

# Practical Use of the Stroboscope

by Jere T. Humphreys

Let us look at a practical procedure for determining the pitch characteristics of wind instruments and ways of improving our ability to play in tune. In order to use this method one needs a stroboscope (stroboconn or stroboscaler), the performer, another person to act as monitor, and a piece of graph paper to serve as a pitch chart.

After a thorough warm-up the performer should tune his instrument to the strobe in the way he is accustomed to tuning. Then, standing or sitting so that he cannot see the tuning device, he should sustain a tone that is within a comfortable pitch and dynamic range. The person serving as monitor turns the knob that controls the cents scale (lower half of stroboconn, upper left on stroboscaler) until the pitch



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indicator stands still. The monitor then records the number of cents sharp or flat for that particular note on the pitch chart (figure A). Continue this procedure for each note within the range of the performer. The resulting pitch chart will tell which notes are out of tune and how much. It will also give some indication of the pitch characteristics of the various registers of the instrument.

Next, repeat the entire procedure at a pianissimo dynamic level, followed by the same thing done fortissimo. These two levels should be recorded by the monitor on the original chart using different color pencils or pens for each respective dynamic level. The completed chart will show clearly not only that varying dynamics alter the pitch; for example the flute normally sounds sharper when played fortissimo, but also the amount of the intonation variance.

These steps should be repeated on several different days or weeks so that the performer can get some idea of his own consistency or inconsistency. After a degree of consistency has been established, the player can then begin individual work with the strobe—learning to play the notes in tune in all registers and dynamic ranges. Then the player should begin the whole program again this time with one important difference—a heightened awareness of intonation characteristics of his instrument. It is at this time that the player should use every technique available to him to play each tone in tune including lipping, slide movement, finger shading, alternate fingerings/positions, voicing, etc. A thorough knowledge of the harmonic series and valve combination deficiencies could be helpful at this time. The monitor will again duly record the results of the performer's efforts—results that should be improved over previous ones.

Many other aspects of performing may be checked and measured by use of the strobe and pitch charts. One thing that can be shown graphically is the effect of temperature changes on wind instrument intonation. Another is

the effect of different brands and strengths of reeds (harder reeds generally will sound sharper than softer one), reed placement, different mouthpieces, barrel joints, and mutes. Even the effects of embouchure adjustment or instrument position can sometimes be measured.

The entire procedure should be repeated as often as is necessary to establish the ability on the part of the performer to adjust each note properly. Even many advanced players could benefit from an occasional check since our human ears seem to become accustomed to a bad "scale".

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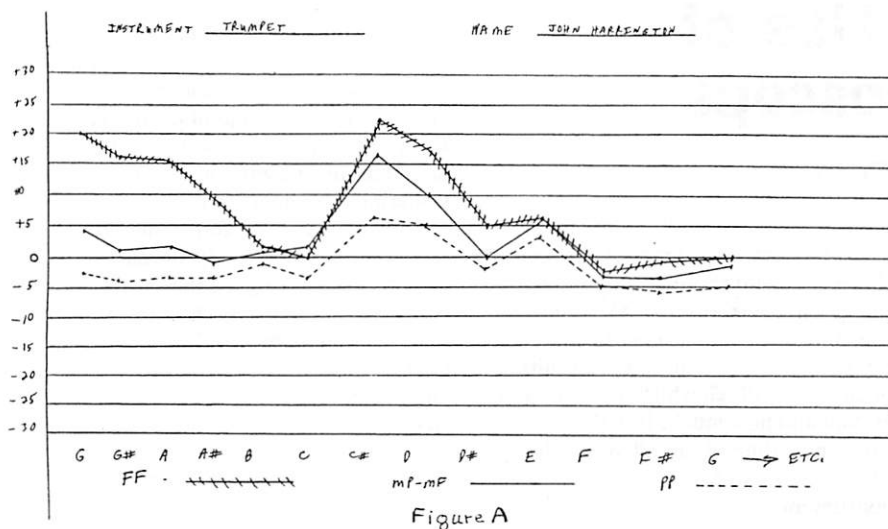
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