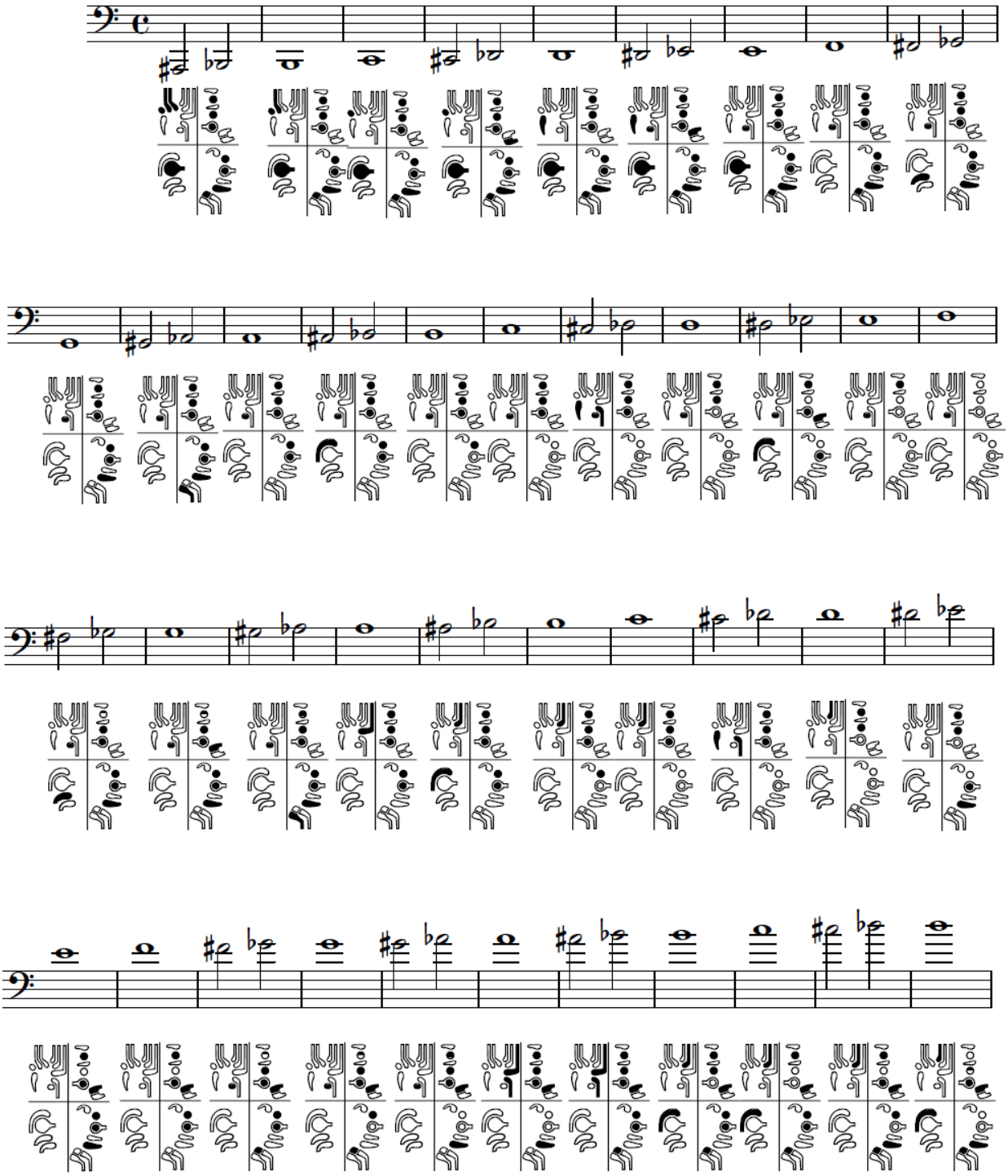
Bassoon Basics:

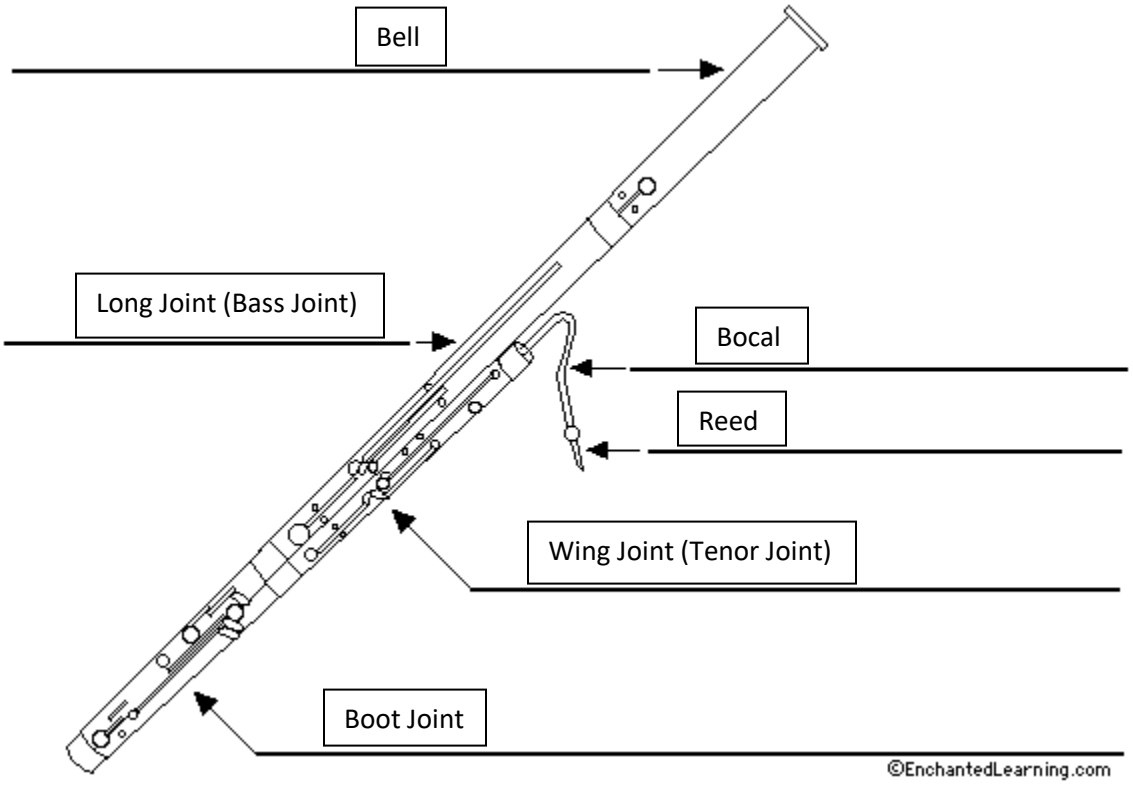
A Handout presented by Janelle Ott, DMA

Table of Contents

Bassoon Fingering Chart



Instrument Care and Maintenance



1) Putting a bassoon together

The bassoon should be built from the bottom in the following order: Boot, Wing (making sure the curve of the wing is lined up symmetrical to the long joint hole), long joint, bell. The bassoon is taken apart in reverse order (bell, long joint, wing joint, boot).

2) Swabbing

-**What to swab**

The boot joint and wing joint are the only two joints that need to be swabbed out. It is especially important to swab the boot joint each time the instrument is played; water will collect near the bottom of the boot and eventually will cause the wood at the bottom of the instrument to rot. Boot rot is a difficult and extremely expensive problem to fix. Water can also get stuck in the tone holes and flick (or speaker) keys on the back of the wing joint; this will result in a gurgling sound when playing and does not clear easily.

-**Which swab?**

DO NOT use a push swab. If using cotton swabs, there will be two swabs (one for the boot joint, one for the wing joint). You must use a bassoon swab—other swabs usually will not fit through the U-Tube at the bottom of the boot. Even dedicated bassoon swabs can be difficult to use; some are very difficult to guide through the U-Tube. Swabs with a ball chain work best in my experience, here is the swab I recommend to my students:

How to swab:
Swab the boot joint first, then the wing joint. Always feed the swab through the bigger hole first—for more information, see the end of this document. If the swab becomes stuck in the bassoon, DO NOT attempt to force it through. Either pull it backwards or invest in a swab pull (pictured above, usually retailing less than $20).

Bocal swab?
Some students REALLY like bocal swabs. The problem is they can get stuck in the bocal and are difficult to get out (read: will need to go to a repair shop!). The students who seem to gravitate toward bocal swabs are the conscientious ones, so I usually let them use the swab as long as they know to be careful and not force the swab if it gets stuck.

The bocal SHOULD be cleaned (ideally every six months) with warm water and a bocal brush; this is similar to how you would clean a mouthpiece. Over time, phlegm and dirt

will build up in the bocal and affect pitch and projection. I've included a picture of a bocal swab below; get one with a rubber-coated snake if possible:

3) Equipment: Manufacturers

There are two modern bassoon types: French and German. German bassoons are the far more popular model, and the standard instrument type in the U. S. French models are very different from German models—the fingering chart and characteristic sound are not similar. Avoid purchasing French models!

Bassoons are expensive instruments, but they are built to last! They do not "wear out" the way oboes do, and as long as they are taken care of they will last for decades. I have found that the best student model bassoons are produced by the Fox factory in South Whitley, Indiana. Fox also produces one of the best available contrabassoons. Their prices have unfortunately risen over the years, but the consistency and quality of production makes Fox bassoons an excellent value—you will not find a better instrument at this price point.

Other German models commonly found in public schools are produced by Schreiber, Püchner, Moosman, Yamaha, Köhler. I believe Schreiber bassoons are no longer in production—Schrieber was absorbed into Conn-Selmer. Common professional-grade bassoons are produced by Heckel, Fox, Bell, Püchner, Moosman, and Mollenhauer.

4) Bocals

A good bocal is EXTREMELY important to the pitch, projection, and overall sound of the bassoon. Unfortunately, the metal used to make bocals is so thin that it is easily bent and/or dented. Dents CANNOT be repaired, a bocal MAY be bent back into shape by a repairman ONLY. If the seam on a bocal opens, it can be repaired by a specialist. Paul Nordby of Indianapolis and Martin Kranz of St. Louis are two such specialists.

How to handle the bocal

Because bocals are so delicate, it is very important to make sure the student establishes good habits for handling and storing the bocal.

When putting the bocal in the wing joint (and taking it out), the student should grasp the bocal at the top of the crook, NOT the long thin arm of the bocal. If the bocal is grabbed anywhere but the top of the crook, it will get bent out of shape.

If the student is not playing the bassoon, the bocal should either be placed on the music stand or in the bell of the bassoon. Placing the bocal thin-end-down in the wing joint is NOT a good idea; the hole is too small and the bocal will eventually be bent out of shape. When in the bassoon case, please make sure the bocal is stored securely; a loose bocal will be damaged eventually.

Which Bocal Should I Use?

Bassoons often come with at least two bocals, a Number 2 and a Number 3. The number refers to the length of the bocal; a 3 bocal is longer than a 2 bocal and therefore will play at a flatter pitch. The 2 bocal is designed to play at A=440; a 3 bocal will play about 20 cents flatter than that.

Directors sometimes use 3 bocals to adjust for the fact that bassoonists tend to play sharp; I only recommend using the 3 bocal as a TEMPORARY fix. Because pitch is controlled by a bassoonist's air and embouchure, a student plays sharp because he/she is HEARING the pitch sharp. Assigning a 3 bocal to a bassoonist will allow them to play at a lower pitch in the short term, but if the underlying problems of pitch perception are not addressed, the bassoonist will eventually play sharp on the 3 bocal. Once this happens, the student will have to work twice as hard to get their pitch back down. Any bassoonist can learn to play in tune if given the time and encouragement. (See Troubleshooting)

5) Reeds: Care and Selection

It is in your interest to make sure students learn how to take care of their bassoon reeds; a reed that is taken care of is unlikely to break unexpectedly and will work far better. The specific size and shape of bassoon reeds makes them especially susceptible to mold, so bassoonists need to pay more attention to their reeds than other wind instruments. A conscientious student should expect each reed to last for at least a month of play.

Soaking:

The bassoon reed should be soaked in water before each use. The entire reed should be soaked; very new and very old bassoon reeds will need to soak for longer periods of time (5-10 minutes). This ensures that both the inside and outside of the reed are soaked and will vibrate properly. If a student attempts to play a dry reed, it will be very difficult to produce a sound for the first 10 minutes of playing. After 10 minutes of active playing, the reed has usually absorbed enough saliva to function properly.

Mold:

It is VERY important that bassoon reeds dry out completely between uses. If the reed does not dry out daily, it will soon grow interesting and disturbing molds. The most common mold is black and looks like dirt, but I have seen brown, purple, orange, and green, and white molds. Once a reed has begun to mold, it cannot effectively be cleaned. The mold will not kill the reed, but it will cause the reed to age more quickly. A moldy reed is more prone to cracking and intonation issues.

Helpful tips:

-Don't keep the reeds in the case they come in at the store; transfer them immediately to an actual bassoon reed case! More information on reed cases below.

-The reed will dry out faster and last longer if it is soaked or rinsed after use (I just have my students put their reeds back in their soakers while they put the instrument away, then wipe off the blades with their fingers).

-If it has been raining or even just humid, the reed is less likely to dry out. Try taking the reed case out of the bassoon case, and possibly leaving the reed case open overnight.

-Reeds often need to be soaked longer if there is a sudden change in temperature or humidity; reeds are less happy if it is cold and/or wet.

Reed Cases:

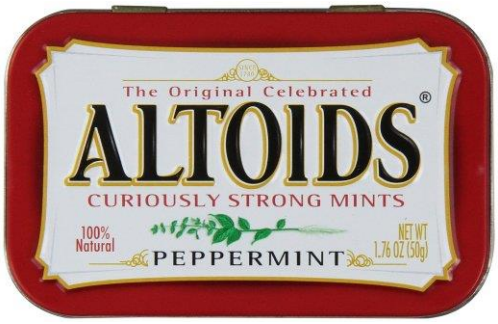
The reed case should have room for at least 3 bassoon reeds and should NOT be airtight. Avoid reed cases with mandrels when possible—they do not keep the reed secure, and the reeds are more likely to break. A good cheap alternative to a bassoon reed case is an Altoids tin lined with a paper towel, preferably with a few ventilation holes added to the lid via hammer and nail. Altoids tins are stronger than similarly shaped tins and are large enough to hold multiple bassoon reeds but small enough that the reeds won't be broken if the case is dropped or shaken.

Good: ventilation holes!

Bad: I don't like this kind of mandrel.

Good: Ventilation holes!

Good: This type of mandrel works well!



Selecting a Reed: Storebought, Plastic, and Handmade

-Storebought reeds often require more air than handmade and plastic reeds, but last longer than most handmade reeds and are cheaper than plastic reeds. I find that beginning bassoonists tend to overblow at first; I will sometimes encourage my beginners to play on storebought reeds until they have more sophisticated breath control. Storebought reeds have two main downfalls: they are sometimes flat and sometimes do not fit on the bocal of the bassoon (see Troubleshooting). **If purchasing storebought reeds, please purchase the medium or medium-hard options if at all possible. Medium soft is the third best option.** Assuming the student knows how to take care of reeds, a storebought reed will last for 3-6 months of playing.

-Legiere makes a good (but expensive!) plastic bassoon reed that has been used by many high school musicians. If you don't have access to a private lesson teacher who can adjust reeds, this may be a good option for your program. A student who practices a lot can expect a Legiere reed to last for about a year before it starts to break down.

-A good handmade reed is a valuable thing, and will give an advanced student far greater control over their sound quality, note response, and intonation. If you have the option, handmade reeds from a reputable source often give you the best results.

HOWEVER: Technically, all bassoon reeds (except plastic ones) are handmade. Anyone can start a reedmaking business, regardless of level of expertise or product quality; it is best to buy reeds from sources you know! Ideally, your program works with a bassoon teacher who is proficient at making and adjusting reeds. In this case, the bassoonist will provide or recommend the handmade reed source. A handmade reed can be expected to last for roughly a month of regular playing. If you are working with a private lesson teacher, please defer to their reed preferences.

Special Note: Even among professional bassoonists, there is a wide variety of reed type preferences. It is not unusual for two bassoonists to play on reeds that are very different from each other. If transitioning to a new teacher, it is likely that the reeds of the new teacher will not be the same as the previous teacher.

6) Contrabassoon: An Introduction

In the proper context, contrabassoon can add a completely unique and exciting flavor to a wind ensemble or band. There is nothing else that sounds like this instrument, and students and colleagues alike are often impressed by the "wow" factor of a contrabassoon playing in the lowest register. If you are considering adding contrabassoon to your program, here are some factors to consider:

Fox contrabassoons are the standard for U. S. band and orchestra programs. Other popular brands are produced by Püchner, Moosman, and Mollenhauer. Amati also produces a contrabassoon model I have seen in several school systems. What you pay for with the more expensive models is projection of sound. In my opinion, if you're going to shell out the cash for a contrabassoon, you may as well buy one that people can hear.

The fingering chart for contrabassoon is similar but not identical to the fingering chart for bassoon. The reeds are also similar but larger and often last much longer than the average bassoon reed.

All the faults of bassoon are amplified in the contrabassoon: pitch is less stable and more variable from pitch to pitch, fingering charts are weirder, and the instrument is more awkward to hold and more expensive to repair. For all these reasons, I recommend withholding contrabassoon until high school.

Some educators believe that only the best students should be allowed to play contrabassoon. I disagree with this idea. The ideal contrabassoonist is a responsible student who is able to work with a tuner and is excited to play the contrabassoon. Because the instrument is large and awkward, students run the risk of hurting their arms and hands if they overpractice. The strength of the instrument comes from its unique timbre, not from the ability to play virtuosic sections—extremely technical passages should be taken with a grain of salt.

7) Bassoon Repairs

Common Easy-to-fix problems

-The most common instrument repair issue is the loss of the whisper key pad. A whisper key pad can be easily and quickly replaced; I would recommend keeping spares on hand at all times (ordered through either the instrument manufacturer or a general source such as Woodwind Brasswind). If you have any woodwind repair experience, the procedure for replacing the pad will be similar to other repair work you have done. Loosen the old pad by heating the pad seat (holding the heat source PARALLEL to the back of the key), heat glue or shellac (hot glue sticks are easier to use), apply glue to the back of the new key pad, and place in the seat. If this procedure makes you nervous, keep the broken pad in place with tape until the instrument can be sent in.
NOTE: this only applies to the whisper key pad. Don't try to replace other pads on your own!

-Another easily remedied issue is the jostling of a spring so that it is on the wrong side of the key; this can be remedied with a crochet hook or spring hook (available through many instrument suppliers, including Forrest Music and Midwest Musical Imports).

Send the instrument in if:

-Leaking pads, missing pads (other than the whisper key pad), and weak or missing springs should be addressed by an instrument repairman, or at least someone with some instrument repair training.

Beginning Bassoon: Troubleshooting

1) **The bassoon "type":**

Because bassoon sections are small and the instrument is complicated, it is important to select students who are independent, stubborn, problem-solvers. Because the bassoon is one of the quieter instruments, avoid students who need to be the center of attention. Nerds are welcome! In general, please avoid placing students with learning disabilities (ADHD, dyslexia) on the instrument—it is already difficult enough! A dyslexic/ADHD student may be placed on bassoon only if he/she matches the following criteria: 1) Already receives good grades in school 2) is committed to private lessons throughout entire involvement in band 3) has supportive parents.

2) The importance of private lessons!

Bassoonists require a certain amount of moral support to be successful in band. If at all possible, bassoonists should be in private lessons, preferably taught by a bassoonist. If you have a good student who cannot pay for lessons, please consider scholarshipping the student. A strong bassoonist will make your band a stronger organization and will add an element of sophistication envied by your peers!

3) Popular bassoon methods:

Essential Elements: The latest edition of this book includes a respectable fingering chart. This is a good beginning method book for the bassoonist.

The Weissenborn Method for Bassoon: This is the most popular method book among the private lesson teachers I know. This book was originally published in 1889 and contains a wealth of exercises to help a bassoonist develop both excellent technique and a warm, dark, controlled sound. The exercises in the book are fairly advanced for a beginner—eighth notes and 6/8 time are both featured in the first lesson! Therefore, I recommend that students begin to work out of the Weissenborn AFTER they have completed a more common band method. If possible, students should learn the Weissenborn method in the context of private lessons.

The Rubank Method for Bassoon: This is a more band-oriented book which focuses on rhythms and time signatures common to band music. I recommend the use of this book for students who struggle with learning their band music.

Sally Bohls and Jennifer Auerbach: Double Reed Classroom Method Book: This is a relatively new book; it is designed to be used as a supplement or replacement for oboe and bassoon beginning methods. I have also seen band directors use the book as a reference. The book does a good job of introducing fingerings in a way that is both very consistent and not intimidating. The main trouble I have run into is that the binding starts to fall apart after a few months of use.

Milde Concert Studies: This is a method book for the advanced student. The Weissenborn 50 Studies (often included in the same book as the Weissenborn Method) and the Milde Concert Studies are the two main sources of All-Region High School etudes in Texas.

Ferling Etudes: Adapted from the Ferling studies for oboe/saxophone, these studies are sometimes used outside of Texas for All-Region etudes.

4) Embouchure:

Many methods will tell you that the bassoonist's lips should be folded over the teeth. This is an oversimplification. Lips should be slightly puckered in front of the teeth, the way that they are when you are using a small straw. I often tell my students to put their mouth on the bocal (without the reed) and pretend that they are using a straw at the cafeteria; this is correct bassoon embouchure. Once they have modeled the straw embouchure, move them immediately to the bassoon reed.

5) Pitch:

Pitch is controlled through a combination of air support and embouchure pressure. Pitch should NOT be controlled through changing the bocal, moving joints in or out, or moving the bocal in or out of the wing joint. Listening to and adjusting pitch are skills that should be actively cultivated from very early on in the learning process; a student should be able to match pitch within 20 cents after 2-3 weeks of playing (the first two weeks, you are just looking for a reliable sound).

A very effective way to check the air-embouchure balance is to have your student crow the reed only (they are playing the reed exactly as they would if they were playing the bassoon). The reed should be inserted into the mouth so that 75% or less of the reed is outside the mouth. The reed should NOT be inserted into the mouth all the way to the first wire. If the air-embouchure balance is correct, the student will crow concert E-flat. If the bocal and reed are played alone (NOT in the bassoon), the reed should crow concert C.

Tuners: Many tuners do not work well with bassoons. If the tuner says the note is a different note from the one being played, it is tuning a harmonic and is not to be trusted. Korg makes tuners that work well with bassoons. If using a tuner clip, attach to the bocal or bell of the bassoon. Tonal Energy is a tuning app that also works with long tones, but I find that physical tuners work better.

6) Vibrato

Because both vibrato and pitch are controlled by air support, I do not recommend teaching vibrato to bassoonists until they are able to control their pitch and consistently play in tune with a good sound. **Bassoonists do NOT play with jaw vibrato!!!!!** We play with diaphragm-based vibrato similar to what a flute or oboe player might produce. I STRONGLY recommend vibrato exercises are conducted while a Korg tuner is being used.

7) Fingering charts

Fingering patterns are extremely complicated on the bassoon. Many method books include fingering charts that are NOT favored by bassoonists—these charts were often

compiled by non-specialists, and mistakes are often passed down through subsequent books. **The most common mistakes regard E-flat 2 (in the staff) and A2-D3 (at the top and above the staff).** The preferred fingerings for these notes (reflected in the fingering chart in this handout), are slightly more complicated but much more stable and reliable. **It is NOT more efficient to teach your student a poor fingering that you will have to change later.**

8) Flicking

You may have noticed that there are several keys to be played with the left hand thumb. The uppermost thumb keys located on the wing joint (see bassoon diagram, p. 5) are referred to as the "flicking" or "venting" keys. The purpose of these keys is to stabilize both pitch and response of several notes in the mid-upper bassoon range (A3-D3, A4-E4). There are two common interpretations of the proper use of these keys. Many students prefer to "flick," or lightly tap the key at the very beginning of the note. In this case, the only purpose of the key is to ensure that the note speaks correctly. Flicking is used at the beginning of each note that is NOT approached by step under a slur (all articulated notes are flicked).

My preferred method of pedagogy is to hold the appropriate thumb key down for the entire length of the note, and to use the appropriate thumb key EACH TIME the note occurs regardless of context. I find that this is the simplest pedagogical approach, and also serves to stabilize the note throughout its duration (tapping a thumb key often effects a note's pitch). This second approach is often referred to as "venting," but is also sometimes called "flicking."

Many band directors consider flicking to be unnecessary. This based on the fact that some students seem to be able to play notes cleanly without using any of the left hand thumb keys. Students also quickly realize that they seem to be able to "get away" with not flicking, and quickly drop the habit if it is not reinforced. The notes are most likely to crack when they are not supported with optimal air. If we think about this, we quickly realize that students often do not support properly when they are nervous (read: in a high-pressure PERFORMANCE situation). Use of the left-hand thumb keys must therefore be reinforced often and early as a habit rather than a novelty—if a student does not flick regularly, they will not magically start to add thumb keys when they are already nervous.

9) Is your student: flat? Possible causes:

a) The reed is flat. Clip the tip (1/8 inch or less). It is very important that the tip is clipped in an absolutely straight line. You may use a number of methods:

1) a reed knife or razor blade cuts the reed while it is laying flat on a cutting block.
2) A set of specialized wire clippers.
3) a specialized reed tip clipper (expensive but convenient!)

b) The reed is cracked (corners can be cracked, the center of the reed cannot). Look for a dark line running through the center of the reed. Throw reed away if a crack is found toward the front and center.
c) The reed is very old and/or moldy.
d) The fingering is incorrect.
e) Not enough air.
f) Embouchure is too loose.
g) Wrong bocal.

10) Is your student: sharp? Possible causes:

a) Incorrect fingering.
b) Embouchure is too tight. (especially if the student is nervous!!!)
c) Too much air.
d) Unstable reed (don't ever assume this unless all other options have been eliminated)

e) The student is hearing the note sharp—LONG TONES!!! (*this is common!)
f) The reed may be too closed—CAREFULLY squeeze the first wire side-to-side with a pair of needle-nose pliers (expect the reed to look almost exactly the same, you are not looking for a large difference).

11) Does the note sound growly?

a) This is called cracking or growling. It is almost always the result of imprecise or incomplete fingering patterns. If the note uses flick keys, check to make sure they are employed. If the note uses halfhole, try adjusting the amount that the finger covers the hole. Cracking can sometimes be remedied by tightening the embouchure slightly and using more air.

12) Is there a popping or clicking noise when the student is playing?

a) This is usually the result of water in either the bocal or toneholes. Water can be sucked back out through the bocal/reed (don't blow it down into the bassoon! That causes other problems later!) or the bocal can be taken off and blown out (like a snorkel—be careful where you point it!). If water is in the tone holes, it can usually be blown out (raise the tone hole to your mouth, blow through it with a short, aggressive burst of air). In some cases, a key may need to be removed to allow access to the tone hole.

13) Is your student complaining that the reed is too hard to play?

You may close the reed slightly either by applying gentle pressure with your fingers or by CAREFULLY squeezing the first wire top-to-bottom with a pair of needle nose pliers (see comment 8f). Otherwise, the student will learn to play the reed after a brief adjustment period. They just need to use more air and embouchure pressure.

NOTE: If the student has just changed from a very old reed to a newer reed, they will think the new reed is too hard. Reeds weaken with use, so a very old reed takes almost no effort to play. The adjustment to a newer reed can be a rude but necessary awakening!

14) Is your student sick?

Encourage them to soak their reeds in mouthwash (50% mouthwash, 50% water) so they don't catch their cold a second time. Also, they may be playing very out of tune—

this is because they are physically uncomfortable and cannot hear well. They should improve when they feel better.

15) **Does the reed not fit on the bocal?**

The only way to remedy this situation is to ream the reed using a reamer. It is important to have a reamer that is exactly the same shape as the bocal—cheap reamers will drill a hole that is not the same size as the bocal! The best "cheap" reamer is the Fox reamer. More expensive but easier to use models are produced by Popkin and Rieger. Diamond reamers are also an available and acceptable (but equally expensive) option from Rieger.