

Avoiding Problems in Acoustical Keyboard Amplification

By Andre Walton

A simple solution to problems created by microphone stands lies within a technological advancement relative to the contact microphone system. Opportunities for improvement in sound quality now exist in the contact condenser microphone.

Acoustic keyboard instruments are the first choice in environments where atmosphere and quality are of prime importance. As you probably have discovered, microphone stands are a distraction and an inconvenience. They screen the piano, get in the way of other performers, are easily knocked out of place, and have to be stacked away at the end of the performance. A simple solution to these problems is the contact microphone.

Amplifying acoustic piano and other older keyboard instruments, such as the harpsichord and clavichord, is a major, time-consuming problem. Traditional microphones on stands are not only cumbersome, as they require expertises to set up. Typically, two top quality microphones on stands are needed to cover the entire range of the keyboard equally and without feedback or interference from other instruments or from resonance. This precise arrangement has to be done for every performance and takes a trained audio engineer to achieve optimum results.

A NEW MICROPHONE

One simple solution to these problems has been the contact microphone. In the past, this type of microphone did not meet the quality demanded by acoustic musicians and audio engineers. But now a radical change in technology has produced a new type of contact microphone - the contact condenser microphone.

The contact condenser microphone is a completely flexible strip. 8" long and 5/8" wide, sheathed in a plastic case. A thin microphone cable is permanent wired to the microphone, terminated with a simple 1/4" phono plug at the preamp end. Since it's a contact device, it solves in one stroke all the handling problems of conventional microphones.

In the configuration available for piano, there are two stick-on tape microphones which attach to the underside of the piano and can be left there indefinitely. There are no stands, clutter, or visible miking at all. Once in place, the microphone will supply the same excellent sound quality. And because it's only a matter of connecting cables, set up can be done by anyone.

NO DIFFICULTIES

Because it's a contact system, the condenser microphone eliminates the difficulties encountered in large, lofty halls. These are problems in resonance due to sound travelling up to and around the roof space, then reflect back down into the conventional microphones. The contact system picks up the vibration from the surface to which it is attached, and only from that surface, so when it's used on a piano, it isn't affected by vibrations from other instruments, the sound of singers, or resonances from the hall. Neither will the contact system pick up noise from the audience.

In a live recording situation, if the sounds of the room or audience are wanted they can be added by the sound engineer, using an ambient mike. In some cases, it's good to include some ambient characteristics of a hall or emotive responses of an audience to provide atmosphere, but by using a contact system plus an ambient microphone it is a matter of choice rather than an unavoidable necessity.

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NEW ADVANTAGES

The contact condenser microphone system not only overcomes problems, it also introduces advantages. Because there's no feedback, the older, quieter instruments like harpsichords can be amplified successfully and take their place among modern instruments. The system can also be used to enhance instruments, both at the top and the bottom of the frequency spectrum. Turning up the bass on a conventional microphone will merely make the piano sound boomy and turning up the treble will make it tin-like.

None of this applies to a contact condenser system, allowing it to enhance the sonority and richness of slower passages or brighten top notes of faster ones. This is especially valuable when compensating for shortcomings in the speaker system, something that can be done without losses or exaggerations of conventional microphones. The stereo sound stage achieved with contact microphones is more dramatic than that of conventional microphones, giving a larger than life sound appropriate in churches and halls.

The contact microphone condenser microphone unit is available either in mono or stereo, both using a pair of contact microphone tapes which attach to the soundboard of the piano. Sources of condenser microphones available for your use include: C-T Audio Marketing, Inc

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