

DRESSED FOR THE PART

Julian Beech discusses the myths and methodologies of radio microphones in the amplified world of the theatre

Sophisticated sound reinforcement has now become almost common-place in the theatre. We have reached the point where a number of productions would be impossible to stage without electronic assistance and many shows are written specifically with elaborate sound reinforcement in mind. However, the application of audio technology to theatrical productions can be looked upon as either a technical curse or a creative endeavour, depending on one's perspective.

Theatre sound is, and deserves to be seen as, an important creative art. It only becomes a curse when its application is either misunderstood or mishandled. One clue as to the appropriate application of theatrical sound reinforcement lies in the phrase itself. Reinforcement means exactly what it says - using technology to reinforce the sound, rather than reconstructing or recreating it.

The primary objective of any system is to maintain intelligibility throughout the auditorium, reinforcing the artistes' voices only to the desired level. Ideally, the audience should hear every word clearly, without being really aware that any reinforcement was present, and the performers' natural voices should still be perceived as coming directly from the stage. The question of "how loud should it be?" depends on the context in which a system is being used.

In a musical, for instance, the single loudest unamplified component is often the sound of the drum kit. There is obviously a practical limit as to how quietly a drummer can be expected to play and this limit defines a minimum level for the whole sound system. Maximum control over the individual performers is required, in order to balance speech or song above the sound of the kit, other acoustically audible instruments and sound effects.

The ideal solution, of course, would be a separate microphone for each performer, with no other conflicting sources in the vicinity. This ideal is relatively simple to achieve in a recording studio but is considerably more difficult on a stage or in an orchestra pit.

Close-micing techniques provide a solution, and their development in live sound has moved hand-in-hand with the progress of the radio microphone.

The miniaturisation of the radiomic has been one of the single most critical influences on sound system development. It has enabled sound designers to position a microphone as close as possible to an artiste's mouth, and at a constant distance, in order to stand the best chance of creating a valid balance under difficult conditions. It also provides the potential for a curse to gain a foothold within theatre sound.

Spurred on by the increased availability of dedicated radio frequencies, radiomics have found their way into a range of productions, including musicals, opera and drama. Their successful application depends on subtle and sympathetic handling, combined with an understanding of the limitations involved. The 'curse potential' arises from a number of myths which accompany the radiomic phenomenon.

A particular artiste may be badly cast in a role, and suffer from a basic inability to project their voice. The projection problem could be further compounded by their

ineptitude as a trained performer. Myth Number One says that this scenario can be solved by the sound designer. Unfortunately, no microphone technique can improve a performer's diction, or their ability to act convincingly and effect an audience's emotions.

This particular myth also gives rise to the erroneous belief that the sound system, or its operator, can compensate for a performer's hangover, bad cold or occasional lack of enthusiasm. No amount of system design expertise or operator skill can provide an artiste with synthetic tonality, dynamics and quality of performance. The true state of a performer's being, warts and all, will only be made all the more obvious.

Myth Number Two involves a show's venue. Just as a performer needs to be matched to a specific role, a production has to be staged in an acoustically suitable venue. Should a compact and intimate show be staged in a theatre with a too open and lively acoustic, the venue will contribute nothing to enhance the atmosphere of the show and the sound designer is likely to be called upon to compensate.

Using a sound system to counteract a lively



Over-the-Ear radiomic showing clip and cable taped in position.



Hairline radiomic with mic exposed.



Hairline radiomic - the audience view.

acoustic is notoriously difficult but radiomics can help to some extent. They can be placed close to the source, raising its relative level above the ambient sound. The end result can be a system running too loud, in an attempt to ride over and mask the inappropriate acoustics, whilst the real solution should have entailed a change of venue or an undoubtedly impractical re-tune of its natural acoustics. This second myth results from an inaccurate expectation of what is feasible, and points to the 'unrealistic expectation' syndrome which lies behind the myths in general.

Although the radiomic has provided greater freedom for the arranger and orchestrator, allowing a wider orchestral dynamic range during vocal passages, the cross-over point between creativity and cacophony has become tighter and more critical.

A specific orchestral arrangement may be too thick and heavy for a particular vocalist, resulting in difficulties for the audience, who struggle to hear the lyrics. Whilst absolute volume levels can be theoretically catered for, arrangers still need to be aware of how orchestration can affect the voices. They should not presume that because the performers are wired for sound, a strident brass section can provide a suitable contrast for a delicate vocal score. The orchestration myth is a subtle one, but has very real implications for an audience.

Set and costume designers also have to be aware of the sound department's requirements. Radiomics have provided performers with almost complete mobility, and therefore less dependence is needed on

microphones hidden in the set or placed on the floor. However, the acoustic effects of set design can still have a significant impact. Materials and shapes which inhibit the naturally reflective acoustic of a stage set should obviously be avoided, otherwise the design freedom myth can produce distinctly unnatural aural effects.

A similar situation exists in the costume and wig departments, who have to make regular allowances for accommodating microphones and transmitter packs. Combining masks, complex headwear or wigs and miniature radiomics requires careful handling and attention to detail, together with an awareness of the related mechanical and acoustic problems.

Ten years ago radio microphones were larger and, if used at all, were generally fixed to a lapel. The technology has undergone continual development, with the current equipment offering very high degrees of technical quality, performance and reliability. They are also now much smaller, allowing discrete and almost invisible placement behind the ear or just on the hairline. If too many of the microphone myths coincide, the combining problems can result in the microphone creeping closer and closer to the performer's mouth, giving rise to the 'carbuncle effect'. All subtlety is therefore lost, and audiences may just as well see small portable microphone stands hanging around the artistes' necks.

All the above myths and misconceptions stem from a lack of education and clear awareness regarding the issues involved. Should these myths move too closely towards becoming facts, the amplified world would



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dominate the theatre. This would have gradual but long-term negative effects on audiences and knock-on commercial implications for live theatre.

The radiomic phenomenon can offer the theatrical world considerable creative freedom, but it deserves careful handling on the part of the sound designer and an informed attitude from the other creative departments. Sound reinforcement in the theatre need not be a curse and with appropriate attention the quality and enjoyment it can offer will continue to be exploited for the audience's benefit.



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