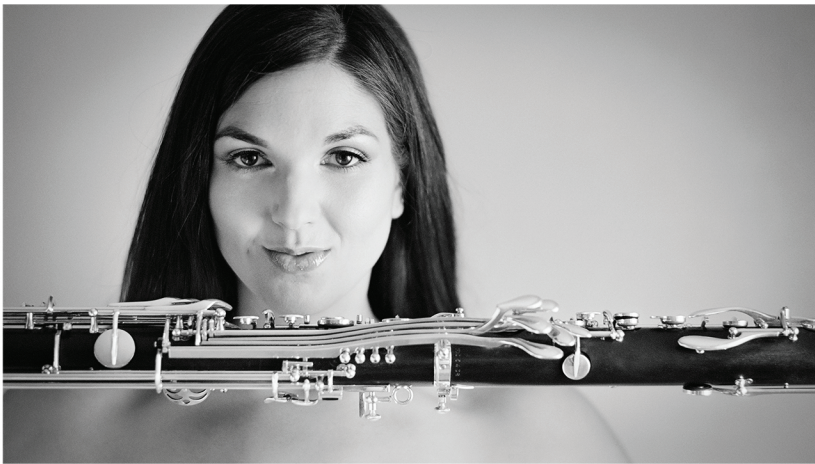


CLARINET TECHNIQUE TROUBLESHOOTING & EQUIPMENT GUIDE

BY

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Intonation	
Tune open G between barrel and upper joint and clarion G between the upper and lower joints	Pitch tends to go flat when loud and sharp when soft
Tuning rings should be used if pulling out more than 1 mm is needed to correct pitch	Resonance fingerings should be used to help throat tone pitch and sound quality
Embouchure	
Lower lip should cover bottom teeth	Upper lip should be firm, pressing downward on the mouthpiece and inward against the top teeth
Top teeth on top of mouthpiece	Cheeks stay in against teeth—no puffing (some exceptions in advanced playing techniques)
Chin should be flat, pointing downward	RH thumb pushes mouthpiece into top teeth
Corners of lips should be inward—think of tightening a drawstring. No air should leak from corners.	Clarinet is angled around 30 degrees from body. When sitting, this will be around the knees.
A proper embouchure will produce a concert F# on the mouthpiece and barrel.	NO JAW MOVEMENT
Articulation	
Tip of tongue to tip of reed	Interruption method—pitch should go <i>up</i> when tongue is on reed
Limit tongue motion—let the tip do the work, not the back	Minimal tongue motion required in upper registers
Air pressure remains constant	NO JAW MOVEMENT
No embouchure movement during articulation	
Voicing	
Position of tongue <i>arch</i> varies by range:	One shape will NOT work for entire range—tongue shape is <i>dynamic</i> across the range, especially above E5
High and back for first register (think “a” as in bat)	Tongue <i>tip</i> must remain near reed tip, NOT on lip or bottom teeth
Shifts forward and slightly down into altissimo register (think “ee” as in beet)	In addition to note production, tongue shape is essential for glissing and other effects
Shifts back above altissimo G6 (think “uu” as in root)	Serves an acoustic function; has nothing to do with “air speed”
Hand Position	
Hands should be positioned on clarinet as they are when forming a natural, relaxed “C” shape.	Instrument is supported by RH thumb—all other fingers should be free and mobile.
Thumbrest should contact RH thumb between thumbnail and first knuckle. This may vary by hand size/shape.	Neck straps can be very useful to minimize strain on RH thumb. Use elastic variety.
LH thumb should point between the 1:00 and 2:00 position on the thumb tube, depending on hand size/shape.	Fingers <i>press and release</i> the keys. Avoid squeezing and smacking.
LH index finger <i>rolls</i> up to the A-key. The LH may be angled slightly upward to decrease distance between index finger and A- and G#-keys.	RHD—Right Hand Down. Many holes can be covered when playing throat tones. Suggestions included in technique packet. They will help pitch and facilitate register changes.
Air Support	
<i>Quantity</i> of air defines how loud we play	Breathe “low” to maximize air intake
Think <i>cold, laser beam</i> air	Avoid micromanaging air pressure
Must maintain high pressure at all times—imagine playing middle B at all times	Airflow should be <i>powerful</i> (think “unstoppable”) at all dynamics.
Warmup	
Develop daily warmup addressing <i>all</i> of the above	Always start slow enough to perfectly address all elements
Must practice regularly	Always use a metronome and a tuner and/or drone
Bass Clarinet Tips	
The embouchure is larger and rounder than the Bb clarinet embouchure. Say “O” for jaw position (especially low notes).	Most young clarinetists take in too little mouthpiece when learning bass clarinet.
The embouchure grip for bass clarinet is less firm, the lower lip is more relaxed. Say “Foo.”	Lean the instrument forward slightly, or buy a bass clarinet neck that allows an angle to match Bb clarinet angle (30-45 degrees from body).
Support the mouthpiece and reed more from the corners of the embouchure than the jaw.	For a clearer sound and flexibility, most bass clarinetists play on a ½-strength softer reed than for Bb clarinet

Symptom	Problem	Solution
Sound & Intonation		
Unfocused sound	Bottom lip not firm (bunched chin), embouchure too relaxed, reed too hard, low tongue	Flatten chin, press upper lip on top of mouthpiece, use softer reed, see Voicing below
Small, thin sound	Embouchure too tight, too little mouthpiece in mouth, too much bottom lip in mouth, reed too soft, clarinet too close to body, reed too low	Check for proper embouchure formation, more mouthpiece in mouth, try harder reeds, adjust angle (30°), adjust reed to align with mouthpiece tip.
Wild sound	Too much mouthpiece in mouth, not enough bottom lip in mouth, clarinet too far from body, loose embouchure	Less mouthpiece in mouth, check for proper embouchure formation, adjust angle (~30°)
Very flat	Reed too soft, embouchure too loose, tongue in incorrect position	Use harder reeds, check for proper embouchure formation, see Voicing below
Very sharp	Reed too hard, embouchure too firm	Use softer reeds, check for proper embouchure formation
Articulation		
“Dirty” articulation	Too much tongue touching the reed, tongue touching too low on reed, reed too high	Tip-to-tip articulation style, regular practice, adjust reed to align with mouthpiece tip.
Cannot articulate above staff	Too much tongue movement, tongue touching too low on reed	Maintain a more constant tongue shape (think vowels) during articulation, reinforce tip-to-tip tongue-reed contact
Slow articulation	Stopping air, too much tongue movement, not enough practice	Maintain constant air pressure—the tongue stops the reed, not the air, maintain arched tongue shape, regular articulation practice
Subtones, especially above staff	Tongue touching too low on reed, incorrect tongue shape	Tip-to-tip articulation style, address voicing (see below)
Pitch Scooping	embouchure “chewing,” tongue touching too low on reed	Keep embouchure still (use mirror), reinforce tip-to-tip tongue-reed contact
Voicing		
Flat upper register	Tongue arch too far forward	Long tones, voicing exercises (glisses, controlled squeaking, bugle calls), expand range, aim for “ee” tongue position to G6 shifting to “uu” above G6
Squeaking	Embouchure too firm, too much mouthpiece in mouth, tongue arch too far back	Check for proper embouchure formation, Long tones, voicing exercises (glisses, controlled squeaking, bugle calls), expand range, aim for “ee” tongue position
Subtones	Tongue in wrong position, embouchure too loose,	Tongue arch should be high (as in a hiss), push up with right thumb, more mouthpiece in the mouth
Hand Position		
Limited technique	Flat fingers	Fingers should form a natural “C” position. Drag fingers across table without allowing knuckles to collapse.
Limited technique	Incorrect RH thumb placement	Thumbrest should contact RH thumb between thumbnail and joint. Exact placement will vary by hand size.
Limited technique	Anchoring RH index finger on RH Eb/Bb key	Place double-sided tape on key to sensitize finger. Check hand angle and thumb position on thumbrest.
Limited technique	Excess finger motion	Practice in front of mirror to minimize motion—slow F and F# scales.
Difficulty crossing break	Fingers too far from keys/holes, excess motion, lifting LH index finger	RHD – Right Hand Down: encourage “resonance” fingerings for throat tones (G-Bb4), LH index finger should roll,

Clarinet Equipment Recommendations

Clarinets

Beginner

Beginner clarinets are usually constructed of plastic or resin for durability and cost. They are typically molded rather than machined and include nickel-plated keys. In most situations, a student's first instrument should be made of a synthetic material since they are both affordable and durable. While wooden models are available at prices cheaper than professional instruments, they will likely be more expensive than a synthetic instrument. If a student decides to switch to a different instrument early in their playing career, it's a better investment to prioritize affordability. Buffet, Selmer, and Yamaha make excellent student instruments. Used student instruments are widely available, often at bargain prices. However, be aware that used instruments may require substantial maintenance and/or repair to be playable. Prices range from \$250-500. Used instruments can be found for under \$100, but may require substantial work.

Intermediate

Most major manufacturers offer an intermediate, or "step-up," instrument option. These instruments are typically constructed of grenadilla wood and have silver-plated keys, although some have nickel-plated keys. Intermediate instruments often have a reamed bore, as opposed to molded, undercut tone holes for improved pitch and evenness, and blued steel needle springs. Price tends to be approximately \$1000-2000. Intermediate instruments are recommended for advancing students on a budget or students who are not interested in pursuing a degree in music. Note that wooden instruments need to be broken-in, meaning they have to be gradually acclimated to being played. This also applies to older wooden instruments that have not been played for a long time. In our arid desert climate, we recommend using a case humidifier, such as the Humistat, for wooden instruments. Any humidifier that you insert into the bore is NOT recommended.

Professional

Professional instruments are generally made of premium materials, including select wood (grenadilla, cocobolo, or Brazilian or Honduran rosewood), silver-plated keys, and high-end pad options. They may also have additional keywork, including a left-hand Ab/Eb key. Pro instruments tend to have optimal pitch, evenness from note to note, and workmanship. Manufacturers may offer optional keywork, including automatic low F compensation, an automatic throat Bb mechanism, an articulated C#/G# key, and plating options. Prices range from approximately \$3500 to over \$8000. Professional instruments are recommended for serious students who are interested in playing at the highest level. University music programs typically require professional instruments, so students interested in upgrading from student models should consider saving for a pro instrument. It should be noted, however, that professional instruments will require routine maintenance to operate optimally.

Auxiliary Clarinets

Your clarinetists will very likely start on a Bb soprano clarinet; however, many other types of clarinets are used for solo, chamber, and symphonic music. Most band literature will include a bass clarinet part. Bass clarinets are available with ranges to low Eb or C. Low Eb instruments are available from beginner to professional models while low C basses tend to be professional only, although this is changing with new models from Kessler and Ridenour. Much of the standard band literature will also include an Eb clarinet part. Eb clarinets are generally available as professional or step-up models; however, it is worth spending the extra money on a professional instrument—pitch, sound, and response will be much better. If your program includes full orchestra programming, some repertoire may require an A clarinet. Most high school students will not own an A clarinet, so it is advisable for the school to own two—one each for the first and second clarinet parts. Other auxiliary clarinets often found in band literature include Eb alto, Eb contra-alto, and Bb contra-bass

clarinet. Generally speaking, it is worth purchasing the highest level instrument that your budget will allow. The pay off in pitch, sound, and reliability will be worth it!

Note: While it may be appealing to have dedicated students playing auxiliary instruments, rotating personnel is often better for their musical development, particularly with the low clarinets. Most college music programs require an audition on Bb soprano clarinet, greatly limiting post-secondary education options for your most aspiring players who have only played bass clarinet, for example.

Mouthpieces

A high-quality mouthpiece can make a *huge* difference in the sound of any instrument, and should therefore be a student's first major equipment upgrade. Likewise, a bad mouthpiece can make the best of instruments sound terrible. Mouthpieces are a very personal choice, and MANY options are available. Typically the mouthpiece that is included with a new instrument is less than optimal. This is not always the case, but generally, your students should find another option. Clarinet mouthpieces are constructed of various materials. Student models and mouthpieces included with many instruments (including some professional models) are made from plastic. Professional mass-produced and handmade mouthpieces are usually made from hard rubber—this is the most common material. Other materials are used as well, including wood, metal, and glass. Wood mouthpieces tend to warp; metal mouthpieces are very heavy and are generally faced for jazz; and glass mouthpieces are very fragile.

Mouthpieces have a tremendous effect on pitch, sound, articulation, and playing comfort. They are generally categorized by two (of many) important dimensions: the tip opening (how far the reed tip rests from the mouthpiece tip) and the facing length (defined by where the reed first makes contact with the mouthpiece). These dimensions also dictate what strength reed will be appropriate. Large tip openings and short facings will need a softer reed while close tips and long facings will require a harder reed. This is a very important factor when recommending reed strength! A strength 3 reed might be perfect for a student playing a Vandoren B40 (open/medium) mouthpiece, but that same reed on a Vandoren M13 (closed/long) would be much too soft. One size does not fit all!

Vandoren is probably the largest mass producer of clarinet mouthpieces. Prices range from around \$90-\$140 for professional models. D'Addario Woodwinds makes fine clarinet mouthpieces as well within the same price range. While handmade mouthpieces are plentiful, local availability is often limited, so it is easier to recommend mass-produced models. The Vandoren B45 is an often-recommended mouthpiece, but it should be noted that these have a very open tip and are pitched at A442. Note that all Vandoren mouthpieces are A442 EXCEPT their Series 13 models, which are A440. If your group tends to play sharp, the Series 13 might be too low. The M30 Series 13 is an excellent option—it has a medium tip with a long facing with excellent pitch characteristics.

Since the mouthpiece has such a tremendous impact on tone, pitch, projection, and comfort, it should be one of the first upgrades. A student instrument with a good mouthpiece will likely sound better than a professional clarinet with a mediocre mouthpiece!

Barrels and Bells

Aftermarket barrels and bells are available in many different materials and styles, and prices range from under \$100 for a barrel to over \$600 for a bell. While these items can have a positive effect on sound and pitch, upgrading the mouthpiece and instrument should be prioritized.

Ligatures

The ligature simply affixes the reed to the mouthpiece. However, because it touches the part of the instrument that is vibrating—the reed—it can affect the sound. Ligatures are made from various materials, including metal, cloth, leather, plastic, or cord. For young players, the more durable options are favorable, including cloth, cord, and leather. These materials can be dropped or stepped on without destroying them. Metal ligatures, on the other hand, are fairly fragile and expensive. They are often plated with gold or silver and constructed using very thin metal. They can deform if dropped or break if over-tightened. Rovner and BG make excellent leather-like material ligatures that are incredibly durable, have only a single screw, and are very affordable (under \$30). I am particularly fond of Silverstein Works ligatures, which use a cord with a single screw tightening system.

Reeds

Again, MANY reed options are available. The big makers include Vandoren and D'Addario. I generally recommend that students first try the offerings from these two manufacturers, using a reed strength that is appropriate for their particular mouthpiece. We use Vandoren reeds. Reeds are not an area on which to skimp! High quality reeds will sound better and last longer. While Vandoren and D'Addario offer various styles of reeds, the strength is the most important factor to get right. Again, the optimal strength will be determined by the student's mouthpiece and the reed make/model—not all strengths are the same across manufacturers or styles! Most mass-manufacturers, including Vandoren and D'Addario, have reed strength recommendations for their mouthpiece models available on their respective websites. Avoid blanket strength recommendations based on year in school or level of playing—the mouthpiece dictates what will be optimal. Students should have a minimum of four reeds with them at any given time. Synthetic reeds are becoming more and more popular, with excellent products from Légère and Silverstein Works, among others. These tend to be more durable than cane reeds, last longer, and have excellent response. They are an excellent investment for your auxiliary instruments since they are so durable and can be sanitized.

Other Items

Every clarinetist needs a few items to help clean and protect their setup.

A high-quality **swab** is essential! While we generally prefer microfiber swabs, we recommend silk swabs for younger students. Microfiber is more absorbent, but silk is less prone to getting stuck in the bore. The clarinet should be swabbed after every use or if water is accumulating in tone holes, and tenon sockets should be dried completely. Good swabs are generally under \$20. Swabs should be neatly folded when stored in the case, rather than wadded up and crammed into the case. Folding minimizes the chances of it getting stuck on the register tube of the upper joint. If a student's swab does get stuck, take the instrument to a reputable repair technician. Do not stick anything in the bore in an effort to remove it! Always make sure a swab is completely unfolded before pulling it through any part of the clarinet—any swab can get stuck if it's wadded up!

ALL clarinetists need a **mouthpiece cap** (and use it)! Many ligatures (including Rovner, Silverstein, and Vandoren) include a mouthpiece cap. Make sure they are using them when not playing—it'll protect the reed and the fragile mouthpiece tip while keeping the reed from drying out.

We highly recommend using a **mouthpiece patch** on the top of the mouthpiece. These cushions provide a soft barrier between the mouthpiece and top teeth, maximizing comfort and minimizing movement against the teeth. They also protect the mouthpiece from indentions created by the teeth (ABSOLUTELY necessary when trying mouthpieces). Mouthpiece patches are available in thin or thick sizes—this is a personal preference.

A tube of **cork grease** will help keep instrument assembly smooth and easy, minimizing the chance of bending keys from squeezing the mechanism. Cork grease should be used sparingly. Apply a small amount to each cork and rub it gently into the cork with the fingers. If done at the end of the day, the cork will absorb some of the grease, providing long-lasting smooth assembly. This also minimizes the “squeegee effect,” which results in globs of excess grease accumulating on the tenons.

Every clarinetist needs a **reed case**. The plastic or cardboard sleeves that come with reeds will not suffice. Vandoren makes excellent reed cases that hold 4 to 8 reeds. Good reed cases will help the reeds dry evenly, protect them from damage, and provide some organization. Glass reed cases are not recommended, especially for young students.

We both use a **neck strap** and recommend them to our students. They take much of the weight off of the right hand thumb. Elastic models are preferred.

A soft **cleaning cloth** is useful for keeping keys clean, which can minimize tarnishing and corrosion. It can also help stabilize the clarinet in the case. Some cases allow the instrument to flop around when closed. This movement can wreak havoc on the mechanism.

Pad dryer. While swabs are essential for removing condensed water from the bore, some water will find its way into a tone hole, which can affect pitch, cause squeaks and/or gargling sounds, and cause pads to stick. Water can often be blown out of a tone hole with a sharp blast of air, but sometimes an absorbent material is necessary to wick the water from the hole and dry the pad. Traditionally, un-gummed cigarette paper has been used to remove water. BG makes a microfiber pad dryer that is reusable and works quite well. Yamaha makes a special disposable paper for the same purpose.

An **instrument stand** can help prevent costly accidents, such as instruments rolling off a chair or being stepped on. Many models are available, from flimsy plastic folding stands to heavy steel stationary stands. K&M and Hercules make excellent portable stands that should fit in most clarinet cases.

Things your students DO NOT need:

Mouthpiece brush. These brushes often have metal wire as the core, which can destroy a mouthpiece.

Key oil. Properly oiling the keys is something that should be handled by an experienced technician since it requires removing and replacing keys. Many of the products labeled “key oil” are too thin and very messy. Residual oil can easily destroy pads and key corks and attract dust.

Bore oil. This is a debated topic; however, oiling the body and bore of a wooden clarinet should be handled by an experienced technician to avoid doing more damage than good.

Pad savers. These are long wire-core brushes that are stored in the bore. Since they stay in the bore, moisture is not removed, which can result in swollen pads, mold, and cracked wood. Do not use these.

Example Setups (price ranges are approximate)

Beginner Soprano Clarinet

Clarinet: Conn-Selmer Prelude or Buffet Premium
Mouthpiece: Clark W. Fobes Debut, Yamaha 4C, Behn Overture
Ligature: Rovner Dark, BG Revelation
Reeds: Vandoren Traditional or equivalent
Total Cost: \$500-\$700

Beginner Bass Clarinet

Bass Clarinet: Selmer 1430LP Bb Bass Clarinet
Mouthpiece: Hite Bass clarinet mouthpiece, Yamaha 4C bass clarinet mouthpiece
Ligature: Silverstein Prelude, Rovner
Reeds: Vandoren Traditional or equivalent
Total Cost: \$2200-\$3000

Intermediate Clarinet

Clarinet: Selmer Paris Prologue, Buffet Crampon E12F
Mouthpiece: Vandoren M30 Series 13
Ligature: BG Silver Revelation, Silverstein Prelude
Reeds: Vandoren Traditional or equivalent
Total Cost: \$2100-\$2500

Professional Clarinet

Clarinet: Buffet Crampon (R13, RC, Prestige, Festival, Vintage, Tosca, Tradition, Légende, Divine), Selmer Paris (Privilège, Présence, Signature, Récital), Backun (Q Series, Lumière, MoBa, CG Carbon), Yamaha (YCL-CSG, YCL-CSVR, YCL-SEV), and others
Mouthpiece: Backun, Behn, D'Addario, Fobes, Garrett, Hawkins, Lomax, Playnick, Pyne, Selmer Paris, Vandoren, Wodkowski, and many others
Ligature: Many options used professionally
Reeds: Many options used professionally
Total Cost: \$3000+

Professional Bass Clarinet

Bass Clarinet: Selmer Privilege Low C Model 67, Buffet Crampon 1193 Prestige Low C, pro low Eb models available as well
Mouthpiece: Fobes, Garrett, Grabner, Pomerico, Selmer Paris, Vandoren, and many others
Ligature: Many options used professionally
Reeds: Many options used professionally
Total Cost: \$13,000+

What Do We Play?

Clarinet: Selmer Paris Privilège (\$6000)
Mouthpiece: Vandoren BD7 (\$150)
Barrel: Paulus & Schuler (\$270)
Ligature: Silverstein CRYO4 (\$210)
Reeds: Vandoren V12 strength 3.5 (\$30/box of 10)
Total Cost: \$6660

Bass Clarinet: Selmer Paris Privilège Low C Model 67 (\$14,600)
Mouthpiece: Selmer Paris Concept Mouthpiece (\$350)
Ligature: Maestro Silverstein Ligature (\$1200)
Reeds: Vandoren Traditional strength 3 (\$21)
Total Cost: \$16,171