

It Doesn't "Just Happen"

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In a democracy the majority rules unless the courts intervene to protect the minority. The same should be true in tuning, because the majority can be wrong, and the minority right. This is especially true in band and orchestra rehearsals when dealing with intonation problems between sections. While governmental systems deal with people and their feelings, tuning is pure mathematics (with a dash of hearing psychology thrown in for good measure). A=440, the International Standard Pitch, is a scientifically measurable quantity about which there can be no argument unless the standard is changed. Why then is it so hard to convince those in charge of setting pitch in an ensemble (directors or players) that "A=440 cps" is the only correct internationally recognized pitch standard?

Manufacturers design instruments to be acoustically "well in tune" at a pitch level corresponding to the international pitch of A=440 cps. Instruments have small design compromises which produce certain notes that are slightly out of tune in relation to the rest of the notes around them; however, the scale compromises on good instruments are small enough so that all the notes can be tuned easily with adjustments of the embouchure or the air pressure. Any instrument made by a reputable manufacturer can be played in tune by a reasonably sensitive player, if the tuning level of the performing group is close to A=440 cps.

There are two main reasons why the general pitch level of most bands and orchestras wanders badly away from the accepted international standard.

First, most players and conductors do not take into account the fact that large wind instruments rise in pitch much further than do small wind instruments for any given rise in temperature. This means that the tuba, euphonium, trombone, bass clarinet and baritone saxophone (the bassoon will be dealt with later) must be retuned constantly and pulled down in pitch throughout every playing session. Since these instruments rise further in pitch, they also must tune down further and more often to avoid the real possibility that they will rise above the top possible pitch level of the smaller instruments.

Second, most groups pay only token attention to the tuning note, whether sounded electronically or given by a player. Many players reject tuning notes at the A=440 cps level because their ears have been trained in groups that play consistently sharp. Musicians think that "sharp is good, flat is bad", so there is a constant race to stay "on top of the pitch" for brilliance and projection. This contest is self-defeating. The deadly musical result is a constantly rising general pitch level that makes the flute section sound flat and the clarinets sound pinched and small. Flutists can roll the embouchure plate away from the lips and push in the head joint to raise low and mid-range pitch, but they reach a point quickly where no more upward adjustment is possible. Clarinet players simply bite "holes" in their lips. In effect, the brass instruments and the strings, both

having a much greater ability to tune sharp, rob the woodwinds of any possibility of playing in tune throughout most of their entire range.

Many conductors think that flutes have the worst tuning problems of any section. "Everyone knows" that flutists play flat in the low register and extremely sharp in the high register. What "everyone" does not seem to realize is that these problems usually are caused by the generally high intonation level of the group, not the incompetence of the players.

When group pitch rises for either or both of the reasons noted, the flutist is caught in the following "no-win" situation:

1. Player "pushes in and rolls out" as far as possible without losing sound.
2. Player still cannot come up to the prevailing pitch, so must sound flat in low and middle register, or not play at all.
3. Player has "pushed in and rolled out" much too far for low and middle register playing, so the high register becomes extremely sharp (if head joint is pushed in as far as possible, most flutists cannot lower high E, F#, G and G# enough to create perfect octaves.) This forces them to play flat in relation to the prevailing pitch on low notes and sharp on high notes, with no possibility of matching pitch with other instruments.

If the above outline fits your flute section, there is only one logical solution. Lower the general pitch level of the group (everyone else) so that the flutes can play in tune again.

This transition to a lower pitch level must be gradual. Ears that for years have been trained to hear sharp, and embouchures that for years have been forced to bite and pinch will not correct themselves in just a few short rehearsals. A sustained effort to check with an electronic or mechanical sound source is needed to erase years of faulty ear-training.

Many bonuses accrue to the ensemble willing to make the effort to lower its general pitch level. For the first time, woodwinds will have the acoustical capability of playing in tune. For the first time fixed pitch instruments such as piano, xylophone, orchestra bells, and chimes, will sound in tune instead of flat. For the first time tone quality of individual players and the group as a whole will become darker and less edgy, due to relaxed embouchures. For the first time a greater dynamic range will become possible because relaxed embouchures permit an "in tune" *ff* not possible with pinched embouchures. All of these musical benefits happen almost imperceptibly, but they do happen.

A few cautionary notes:

1. Do not lower pitch suddenly by yanking tuning slides to the limit, or pulling all clarinet joints until the instrument is barely playable. Pitch must be lowered gradually by relaxing embouchures, opening throats.
2. If single reed players are using stiff reeds on close-lay mouthpieces, try medium-strength reeds on medium-lay mouthpieces.

3. Large changes in pitch level on bassoon must be accomplished by switching to a longer bocal (usually a no.2 or 3) or by making a longer reed. Most inexperienced bassoonists play sharp because of a no.1 bocal (too short), a reed that is too short (or stiff), and an embouchure that is too tight.
4. Oboists can change overall pitch level very little without affecting tone quality unless they change the strength or the length of the reed (oboes should be played with the tube pushed all the way into the well for best response).

Do not use oboists or clarinetists to give the tuning pitch at rehearsals and concerts! Make them tune to an accurate electronic pitch like everyone else.

The international pitch standard, A=440 cps, is vitally important to musical the health of every musician. Adherence to this standard allows each player in an ensemble maximum tuning latitude. Even more important, it gives every musician the capability of playing in any ensemble without having to conform to drastic changes in overall pitch level.

Pulling the pitch level down to A=440 cps and keeping it there (or as close as stage/rehearsal room temperature allows) will help band intonation more than anything else that can be done. Remember, bands can tune sharp very little without losing tone quality and pitch control. A dramatic improvement is noted almost immediately when bands **PULL OUT AND TUNE DOWN!** Try it; You'll like it!"

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