

Microphone Splitting Made Easy

JUST WHAT IS MICROPHONE-SPLITTING, AND WHY WOULD ANYONE WANT TO WRITE ABOUT THAT SUBJECT? WELL, FOR ONE THING, I HAVE SPENT OVER TWENTY YEARS OF MY LIFE DOING IT. WHY? SIMPLY BECAUSE I HAD TO. I HOPE THAT BY THE TIME YOU

finish reading this article, you'll understand why it is important and necessary to do it correctly. Let's get started with a little background information.

Why Split?

In its most basic form, microphone splitting is the art of taking a single microphone and splitting its output to feed multiple sources. It is almost always necessary in live performances.

Most performers, whether in auditoriums or outdoor venues, need a little help to amplify the performance. At one time, sound systems were mainly used to enhance the acoustical sound; multiple microphones, large power amplifiers, and large speaker systems were not yet the norm. In those days, a single 100-watt power amplifier was all that was necessary to power the single speaker system.

In the 1960s, a new era in live sound was developed as the result of changes in the recorded-music industry. Rock-and-roll bands were attracting larger audiences in bigger arenas. Amplified sound was overtaking acoustic sound, and the average listener was expecting and getting used to highly amplified performances. Speakers became speaker systems that included stacks and stacks of bass cabinets and many high-frequency horns.

As those speaker systems expanded, the need for more and larger power amplifiers became evident. The use of multiple microphones in live performances became the standard. The sound

level became so high that the performers were unable to hear each other, or themselves, as they played. To overcome that, monitor speakers are placed in front of each performer. To feed both the monitor speakers and the main house PA system, the outputs from each microphone must be split. The most basic scheme used is shown in Fig. 1.

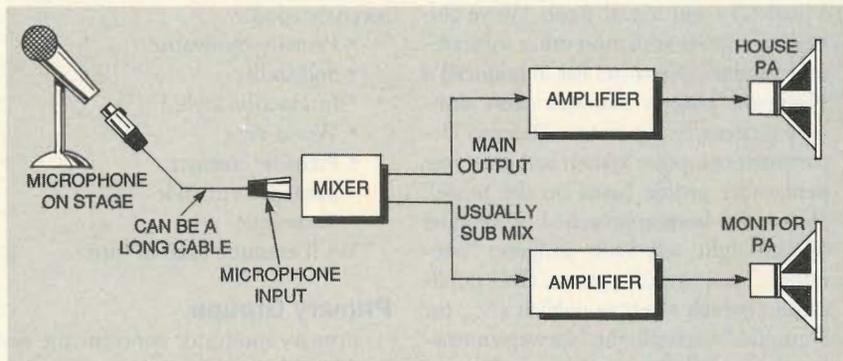


FIG. 1—IN THE BEGINNING all the mixing was done ahead of the amplifiers.

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A New Solution

One solution to that problem is to have a separate feed from each microphone to a mixer that is devoted to the house PA, and another that is devoted to the monitor system. Figure 2 shows that arrangement.

To implement that microphone-splitting solution, several important fac-

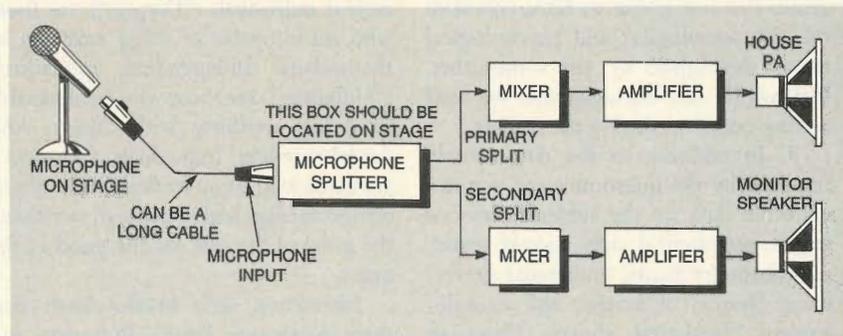


FIG. 2—AS SYSTEMS BECAME MORE ADVANCED, separate mixers were used for the PA system and the monitor speakers.

tors have to be considered. Those include maintaining audio quality and minimizing signal loss. Also, the new system must be passive so that there would be a minimal amount of noise, distortion, etc.

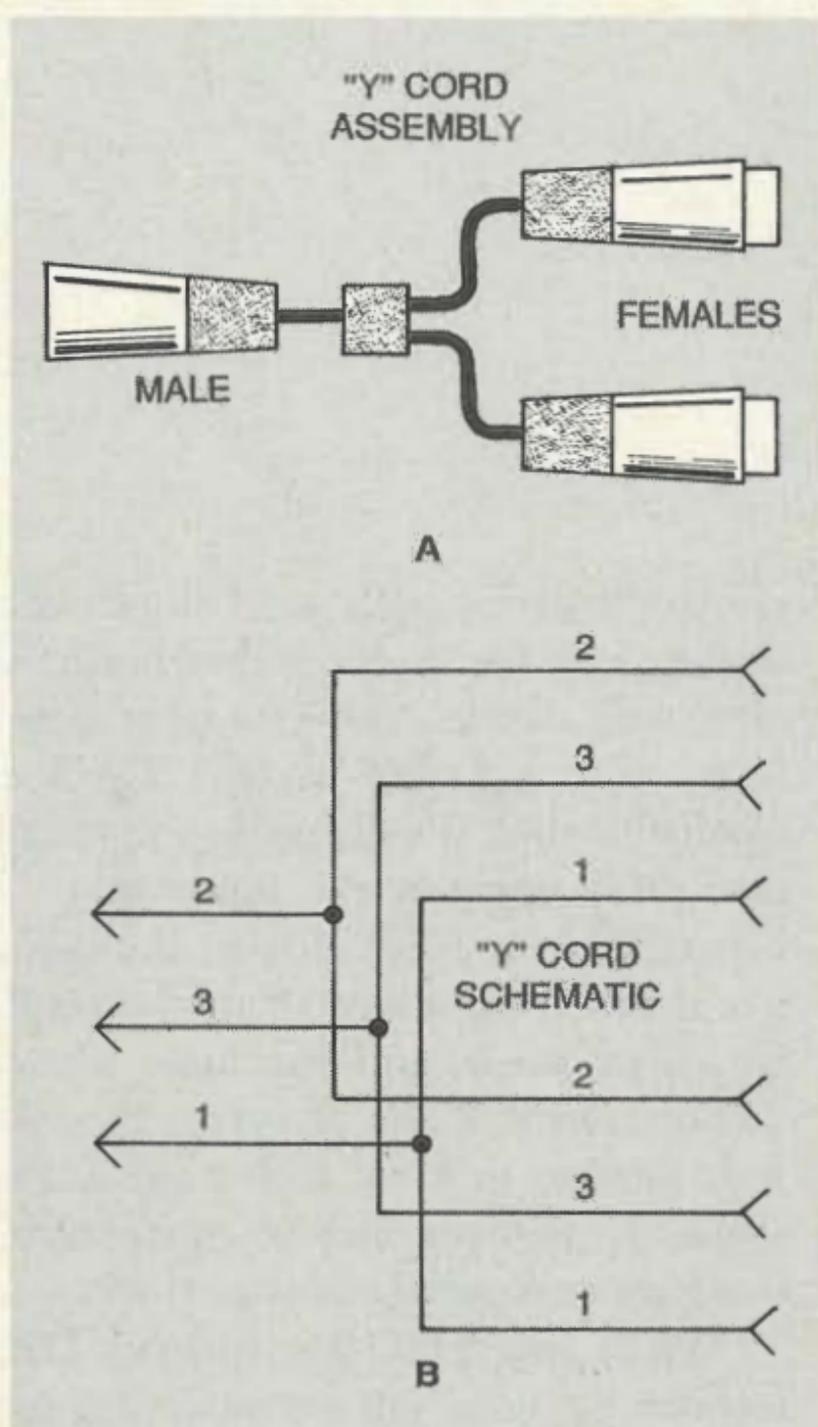


FIG. 3—TWO VIEWS OF THE Y-CONNECTOR. At the top (A) is a pictorial view. The lower portion (B) shows a simple schematic.

The problem with that solution is that it is difficult and expensive to implement. As a result, another solution that is frequently used is the “Y” connector assembly shown in Fig. 3. That set up is easy to use and inexpensive.

The problem is that the “solution” is entirely wrong! It results in the signal being cut by 6 dB, which means that the signal level is reduced 50% at the primary part of the setup. What makes the setup particularly bad is that this is the point where the signal is the weakest and most affects the system’s overall signal-to-noise ratio.

In summary, under normal circumstances the Y connector scheme should be avoided. However, if time and money make its use necessary, by all means use it. After all, the show must go on! **EN**

FOR MORE INFORMATION

For a copy of a complete 32-page booklet on *Mic-Splitting Demystified* send \$5 to Franklin J. Miller, 2100 Ward Drive, Henderson, NV 89015-4249. Price includes shipping. NV residents must add sales tax.