which was a great opportunity to try ideas out and shake things down. It was immediately obvious, even back then, that that the show was extraordinary.

Has the sound of the show evolved much since then?

The Public is a three hundred seat room and it's long and narrow – just one level – very different to the Richard Rogers theatre on Broadway where the show is now. I decided to treat this as a kind of proof of concept as to how the show would work on Broadway, so I pooled my resources into the front end of that sound system – the console, the wireless, the monitoring, the effects – so that when we did move in to town the only thing that had to change was the PA system.

There was a sense, while we were at the Public, that there were moments or parts of the show that couldn't really bloom here, that would

Phillipa Soo, Renee Elise Goldsberry
and Jasmine Cephas Jones in *Hamilton*



when we hit Broadway. Knowing that we kind of put a pin in it, it was like, 'Okay, that's what we can accomplish here, but when we get in to a bigger room...'

What sort of things were you talking about?

Initially I was never that happy with the dynamic range and surround sound and things like that, where you just require more space.

Hamilton is the show with the most extreme, dynamic range I've ever worked on or, frankly, seen. I mean, we go right from virtually acoustic to thumping hip hop at rock and roll levels. The transitions are exaggerated, there's a real sense of stretching reality to help us with the storytelling. So, from one moment of complete and utter sonic chaos and heart-stopping low-end, to absolutely removing all of that and cutting down to one voice on a bench with solo piano, zoomed in on that character if you will.

Not an easy challenge – how did you achieve it?

Well, it's brilliantly written, for the main part. I've kind of tagged along on some genius writing and brilliant orchestrations – I learned from the material what I needed to accomplish, honoring what's there already – the hard bit has already been done, my job is to live up to it. Oh, and, having moved on to Broadway, I have a world-class, high-resolution, very high-powered PA system which helps too!

What is that?

It's a hodgepodge of d&b, L-Acoustics, Alcons Audio, and some Meyer subwoofers – basically every PA manufacturer you can name.

Why?

I tend to choose things that fit their location so they work with the geography and the topography of a theatre. Sometimes a manufacturer makes a product that I think is particularly suited for a certain position or a certain angle or a certain place in the theatre. Sometimes I'm not convinced that that manufacturer has the best product for another place in the theatre so I tend to look at my designs as what speaker best suits each part of the theatre, rather than relying on one make or model. In this case I ended up with d&b V and Y line arrays, along with E3s and Eos; L-Acoustics 108Ps, 112Ps and SR9s, EAW JF60s, Meyer 600HPs and 1100LFCs; and Alcons VR8s and SR9s.

Alcons is a less common name, at least in UK theatre. I remember Rick Clarke using them a fair bit, but how did you get involved with them?

I ran into Alcons at a trade show and agreed to hear a pitch for their systems. One of my chief objections about a lot of the speakers we use in theatres is that I've never been convinced that a lot of them have been designed to be listened to at the distances we're listening to them at.

Much of it doesn't resolve acoustically very well until you are fifteen or twenty meters away – sometimes line arrays don't resolve properly until you are nearly thirty meters away from them.

We've adapted line array technology to solve a lot of problems for us, but I think the downside has always been at five to ten meters where they don't sound particularly good. Regardless of how good they might sound at a distance or how well they might measure, because you're staring down the throat of the cabinet you're basically breaking up the thing that is supposed to resolve itself for the listener by being too close to it and you start to hear components.

Listening to Alcons was the first time I'd heard a line array that I could walk up to, as close as I am to you, and feel like I was still listening to a loud speaker that was designed to hit me and serve me.

So Alcons are your new go-to box?

On *Hamilton* I've only used them for fills for under the balcony, really near-field situations. On *Bright Star* just down the road, the entire proscenium and most of the boxes in the building are Alcons.

Tell me about your front end – do you always

use the same desk?

I tend to like to do productions on a DiGiCo SD7T, and I didn't see any reason to change here.

You're not the only person in the world that thinks that.

Yes. I think it sounds great and I think the software is great too. For Broadway we upgraded the 48k DiGiRacks to the 192k versions and it made a hell of a difference – when the musicians come back and tell you it sounds so much so much better in their cans you know its doing something useful.

What do you do for outboard? Are you a plugins man?

I don't run Waves on the show, it's strictly onboard. We have two TC System 6000s for vocal and band reverbs, everything else is in the desk. For system processing we run the entire PA through a substantial Meyer Galileo system.

Are you big on imaging?

Yes we have six zones upstage and downstage and occasionally I do some light panning, but I don't ever cross-point delay on *Hamilton* – I will go as far as input delay, with a little light panning throughout the show.

How does show control work?

For sound effects we use QLab triggered by the



Nevin Steinberg.
Below left: Examining custom
mic rigs with Anna-Lee Craig.
Below right: Discussing the move
to Broadway with the director.

console. There aren't that many sound effects in Hamilton with the exception of some pretty crucial gunshots! The click tracks come directly from the music department off of a dual redundant Ableton system – the show was actually composed with the power of Ableton in mind already.

So the band are playing to click a lot?

A fair bit of the time, yes. It's a ten-piece band. Keyboard one is also the conductor, then there's a second keyboard and a drummer who has at least five snare drums and two additional toms to his regular kit! We have a percussion player who's also playing electronic procession and triggering the tracks with a bass player who plays three different basses, including an upright. Our guitarist who plays banjo, two different acoustics and an electric; and finally there is the string quartet.



Microphones wise I'm a big fan of DPA – on this show our guitarist is playing directly into a 4011 when he's playing his acoustic instruments and DPA 4099 clip-ons for the strings. The drum kit uses a Beyer M88 on the kick, Audix D2's and D4's for the tom mics, a Shure SM57 on the snare, and the overheads are DPA 4011s. For monitoring, everyone has Aviom A360s with whatever headphones they want.

Anything special going on with radio mics?

We've got Sennheiser 3732s receivers with SK5212-II transmitters across the board, feeding in to the DiGiRacks on AES. The mics for the cast are a very mixed affair depending on what's required. The majority of the cast are on DPA 4061s or Sennheiser MKE-1's, with a selection of hat mics thrown in for good measure. When I talked to the director about how to approach the mic'ing we decided we weren't going to make an assumption about anything, so I literally went person to person and did the best thing for them.

For example, one of the cast members, Burr, does some incredibly subtle singing and also needs some fancy live vocal effects – for the isolation we decided to close mic. The men's ensemble are all on home made booms too because of all the hats and costume changes, but the women's ensemble (except for one woman who has a shaved head), wear head-mics up at the hair line. Then all the principle women wear head-mics in the hair line too, along with Hamilton, Lawrence, Lafayette and Mulligan.

For stage foldback, are you doing anything out of the ordinary?

We come in from left and right as you would expect and we also put in some apron foldback,

so in the footlight trough – which is something I've been doing on a lot of top shows lately particularly if the band is very isolated. I find that if I can get a footlight position, we join that party down there – a kind of up-fill in the centre of the apron coming back at the actors. Particularly on shows where you come downstage or over the orchestra, you don't have a prayer as there's not even a good side position. A row of d&b Eos really bailed us out here.

Is there anything you've done on this show that is different to normal? What's the new trick that you're taking away from *Hamilton*?

I don't know if there's a new trick but something I really worked hard on was low-frequency management. I know I have a lot of deficiencies as a sound designer, but one of the areas I feel most deficient in is low-frequency stuff. *Hamilton* was a real opportunity to exercise LF and see just what I could get away with and how far I could push it. I put in two Meyer 1100-LFCs, which, frankly, have no business being in a theatre! I bought in a Meyer SIM system and we got three solid four hour sessions in – I drive SIM myself rather than bring in a dedicated SIM engineer – I like the data and I'm a bit of a data whore, so I like to know how things are performing. It's very important for me to feel like the system is verified, that I understand if something sounds a certain way,

that I feel like I have an idea about why that might be. Even if I choose not to address it at that moment, I feel like that enriches me because I know my tools better.

You must need a pretty solid team of people to make all this work?

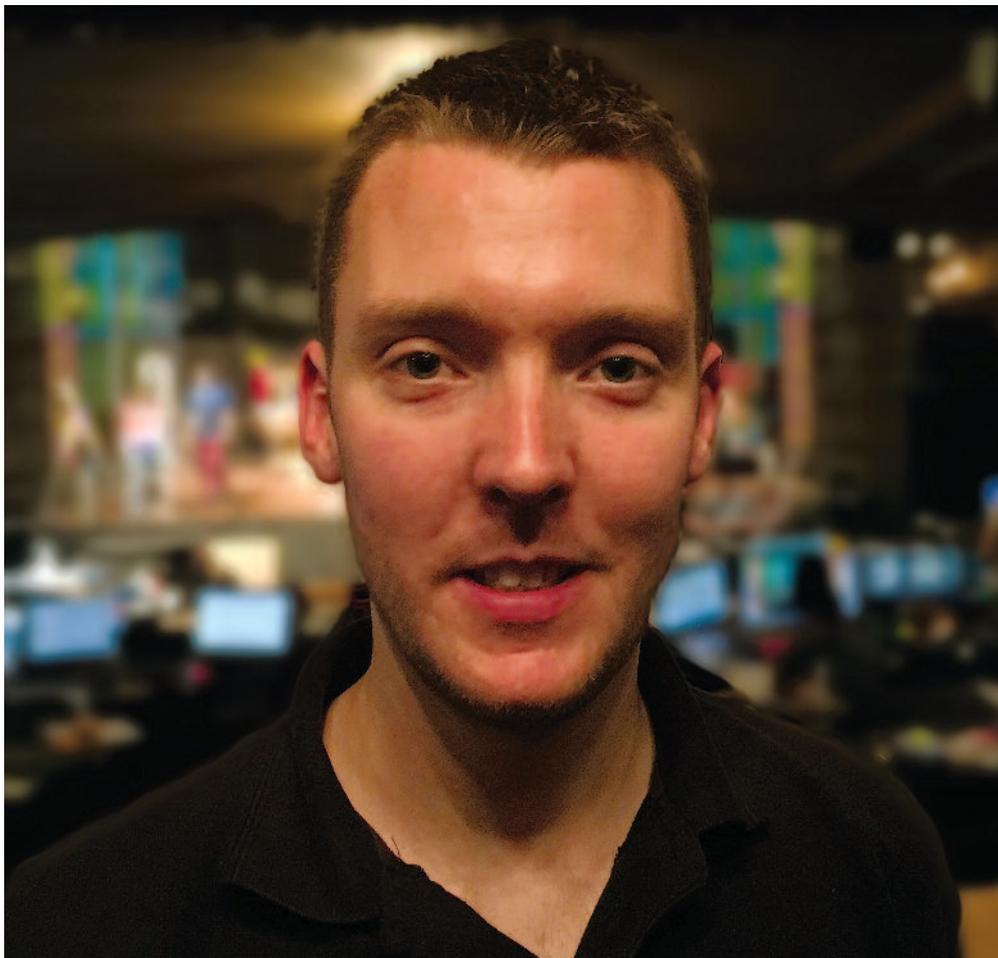
Yes, I have an amazing group around me. I have a team that's the culmination of years on Broadway – Jason Crystal is my Associate, Justin Rathbun is mixing and Nick Borisjuk put it all in and made it work. Backstage we have Anna-Lee Craig and John Senter and kit was supplied by PRG who gave me what I asked for without breaking the budget.

So, I imagine you are planning to retire next week?

Well, not really [laughter]. I mean, this is the show that people dream of designing, right? We got to opening night and I looked around and felt the same experience I had at the end of *In the Heights* – I was genuinely sad it was over – when it was time for pencil's down, I actually got melancholy because it meant that tomorrow, I didn't get to go back to work on *Hamilton* anymore. That's pretty rare, right?

MORE INFO

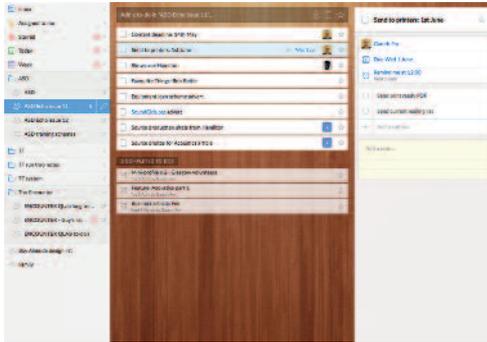
www.hamiltonbroadway.com



A FEW OF MY FAVOURITE THINGS

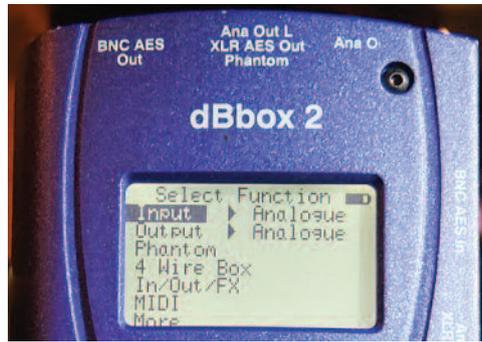
Rob Bettle, a former Operator on a number of musical theatre tours he now works as an Associate Sound Designer and Production Sound Engineer.

Credits include... as Associate Sound Designer, *wonder.land* (Manchester Palace); *Billy Elliot* (UK tour & Circustheater Holland); *American Psycho* (Almeida); *Scottsboro Boys* (Garrick & Young Vic); *One Man Two Guvnors* (Westend & tours). As Production Sound Engineer, *Harry Potter And The Cursed Child* (Palace); *Teddy Ferrara* (Donmar); *The Curious Incident of the Dog in the Night Time* (UK tour); *A View from the Bridge*, *King Charles III*, *Skylight* (Wyndams); *The Elephant Man*, *Great Britain* (Haymarket); National Theatre 50 Years on Stage (Olivier); *Mojo*, *Chimerica* (Harold Pinter); *The Audience* (Apollo & Gielgud); Olivier Awards (Royal Opera House); NT Live (various productions).



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www.wunderlist.com



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www.ctpsystems.co.uk/dbbox2.html

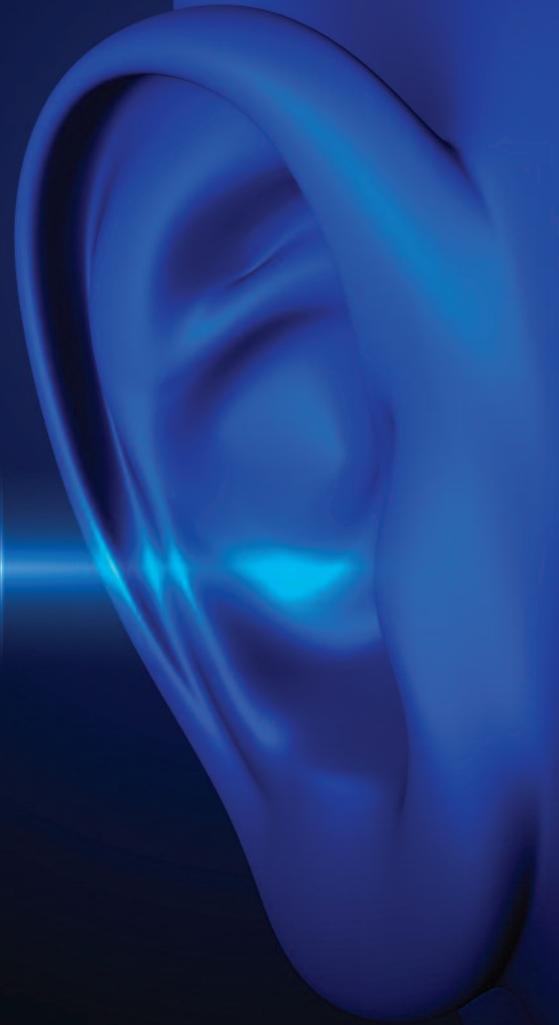


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www.ledlenser.com/uk/flashlights/p72

**Back to basics:
level and intelligibility**





ANDREW JOSEPHS



RYAN PERRY

In this, the first of four articles titled ‘Back to basics’ we’ll look at some key aspects of choosing and positioning loudspeakers, and the electroacoustic principles at the core of these decisions. Hopefully, by applying these, along with some experience, you can improve your loudspeaker choice and positioning, and in turn provide a better experience for the audience.

Peak & RMS

Let’s start with one of the most fundamental questions: how loud does it need to be? There isn’t a one size fits all answer to this and ultimately it’s up to the sound designer to decide what works for the show. If you want an average of 120dB SPL (Sound Pressure Level) over the entire show then those two Control 1s you’ve had lying around for years probably aren’t going to cut it.

In theatre we are usually dealing with content which has a wide dynamic range, therefore our system should be able to accommodate a reasonable average level (RMS) and occasional loud peaks. To work out what speakers will be suitable we must first look at the loudest part of the show, for example an SFX gunshot or large music crescendo. In music, the peak level (for example a kick drum) can be anywhere from 4-10 times greater (12-20dB) than the RMS value, and this difference is known as the Crest factor.

Delving into the technical data of loudspeakers will reveal its peak SPL at a specified distance (usually 1m), and occasionally what crest factor was used to get these readings; thus giving you an idea of the SPL it will be able to reproduce. Running a speaker at its peak volume continuously will considerably shorten its

lifespan. This is one of the key bits of information we need in order to choose which loudspeakers to use.

RMS and Peak are terms used to describe both the SPL output of a speaker, and its power handling; the latter of which we will address in a later issue.

Inverse Square Law (beware there be maths here)

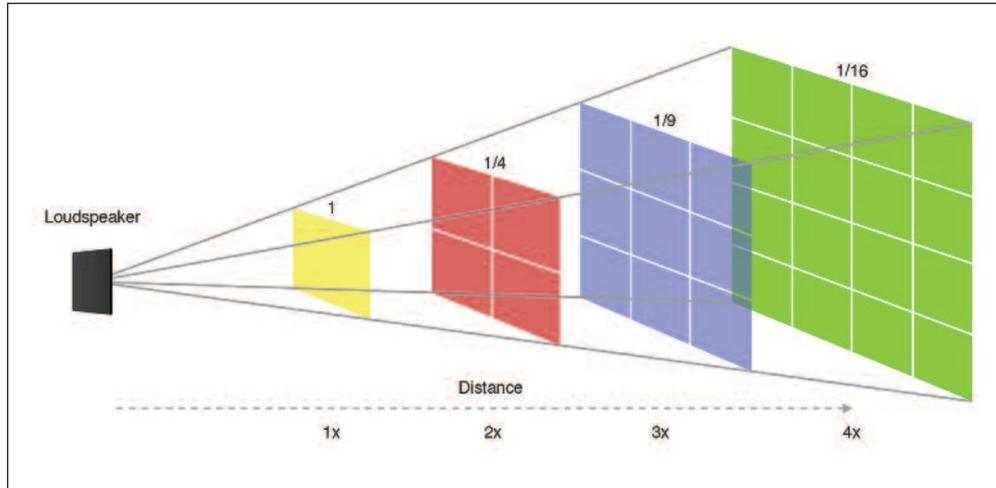
Now let’s look at how to achieve a consistent level for our entire audience. We know that the further you are from the origin of a sound, the quieter it is. This happens in a predictable way, and the relationship can be calculated using a simple formula known as the Inverse Square Law, expressed as: $\text{Level Drop (SPL dB)} = 20 \times \log(\text{distance } 1/\text{distance } 2)$

This sounds scary, but it results in a great rule of thumb: for every doubling of distance from the source, the volume (SPL) drops by 6dB. There are plenty of apps and websites that will calculate this for you, so you don’t need to go rummaging for your old Casio, but you will need to know the SPL output of the loudspeaker to reference the drop in level against.

It’s worth remembering that this rule applies to all sound sources, not just Loudspeakers, and

Fig. 1 Inverse Square Law

Inverse Square Law represents what is happening as sound emanates from a single source. As the sound travels away from the source it is spread across an ever increasing area, which is inversely proportional to the square of the distance.



can be used to help you achieve better gain at your microphone; for example when positioning a radio mic on a performer. If you halve the distance, which could be as little as 5cm, then you will increase the SPL into the mic by 6dB.

Thinking about this in relation to our audience, if our closest patron is sat 2m from the loudspeaker, and our farthest is 20m away, then there would be a 20dB difference between the two, regardless of the original SPL. Obviously, this introduces a challenge if we want our entire audience to be able to understand the show

and be blown away by our breathtaking vintage train sound effect. At this point, you may be tempted to suggest that this is what delays are for, however, we can often make large improvements through careful positioning of our main loudspeakers.

Coverage

Let's look at a common scenario (see Fig. 2), our main loudspeakers are placed inline with the front of the stage at head height to the audience. Using Inverse Square Law we know that there will be a 19dB drop between the front

and back of our audience. In order for the furthest member of the audience to hear our sound, we might end up with a volume that is rather uncomfortable in the front row.

One way in which we can reduce this level variation is simply by moving the loudspeaker further upstage away from the front row (see Fig. 3). This method works because Inverse Square Law behaves in a logarithmic way, so by doubling the distance to our closest audience member we have reduced the the front to back drop to 14dB.

We could move our loudspeaker upstage by another 2m (double the distance) to further reduce this variation, however that might result in feedback if we are using microphones. Luckily there is another direction we can move our loudspeakers in....

Flying loudspeakers is a common practice in theatre and it provides advantages both from a coverage and visual point of view. As we lift the main loudspeakers the difference in distance to the front and back of the audience is reduced. Without delving too deeply into high school maths, Pythagoras Theorem tells us this relationship between the three sides of a triangle. The formula is as follows: $A^2+B^2 = C^2$

Fig.2 Speaker position 1
 Fig.3 Speaker position 2

As we can see in Fig. 4, by lifting the loudspeaker by 2m, we can increase the distance to the front row by a greater amount than the increase in distance to the back. Again calculating with Inverse Square Law shows that this results in an 11dB drop across our audience.

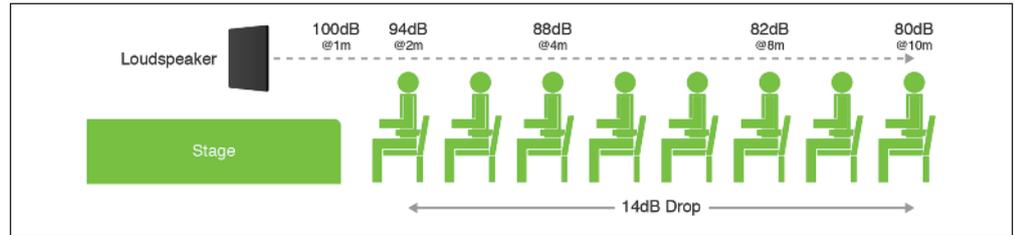
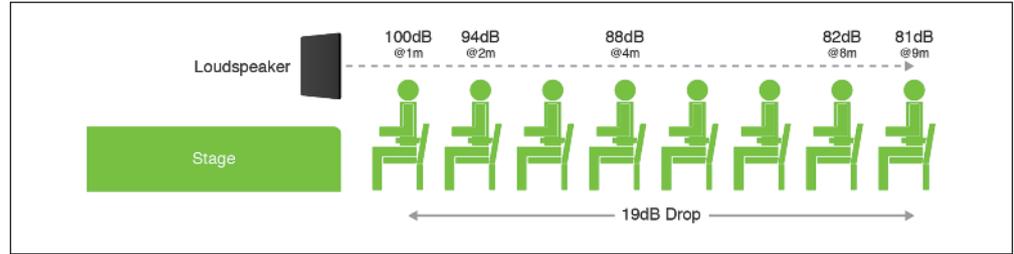
If we continue to lift the loudspeakers the difference in SPL from front to back will continue to reduce, though at the expense of imaging the sound to the performance. In Fig. 5 we have increased the height to 4m which results in only an 8dB drop in SPL.

The ideal scenario would be for the same SPL to be achieved everywhere, giving us a uniform sound for every audience member; but without endless delays, or making the audience wear headphones, there is going to have to be a compromise somewhere; it's the job of a sound designer to use their knowledge and judgement to decide what those compromises need to be.

The examples provided follow the theoretical model, which doesn't take into consideration room acoustics; however, they are accurate enough for us to make estimations in theatre.

Combining SPL

At this point we have only really thought about the level for an audience member from a single



loudspeaker, however, you'll do very well to find any theatrical sound design with just one loudspeaker. So what happens to the SPL for our audience when we start adding more loudspeakers? The maths for adding sound sources together is a constant regardless of how many sources you have, and the formulas are:

Sum of n incoherent sources = $10 \times \log [10^{(\text{level } 1/10)} + 10^{(\text{level } 2/10)} + \dots + 10^{(\text{level } n/10)}]$

This is for incoherent sound sources – if all of the sound sources were emitting the same

programme material then the formula would be:
 Sum of n coherent sources = $20 \times \log [10^{(\text{level } 1/20)} + 10^{(\text{level } 2/20)} + \dots + 10^{(\text{level } n/20)}]$

N.B. All *logarithm* functions calculated to base 10.

Incoherent is defined as two signals with different phase patterns, e.g. a piano and a drum kit. So whilst a left-right mix would likely be considered largely coherent, a centre vocal cluster and a LR band stack would not be

Fig.4 Speaker position 3

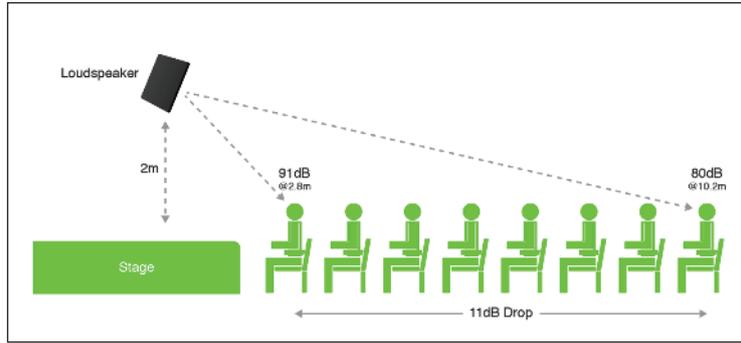
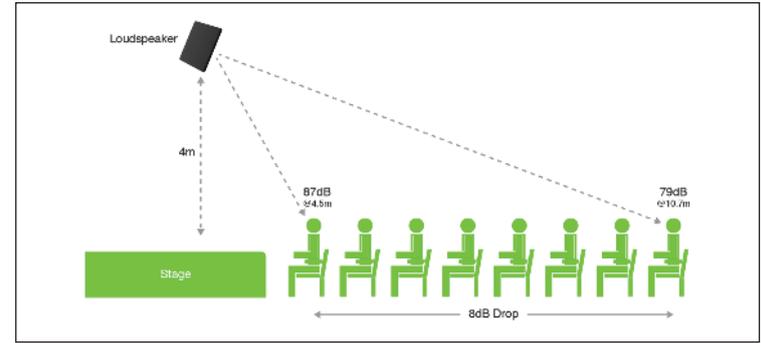


Fig.5 Speaker position 4



coherent with each other. It is rare to find any reproduced sound that is entirely in mono, and different speakers may be fed difference mixes, have different EQs and delays, all of which make them non-coherent. Use your judgement when deciding which equation to use – the reality is that the results will likely be somewhere between the two.

With a little reworking of the equations mentioned thus far, you could work in the opposite direction to discover the SPL @ 1m rating your loudspeakers need to reach a specified level at a certain position. Lets say you're sat centre between a LR set up, 8m away from each speaker, and you want to achieve an average of 100dB SPL at your listening position; inverting the SPL combination equations tells us

(predictably) the level which reaches the listener from each speaker will be need to be 94dB, and the level drop over 8m will be 18dB. So, the output of each speaker will have to be 112dB SPL @ 1m. Time to invest in something a little larger than those Control 1s!

Also consider the crest factor of your programme material; if it has a crest factor of 4 (12dB), then your speaker will need to be able to reproduce Peaks of 124dB SPL to accommodate an RMS of 112dB SPL (although it's highly recommended to give yourself more headroom than this).

Critical Distance

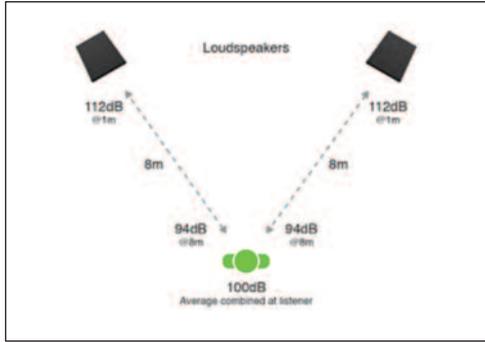
Having established that the further you are from a sound source the quieter it gets; and

whilst the theory is accurate, in the real world things are rarely that simple. Sound, like light, reflects off surfaces and these reflections are an essential part of the way we hear the world, helping us to localise where sounds are coming from and help form a picture of our surroundings – for example, a large or small space.

Yet, there is a direct relationship between how well we can understand what we are hearing and the amount of sound which is direct from the source and reflected from our surroundings – think about how well you can (or can't) understand someone speaking in a Cathedral as you get farther away from them.

Many auditoria share similarities of design,

Fig.6 Reverse calculation

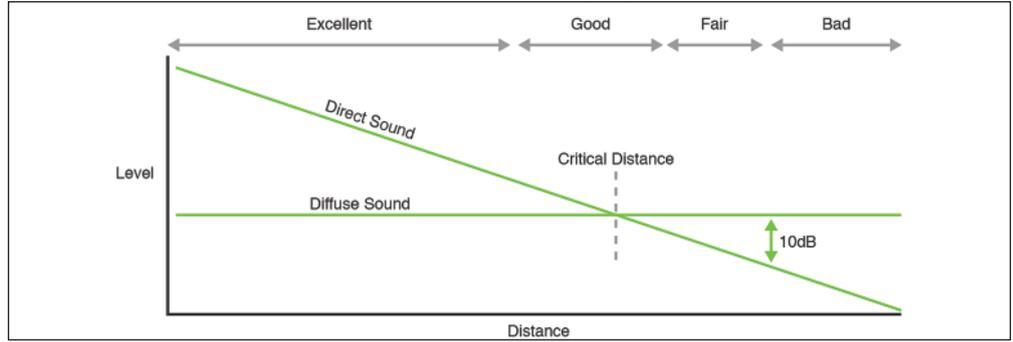


typically an enclosed space with a stage area at the front and seating right up to the back wall.

Critical distance is the point at which when moving away from the stage, the audience hears more sound reflected from the environment than from the direct sources, and as a result, they may struggle to understand what they are hearing. Before you jump to add in all of those extra delays to make sure everyone hears direct sound, bear in mind that you can travel a long way back from the Critical Point, and audiences will still be able to enjoy 'good to fair' intelligibility.

If you were to measure the distance from the direct source to your critical point, you can (theoretically) travel back that distance again

Fig.7 Critical Distance



three times (according to inverse square law) before you would get a 10dB drop and the intelligibility would begin to be classed as 'poor'. How do you know where your critical point is?

Get yourself an SPL meter and start walking away from your sound source. When the measurement stops decreasing then you have reached the Critical Distance. It is worth noting that turning the source of the direct sound up won't increase your critical distance; the reverb in the room will just increase as well.

An understanding of Critical Distance will allow you to explain to a producer why the budget for extra delays would be worth having or even to decide that the extra line of delays won't be necessary. Understanding how sound reacts in a

room can be a huge advantage when designing a system.

Feeling refreshed?

These theoretical principals underpin many of the decisions we make instinctively. Doing all of the sums without listening to what your ears tell you will make for a bad sounding show; but using some theory to support your decisions could help to improve your system and solve potential problems before you get into the theatre.

Next time...

We will be looking at the benefits (and dangers) of speaker placement, and how our audience interpret what they hear.

Mini profiles



SARAH ANGLISS

What is your current project and role?

I'm currently finishing a solo album and composing an opera about the life of Charles Byrne for Jerwood and Aldeburgh. I am also working as sound designer on *Once in a Lifetime* at The Young Vic, directed by Richard Jones.

What is the favourite part of your work/process?

I love creating liminal sounds, for instance those that blur the boundaries between vocalisations and machines; or between music and sound effect. I also love ensemble work – that moment when sound meets the perfect lighting and choreography.

What would you change about your work / the industry?

As I'm primarily a live performer, I'm still finding my feet with theatre sound. But I would like to see more adventurous use of dynamically changing sound (e.g. using sensors and Max/MSP). My fantasy production would cherish the responsiveness of sound as much as the liveness of actors.

What's your top trick / tip?

If you want to create a thrilling, tactile effect with infrasonics, amplitude modulate your bass using a signal that precisely follows the envelope of the audible, higher frequencies. This will create the disturbing sensation of palpable sound, not the impression there's a lorry chugging away outside.

What are you listening to at the moment? (An album?)

The Sadness of Things (by Steven Stapleton and David Tibet) and *La Louison* (by Les Fin'Amoureuses) – am currently obsessed with the generous sense of space in both.



DANIEL KRASS

What is your current project and role?

I am currently working on *International Waters* for Fire Exit. It has been described as an apocalyptic scatological farce. From the outset, the director has insisted on there being big moments that foreground the design, so its a little daunting being allowed to take all your toys out of the box and play with them all at once.

I am also in the process of organising a further development and future production based on *Kind of Silence*, which I created and directed last year for Solar Bear. This new version is being spearheaded by the National Theatre of Parramatta, a new theatre company in Australia. One of the fundamental aspects of the show, which will remain from the original version is that it addresses sound and music in a context that includes deaf and hearing performers and audience members.

What is the favourite part of your work/process?

My favourite part of the process of making work is the way that the concrete realised components of the finished work reflect or refract the initial abstract or poetic ideas. Its always a pleasure to imagine something together with your colleagues, work together to build it, and then see what it becomes which will inevitably confirm aspects of the initial idea but also surprise you by being different from what you had imagined or expected.

What would you change about your work / the industry?

It feels like we seldom have enough time to deal properly with sound at the business end of a process. Technical rehearsals at their best feel really creative and full of possibilities, rather than just a consolidation of the work you have prepared. I suppose all departments feel like this.

What's your top trick / tip?

I think that it is important to carefully construct your scheme for music or sound within a project, but be prepared to contradict yourself at any moment and break it completely if it serves the piece.

What are you listening to at the moment? (An album?)

At the moment I am listening to *Crying* by Roy Orbison, *From Farthest Know Objects* by Surgeon and I'm still listening to *To Pimp a Butterfly* by Kendrick Lamar.

Fees



How much one should get paid to design a show is a difficult topic to discuss. Different people prefer to value their efforts differently. Is it about the amount of time you put in, or the creativity? How can you quantify creativity? Does reducing your contribution to a show to an hourly, daily, weekly rate diminish that you are creating something; or is it the only meaningful way to charge for what you've done? These are all challenging questions.

We also negotiate our contracts in advance of performing them, with proportions of fees being advanced before we've started work, unlike many other industries. There are financial benefits to this but it also means we have to negotiate our fee based on what can be quite a vague notion of what the project will entail. It is easy to underestimate for example how much time in rehearsals will be required – an increasing demand. So even measuring our time is impossible when we can only guess what we will be doing long in advance of doing it. Our time and creativity are a couple of the factors we have to consider. We also have ongoing business and personal costs: travel, rent/mortgage, the purchase, maintenance and

upgrading of our resources and tools, sound effect libraries, computer hardware, software and sound equipment.

Producers on the other hand are trying to organise a vast array of variable staff, materials and venue costs into budget lines that stack up against the predicted income of their planned production. A lot of these costs will be predictions in the planning stages of a production that only firm up much closer to fit-up. The predicted income may be directly related to the number of tickets that can be sold and hence the number of seats available in the auditorium. Thus the money on offer to people working on the show is often factored to the size of the auditorium rather than to the work involved. Of course that is a simplification as we often do not work in a purely commercial world. And yet the range of fees offered to sound designers for essentially similar time commitments can vary radically.

Getting to the point of getting regular well paid work in the industry is tough, requiring one to build up both experience to become good at your job and a reputation to get ongoing and

better paid work. Many people work for free, or as near as makes no odds in order to garner the experience. There is great debate in the industry about the rights and wrongs of the low pay/no pay issue. The differing scales and functions of fringe theatre is where a lot of this debate centers. For some people the fringe is a stepping stone, for others it is the scale of theatre they prefer to be work on, for some it is a hobby. I would like to think that everyone should receive the National Minimum Wage (NMW) for their work on a fringe show. Under the current system if we want, or need to work in the lower end of the fringe we effectively have to subsidise the production by earning money elsewhere to pay our living costs.

Receiving NMW is gaining momentum in the fringe sector, but primarily in the more prominent venues with regular audiences and a degree of financial support, and it has primarily been applied to performers whose jobs are more easily distillable to the number of hours worked. There is the chance that fewer fringe productions could be produced as a result of being forced to pay NMW, leading to fewer opportunities for people to gain the necessary



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experience and contacts it takes to access well paid work but no one has yet to propose a solution to this that doesn't end up disadvantaging one group of people or another.

Negotiating a fee is a nerve-wracking process, large or small. It is often the case that as each person's career progresses they are asked to do bigger shows, or work in the many different niches of the industry, and with that comes a lack of knowledge about how much one should be paid for that type or scale of work. Producers are often in the same boat too: as they progress to bigger shows, there are few guides for them as to how much they should pay us. UK Theatre (the renamed TMA), the ITC and Equity all publish or negotiate *minimum* rates for designers, but nothing specific to sound designers. When we met with Equity to discuss their published minimum rates – which are often well below what is actually paid in the industry – they explained that these are meant as a safety net, a pay-no-lower-than-this level, much like the national minimum wage. But only publishing minimum rates that don't reflect actual going rates skews everyone's notion of what should be paid downwards. Producers only have these minimum guides and their own experiences to guide what they should offer as a fee.

More often than not the negotiation of a fee begins with an offer from the producer, which may be close to, or miles off what you'd been hoping for. The amount of negotiation on offer when agreeing a fee is variable. Some venues have fixed rates with no negotiation. Some claim to have fixed rates but there may be some variance. Others may have rates relating to how established a sound designer is or how many times they have worked with the producer previously. The perceived hierarchy of set designer – costume designer – lighting designer – sound designer often places your offer in relation to what they have been offered. There are even still some producers who offer the lighting designer a higher fee, and when questioned the reply is often because the LD has to draw a plan, ignoring the amount of preparation the sound designer has to do. Parity of pay with the LD is increasing but still not prevalent.

There may also be royalties to negotiate, which we covered in detail in the last issue of *The Echo*. You can read that at www.associationofsounddesigners.com/EchoArchive. We may also be negotiating to ensure we receive the same class of travel, accommodation and per diems as the rest of the creative team – these are called Most Favoured Nations clauses.

Producers only have so much money to spend on a production so they are often looking to make savings wherever possible to make the show financially viable. Consequently, the initial offer may be slightly lower than what has been budgeted for on the off-chance that it is accepted, or in anticipation of a negotiation process where it will be argued up to what has actually been budgeted.

Agents have existed to represent actors for many years. Increasingly creative team members have them too. For an actor the agent is often a key means of getting auditions and hence work. For the designer this is less often the case and the designer's agent will primarily handle availability checks, negotiate the terms of the contract and the fee. An agent enables the designer and producer to effectively argue over fees and contract terms whilst maintaining good relations: The agent can be the bad cop, the designer can be the good cop. There is an art to producing a show, to setting it up, getting it on its feet, selling it, and keeping it running: the producer is not the baddie in this story, but we may often end up having adversarial negotiations with them to get ourselves the best deal, which is a tricky position to be in with one's employer.

Having an agent comes at a cost, agents may

earn 10% of the fee or have a set monthly fee. An agent will not always be able to increase a fee, but the idea is that over the long term they can ensure you are paid as much as is possible. By having an agent you maintain good relations with the producer through the negotiating period (with your agent taking any flak) improving your chances of getting repeat work from that producer. A good agent will do far more than just this, acting as your ongoing careers advisor and confidant, amongst other things. And whilst 10% is a significant proportion it is worth bearing in mind that in other industries such as graphic design agents may earn closer to 30%.

But how do producers know how much to offer, and agents how much to try to increase an offer by? They do so based on what has been historically paid to designers for similar scale shows in similar size venues, and guesswork about what the demands of that show might entail. The less experienced the producer, the less experience they will have of what had been historically paid.

Regardless of having an agent or not, the negotiation process is often fraught. We are trying to balance the cost of our time, creativity and resources, whilst the producer may be trying to offer us a fee determined by the size of the

venue and what they might have offered designers in the past. Agents will be trying to increase that offer based on their experience. This can lead to many emails flying back and forth over weeks or months, as well as uncertainty about whether it will result in a job (and having to postpone replying to, or just turning down other offers until the process is resolved). Whilst Most Favoured Nations clauses ensure that everyone is receiving similar terms, it means that your contract can't be finalised until everyone else's negotiations have been completed too. It is tough to hold one's nerve, often not knowing whether you are asking for the moon on a stick or something perfectly reasonable.

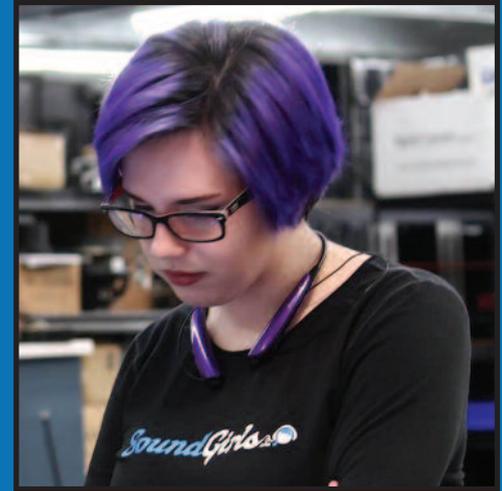
Clearly this is a slightly ridiculous situation with a lot of guesswork from all involved. And without access to historical data of what has been paid in the past, sound designers are at a disadvantage in the negotiating process.

The ASD is attempting to change that with our fees database. It contains fees that have been paid at a number of venues and by producers across the country for different types of productions. Where possible we're including fees going back a number of years so you can also see when the last time they raised their fees was. It's evident from the data we've collected so far that some (but far from all)

design fees have been frozen for the last few years, likely reflecting decreased Arts Council subsidies. The database also contains the fee that other organisations such as the ITC, Equity and the ALD publish should be paid for that type of venue. It is worth noting that the ALD publish suggested fees rather than minimum fees, more indicative of what is actually paid.

What we're not doing is telling producers how much they should be paying, or how much you should be paid. That is still down to you and the producer, the needs of the production and the time involved, but this should create a more level playing field, and a stronger place to negotiate from. Every production is unique, and the tasks we undertake vary greatly with differing schedules. The nature of producing a show and selling it vary greatly too, and this also has to be borne in mind when negotiating a fee.

At this stage we're not sharing our database with the rest of the world – and we ask that you to not either, other than for your negotiating purposes. This is a trial period for us as we establish how this database can work most usefully for our members, and we will undoubtedly modify how it works over the coming months. Once we've honed it, and increased the amount of data we've collected, we'll look at whether and how we might share



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that with the outside world. As you have a look at the database you'll notice lots of venues missing, and incomplete data. This is where we need your help.

At the bottom of each page you'll see a link to a short form to submit data about that venue to us. The more data we have the stronger a position we will be in to negotiate a fee. It should be said that it puts us in a weak negotiating position if the information submitted is inaccurate.

We think this resource will really help our members know when they're offered a good deal, or if not to leverage a better one.

This is just the start of the project. Once we have collected lots of data we can analyse and report on it. Perhaps to create an overview of the industry. Or perhaps to publish guidelines to the wider industry about what sound designers are, or should be paid. That's a little way off for now. In the meantime, we hope you find this a useful resource and hope to get your feedback about how to improve it.

MORE INFORMATION

ITC: www.itc-arts.org/rates-of-pay

UK Theatre: tinyurl.com/z5ojnph

Equity/SOLT: tinyurl.com/zv3zjmk

Fees: negotiating tips

If you feel you can, gently bat back the first offer with a 'is there room for movement, this is lower than we'd expected'?

Ask if the fee offer is parity with the lighting designer?

Be appreciative of the limits of what the producers can offer for the scale of the production, but keep sight of the point at which the production isn't going to cover your costs and be prepared to walk away if you can't reach an amicable agreement. Be assertive about what you need to be paid without being aggressive.

Just because the show is a good opportunity for you to break new territory with a venue or director doesn't mean you should be paid less.

Don't sweat the small stuff: there's little point arguing over a trifling amount of money if it means souring negotiations to the point where you won't be re-employed in the future.

Be respectful to everyone – if for no other reason than the administrative assistant you're talking with this week could be the west end's top

producer in ten years time. People remember people who are rude to them!
The director's concept for the show, or the show itself may require additional work from you compared to what a 'normal' show might expect. You can use this to justify why you need more: 'The director has asked me to be in rehearsals more than I normally would. This means I'm going to have to turn down work that I'd otherwise be able to do'. The normal amount of rehearsal attendance is debatable but anything beyond the last couple of weeks can easily be argued as being extraordinary. Ensure the director is aware that you are negotiating with the producers to get extra time in rehearsals based on the conversations you've had about when you'll be in rehearsals – don't blindside them. Get them on side with 'I can't do what you're asking unless the producers can offer me more'. There are lots of reasons why you might be being asked to do more for the same, and these are justifiable reasons to seek a fee increase.

Have you looked at the ASD Contract rider? It contains all the terms that should be in your contract.

Go to: tinyurl.com/gwpgdgq3

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