

# FOCUS on VOCAL TECHNIQUE

## Achieving “Carrying Power”

by Shirlee Emmons

If one disregards stylistic demands, it might be said that opera singing differs from recital singing in only one substantial way, that is, the voice of an opera singer must be audible in a large hall despite the considerable decibel output of an orchestra. A recital singer is required to be audible only above the weaker sound created by a piano, except for those occasions when the modern concert business forces the singer to perform in an unsuitably large hall. Thus, “carrying power” becomes the distinguishing technical characteristic of an opera singer. Indeed, unless the conductor can be persuaded to hold the orchestra down, a singer who lacks a big voice and/or the ability to cut through an orchestra is at a grave disadvantage.

Clearly, the auditory parameters of your voice are more or less determined at birth. Your vocal gift is just that—a “gift” possessing certain proportions. Trying to enlarge a basically slim voice to suit the operatic marketplace, where “large” is venerated by most listeners and many musical colleagues, almost always ends in the tragedy of a lost voice or the loss of high notes and pianissimo.

Yet, achieving a tone with enviable carrying power is not out of the question, regardless of the size of your “gift.” The first step toward understanding is to define our terms carefully. (Vocal language is notoriously imprecise.) Is a rich, deep, large, warm voice synonymous with a voice that carries well? Not necessarily. “Size” is not the defining issue for an opera singer. The annals of opera are stuffed with stories about that type of singer whose voice, judged to be too bright, almost drove the listeners out of the rehearsal room, only to triumph on stage in the performance as the only member of the cast whose tone quality seemed to have infinitely more beauty in the house than in the rehearsal room, and the only singer who could be heard in the top balcony and the back of the hall. Or, what about Tito Schipa, a legendary tenor with a smallish voice, about whom each and every article mentions at some point that “every note of his slender voice could be heard in every seat in the house!”

The next step is to understand what will give carrying power to a relatively small voice-- or indeed, to a large voice as well. (Just as a flabby three hundred-pound man is not stronger than a one hundred eighty-pound man who works out, a big voice can be large but flabby and a small voice can be slender but focused!)

With the appearance of the many fine vocal research teams in the United States and abroad, it became evident that there is an overtone, the frequency of which, when present in the singing tone, will permit it to be heard *through* the sound of the orchestra, none of which instruments can play in this vicinity. That overtone lies somewhere between 2000 and 3000 Hz. The human ear can distinguish this overtone (commonly referred to as 2750, the frequency of

“ring”) from a group of other overtones, thus making the listener hear as “louder” the tone that contains it better than he/she can hear a tone that is without it. Listeners’ non-scientific descriptions of a tone containing 2750 include:

“focused” “centered” “packed with beauty” “full of tone” “visceral”  
“slender, but with great tensile strength” “satisfying” “clear” “strong core”

This “ring” can be maintained by the singer regardless of the vowel being sung and regardless of the dynamic level. It is not a figment of someone’s imagination. It is visible on the graphs. On the printout one can clearly see anomalies such as the momentary loss of the overtone or its presence throughout an entire small slide upwards during the attack of a particular high note. Singers vocally gifted in such different ways as Birgit Nilsson and Edita Gruberova have a very strong showing of this overtone. One could say that this overtone is somewhat more valuable for men than for women, because men sing in the pitch area where the orchestra plays most of the time. Women’s voices of the lower fachs spend a lot of time there as well. But a poor high C will actually carry as well as a good high C, more’s the pity.

Now....how to do it?

Those same acousticians hired to correct the deficiencies of a concert hall’s acoustics tell us some facts. When the vowel being sung is *compatible* with the sung pitch, three wonderful things happen: the singer experiences more comfort; the tone is more beautiful; and the air supply lasts longer. When the vowel is *incompatible* with the sung pitch, the opposite happens: the singer experiences anything from slight discomfort all the way to actual pain; the tone is anywhere from slightly less beautiful all the way to really ugly; the air supply is diminished radically because it takes more air to sustain an improper vowel. The three attributes of the compatible vowel result in a more easily produced, more focused tone, which carries farther without using the forced air of brute strength.

Do these facts suggest that resonance is a more important factor than loudness?  
Which vowels, therefore, should we modify? Modify to what? On what pitches?

The answers to these questions are fairly complex. A simple answer would tell you that, in general, a forward vowel will carry better than a back vowel. In general, back vowels can be encouraged to sit further front than their natural position, which is centered in the back of the tongue. In general, a vowel sung with protruding lip corners will carry better than one with the lips stretched laterally. In general, a largish mouth opening will make more noise—all other factors being the same—than one with a smallish mouth opening. In general, the lower the entire tongue sits, the more diffused the sound, even though richer. In general, the higher the pitches one must sing the less useful a real [a] is. (An eminent Italian baritone said to a student of mine that the secret of singing is “never sing ah”?) The pitches in the *passaggio* of every voice category in general respond better and more efficiently when sung more “narrowly” (front tongue position, smallish mouth opening, protruding lips). In general, the higher and fronter the tongue position, the more carrying power the tone will have and the easier will be both the forte and pianissimo notes.

The perceptibility tables tell us that, in general, when each voice reaches the pitches of its high passaggio, the human ear can no longer tell the difference between one front vowel than another, or one back vowel and another. So why sing the vowel that is incompatible with the sung pitch (consequently less beautiful and more difficult to do) when the listener cannot tell that you are singing it? Just modify one type of vowel with the same type although different, i.e., change an [i] that is not working to an [ɛ] or [œ], an [I] or [Y], an [e] or [ø], not to a vowel from another series.

Initiate some of the above generalities into your own singing and see how you will achieve greater resonance and carrying power with less effort. Louder is not necessarily the answer. Resonance and carrying power— thanks to 2750—are. Choose your vowels with these ideas in mind.

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