



# Sidetone

## Applications Notes

On any Production Intercom station which will accept a headset you will find, on the front panel, a small headset symbol, and a recessed screwdriver-adjust control. This control adjusts 'sidetone'. Sidetone, simply put, is the sound of your own voice as picked up by your headset's microphone and reproduced in your own ear, by your own earspeaker. You experience sidetone every day when you use the telephone.

The need for sidetone is psychoacoustic. If we cannot hear ourselves, the brain refuses to accept that anyone else can hear us. It is the explanation for why people shout when wearing stereo headphones. Sidetone provides the brain with the clues it needs to decide how loudly or softly we need to speak.



Very high sidetone rejection capability (and the ability to adjust it) are major contributing factors in the superior performance of your Production Intercom system. A few moments adjusting sidetone at each station will substantially enhance performance and listening comfort.

The sidetone adjustment controls on Production Intercom products are 'null' devices. There is a position near the center of the control's rotation (12 O'clock) where sidetone is reduced by as much as 55dB. Adjustments clockwise or counter-clockwise from this position will have the same effect - increased sidetone level. Most Production Intercom stations are factory set at the 2 O'clock position.

The 'normal' sidetone setting is the lowest level which will overcome the psychoacoustic phenomenon mentioned above. Minimizing sidetone level will reduce the likelihood of feedback occurring when the headset is removed. It is worth remembering that feedback caused by too high a sidetone level will be reproduced throughout the system with unpleasant consequences for those who are still wearing their headsets!

In very noisy environments, reducing sidetone level further will cut down the amount of local 'noise' being reproduced in the user's ear speaker. Too low a level may have the effect of causing the user to speak too loudly, however, just as too high a sidetone level may cause the user to speak too softly.

### Sidetone in LS-3 Talkback Loudspeaker Stations - A Very Special Case

LS-3 Talkback Loudspeaker Stations are capable of operating in a full-duplex hands-free mode when fitted with an LSM-1 gooseneck microphone. The user may speak and listen simultaneously without pressing any buttons, without the annoying clipping caused by VOX circuits, and without feedback. This feature is made possible by the high degree of sidetone rejection (55dB) in Production Intercom systems. The sidetone control on LS-3's is used find the most effective null-point, reducing sidetone to the lowest possible level. It is this that allows the microphone and loudspeaker to be active simultaneously. When a headset is plugged into an LS-3, it is detected by a special circuit, and sidetone is automatically adjusted to a 'normal' level.