



Voice: Dynamic or Condenser

A performers perspective on the difference in microphones and what they should be used for

I would hazard a guess, that most performers have never actually thought about whether they are using the right microphone for their style and vocal range or even know there is a difference. Even after many years as a vocal performer and with 15 years in theatre management I have to confess that until I came to TOA I didn't know much about microphones – although I have used many!

From a performers perspective I was more interested in the weight than whether it was the correct type and, as everyone does, relied on the genius on the sound desk to make me, hopefully, sound good. It was not on my radar to understand the difference and what could be used for diverse vocal applications.

So, with the help of an explanation from our technical team as to how it all works this is what I now know:

1. There are basically two types of microphone that you can use for vocal work – condenser and dynamic.
2. The main difference is how they convert sound. A dynamic microphone works with a diaphragm and coil so when the sound hits the diaphragm this makes the coil vibrate creating currents which convert into electrical signals.
3. A condenser microphone works by using two plates and a diaphragm to form a capacitor. Sound makes the front plate vibrate pushing the two plates closer together creating a change in capacitance. They have a wider frequency response and require phantom power.

So why does this make a difference. For live performances singers should opt for a dynamic mic. They are much less sensitive than a condenser mic and therefore less likely to pick up sounds you don't want. They are also more robust so more ideal for gigs and touring and not just for vocals but instruments such as guitars and drums. They are generally not as expensive as condenser mics but highly effective in live performance.

Condenser mics are much more delicate and are more ideal for use in the recording studio. They are much more sensitive to sound and certainly singers have to use a different technique to record than to perform live – if you are a big hitter vocally you have to really pare back when recording with highly complex studio systems. Condenser mics are also much better for public speaking so excellent in applications such as houses of worship and conference rooms.

However, there is an exception to this rule. Headsets are always condenser microphones and whilst you might think this may cause a problem, back to the statement that 'are vocalists knowledgeable about how they produce their sound', then do they know when to temper their volume output with the microphone being located so close to the source of sound. I would say that is when we rely on the genius sound technician to keep us vocalists under control and ensure they can blend the sound.

Thanks Tech Team for the insight.

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