

Keyboard Technology in the Double Reed Studio

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Recent advances in technology with electronic or digital present today's studio teachers with an opportunity for improved teaching techniques. One might assume that electronic keyboards have applications only to the piano studio, however, these instruments also promise benefits to double reed teachers and their students as well. Below I recount some of the ways I have employed the Yamaha Clavinova in my bassoon studio at West Virginia University. These teaching and practice methods can be easily adapted to oboe and other double reed instruments as well.¹ At the end of the article I also give a few suggestions for teachers who wish to employ these teaching and practice methods, but do not have access to an electronic keyboard.

Introduction to Reproducing Keyboards

Not all readers may be familiar with the variety of technology available on today's electronic keyboards. At the high end of the market reproducing pianos such as Yamaha's Disklavier or Baldwin's ConcertMaster employ fiber-optic technology to record which notes are played, how long they are sustained, the speed at which keys are struck, and which pedals are depressed. This information is stored either in the temporary memory of the instrument or on a 3.5" floppy computer disk. When stored on the computer disk the exact performance (with all its dynamics, rubato, etc.) can be played back on any similar instrument at a later time. Many of these reproducing pianos are grand pianos with the electronic technology added. They play like a grand piano and reproduce recorded performances as if played by a musician at that moment. The keys and pedals move when the performance is reproduced; in many respects it is a 20th century version of the player piano. Towards the lower end of the market electronic keyboards such as the Yamaha Clavinova can record and reproduce notes played, dynamics, etc. but without the same acoustic reproduction of the fiber-optic instruments. The Yamaha Clavinova has General Midi capabilities; that is, it can reproduce the electronically generated versions of instrumental sounds (harpsichord, organ, oboe, clarinet, violin, etc.) that are present on most computer sound cards.

Droning Pitches as an Aid in Developing Better Intonation

In an earlier article in the *Double Reed* I noted that playing passages of music over a droning pitch is a great aid to improving intonation.² While electronic tuners (such as a KORG) have their place, tuning to another pitch better simulates true performance conditions. Electronic tuners make use of the eye not the ear for pitch adjustments. Students may become quite adept at visual tuning yet all the while neglecting to tune with their ears. Tuning to a droning pitch, however, helps student develop the aural skills they need to play in tune with other musicians.

The droning pitch is an excellent tool to use for improved pitch in arpeggios and scales. Choose an instrument from the General Midi selection on the keyboard that is rich in overtones. I find that the pipe organ is perfect for a drone. Play the root of the arpeggio for the student in a low octave around or below the bottom of the bass staff. While you are playing the drone students should try to tune their arpeggio to the droning pitch (See Figure 1). Students will hear more "beats" when they are out of tune and less beats as they tune their notes. With repeated practice students will learn where to place each note on their instruments. They will discover tendencies of each pitch on their instruments whether sharp or flat. For scales, play the tonic or the note name of the scale. Students should pay careful attention to tune unisons, octaves, thirds, fourths, and fifths above the drone. Figure 2 gives an example of the extended range of a scale I would have intermediate students practice with the drone.

I have all my students practice scales and arpeggios as high and as low as they are able to perform. This increases their performance skills in the most difficult registers of the instrument. I don't worry about ending with the tonic with the beat, rather good intonation and fluency are the purpose of the exercises. If this disturbs you, however, you can write out the exercises with "turnarounds" so they terminate on the beat. For instance, in Figure 3, I have rewritten the arpeggio in Figure 1 to end on the beat.

In addition to scales and arpeggios, students should practice long tones, drives, and "pitch pinpointing" with the droning pitches. In two earlier articles I discussed a method of practicing

long tones and drives according to principles set forth by Marcel Tabuteau.³ I will not repeat that material here, but rather I direct the reader to the articles contained in the endnotes. “Pitch targeting” is an important skill that all performing musicians utilize. By pitch targeting I don’t mean the pitch adjustments that occur after the note has been sounded, rather, I am using the term to indicate the accurate start of the pitch at the moment it sounds. The exercise might include piano and staccato notes selected from a tonic arpeggio above the drone and played with a metronome (Figure 4). The purpose of the exercise is to correctly place the start of each note above the drone in proper timing and pitch. Since double reed performers struggle with low register pianissimo articulation, the exercise may also focus on the low register (Figures 5 and 6). You should also practice articulation precision with varied dynamics and note lengths (Figures 7 and 8).

There are many creative ways you can employ the drones to practice better intonation. Figure 9 contains a passage from the Weissenborn Study No.15 (numbered 10 in the Universal edition) of the *50 Advanced Studies*. A drone on “A” works well in the opening on the study. Then switch to a drone on “D” for the beginning of the Andante. Other drone pitches can be chosen throughout the study. Often it is easiest for the teacher to play the drones on the keyboard instrument and change them at the appropriate place. In many instances you can avoid switching drones too often by setting the drone to the dominant scale degree instead of the tonic. For instance, the opening to Weber’s *Andante and Hungarian Rondo* for bassoon works well with a drone on “G.” The oboe and bassoon solos in the second movement of Tchaikovsky’s Fourth Symphony can be effectively practiced with a drone on “F” (Figure 10—oboe solo).

Drones, Scales, and Accompaniments on Disk

Naturally students will more rapidly improve their intonation if they repeatedly practice their pitch outside the lesson. One of the great features of the reproducing keyboards is their ability to record midi files on a computer disk. These midi files can be sounded either from a Clavinova or similar instrument or they can also play on an IBM compatible computer equipped with a sound card and speakers. I have recorded for my students twenty-four drones—one for each scale degree over two octaves—that last about 1 minute each. Over these drones they can repeatedly practice their arpeggios, scales, and selected passages of music.

The lowest pitched drones (Bb0-B1) are most suitable for working on low register bassoon intonation or intonation on the lower registers of the contrabassoon. The higher pitched drones start on Bb1 (low Bb on bassoon) and progress chromatically upward. These higher drones are effective for most of the intonation work on the bassoon and will work best for English horn and oboe as well. In addition to the drones I have also recorded another 112 midi files with scales and arpeggios at different tempos. All of my bassoon students at West Virginia University make use of the midi files weekly during practice sessions and in lessons. These files are available free of charge on the IDRS internet site for anyone who wishes to download them. An introductory page describing the content and names of the midi files can be accessed at <ftp://www.idrs.org/idrs1/pub/mid/readme.html>. The directories containing the midi files are at <ftp://www.idrs.org/idrs1/pub/midi/>.

I require each student to bring computer disks to the lesson. On the computer disks I record the drone pitches, the scale studies, and the accompaniments to solo works they are currently working on. At West Virginia University, and I suspect other schools as well, students have limited access to keyboard accompanists. Ready access to an accompanist is especially helpful for young students who have little ensemble or performance experience and who are often unfamiliar with their repertoire. Although the “accompanist on a disk” is never a replacement for a live pianist, it does afford all students—especially the younger ones—the opportunity to learn how their solo part fits in with the accompaniment. Students can practice with the disk accompanist as often as they would like, without additional accompanist fees with a Clavinova or with their IBM compatible computer. Accompaniments to a few bassoon solo works are available on the IDRS internet site, which will play on both the IBM and Mac computer platforms. In the future we hope that IDRS members will post other midi accompaniments on the site for use by all double reed performers.

Intonation with the piano quite dramatically differs from intonation with instruments that are able to adjust their pitch. Practicing with the droning pitches afford students the opportunity to practice “pure” intervals, that is, adjusting each note to minimize “beats.” This type of pure intonation is needed for performances with wind quintets, orchestras, etc. Practicing with piano accompaniment to scales, arpeggios, and solo works acquaints the students with equal temperament. On the whole performances with

keyboard instruments demand that the double reed performer conform to the tempered scale. Students must effectively master both types of tuning—pure and equal temperament—if they wish to excel in performance.

A Few Practice Ideas for Those without a Reproducing Keyboard

There are many ways you can effectively employ the ideas in this article even if you do not have access to a Clavinova or similar keyboard instrument. If you have access to an organ—especially one with foot pedals—you can make use of all of the drone exercises discussed. In fact you even have an advantage here because you can “accompany” yourself by playing the drones with the pedals and changing the drone pitches whenever you desire. A tape recorder with a good speaker system can also be used to reproduce drones, scales, arpeggios, and of course accompaniments. I suggest you purchase a tape recorder with a tape counter, however, to minimize frustrations with finding the drones or

scales on the tape. You may wish to write down the counter number of each item on your tape for easy access. Last of all, don't forget that playing the drones over a computer's speakers is an excellent way to practice. With multimedia computers becoming common place, more and more students and professional musicians will be able to make use of midi files for their practice sessions.

Today's double reed teachers should seek to bring the most effective means of teaching and practicing to their students. Improvements in the technology of reproducing keyboard instruments afford the studio teacher new ways to help their students develop good intonation skills. Much as the metronome provided a revolutionary way for musicians to practice their rhythmic and tempo setting skills, the Clavinova and other digital keyboard instruments provide new avenues for students and professionals to practice their tuning skills. Though the craft of double reed performance is centuries old, we can yet improve our performance skills with this new technology.

FIGURE 1. An Arpeggio Exercise over Drone.



FIGURE 2. A Scale Exercise over Drone.

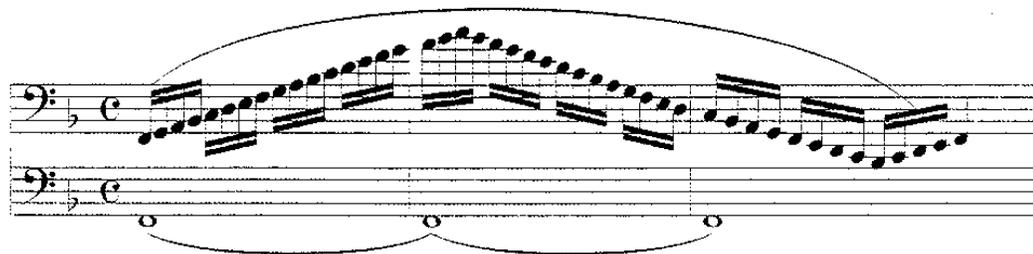


FIGURE 3. An Arpeggio Exercise with Turnaround.



FIGURE 4. Study with Pitch Targeting for Bassoon.

FIGURE 6. Low Register Study for Oboe with Drone.

FIGURE 5. Low Register Study for Bassoon with Drone.

FIGURE 7. Varied Pitches for Bassoon with Drone.

FIGURE 8. Varied Pitches for Oboe with Drone.

FIGURE 9. Weissenborn Study #15 for Bassoon with indication for Drone.

Lento
a piacere

p *mf* *f*

Drone on A >>>

f *p* etc.

Andante

p *espressivo*

Drone on D >>>

FIGURE 11. Varied Pitches for Oboe with Drone.

The musical score for Figure 11 is presented in two systems. Each system contains a treble clef staff (top) and a bass clef staff (bottom). The key signature is E-flat major (three flats) and the time signature is 2/4. The top staff contains a melodic line for the oboe, starting with a dynamic marking of *p* (piano). The bottom staff contains a drone, represented by a single note held across the measures. The melody in the top staff consists of eighth and quarter notes, with slurs indicating phrasing. The drone in the bottom staff is a single note, likely E-flat, held throughout the piece.

End Notes

¹ For a discussion of employing the reproducing keyboard in the piano studio see Laura Beuachamp and Barbara Fast, "Teach and Practice on a Reproducing Piano," *Piano & Keyboard* 19 (July/August 1998): 38-40.

² "Bassoon Lessons with Arnold Schwarzenegger, or What I Did on My Summer Vacation," *The Journal of the International Double Reed Society* 26 (1998): 99-104.

³ A Bassoonist's Expansions upon Marcel Tabuteau's "Drive," *The Journal of the International Double Reed Society* 20 (July 1992): 27-30. "Using the Bassoon Bocal as a Diagnostic and Pedagogical Tool," *Journal of the National Association of College Wind and Percussion Instructors* 60/3 (Spring 1992): 4-7.