

Amateur Music Network Workshop Notes

Basics I

I. Instrument Size and Setup

Far too often I encounter students who have an ill-fitting or badly set-up instrument that causes strain. The bass is a large-scale instrument with many different shapes and sizes, and everyone's physiology is different, so there isn't a one-size-fits-all. However, everyone should be able to find an instrument that is comfortable to play and well set-up. Below are some tips for determining if an instrument is appropriate for you, and some general guidelines regarding set-up.

1. Size, Shape, and String Length

- With a healthy posture devoid of excessive reaching or twisting, you should be able to reach the full range of the instrument and have access to all sounding points on all strings.
- In playing position, you should be able to comfortably reach both hands around the instrument and touch near the bridge.
- The string length should be an appropriate length for your hand physiology. You should be able to comfortably reach with 1st to 4th finger a whole-step in 1st position, a minor-3rd at the neck block, and with the thumb on the first octave harmonic, reach to a 5th with the 3rd finger.

2. Set-up

- With modern string technology, there is little to no reason for using a high string action. Having strings too high can cause strain and negatively impact technical facility. High strings can also mute the instrument due to excessive tension. However, strings that are too low risk buzzing or making the tone too weak. I find the height of the G-string should be about 4-6mm off the fingerboard at its end (near the D harmonic), and each successive string should increase in height off the fingerboard by approximately 1mm.
- The strings should be spaced approximately 1 inch apart at the bridge, center to center.
- If the radius of the bridge curve is too long (i.e. more "flat"), isolating individual strings with the bow will be problematic. If the radius is shorter (i.e. sharper curve), the string crossings become more labored and may create clearance issues when bowing on the outer strings.
- The relationship between the shape of the bridge and the shape of the fingerboard should be harmonious so that some strings do not feel too high or too low relative to the others.
- A good fingerboard dressing (shaping) is imperative. If your strings are at a reasonable height, but some notes are buzzing, or some areas of the fingerboard are excessively difficult to play, it may be the result of a fingerboard that needs to be properly dressed.
- The over-stand of the neck should enable easy access to the upper positions. If your instrument has large shoulders and a low over-stand, playing in the upper register will be highly encumbered.

II. Posture and Instrument Positioning

1. Posture

- Whether standing or sitting, your body should feel naturally centered, balanced, and grounded, yet actively and athletically engaged. This means that when you are in a neutral, balanced playing position, you are comfortably free of tension, devoid of any excessive leaning or twisting, and are ready to move.

- Be actively engaged over the instrument. Passively sitting back on the stool or on your heels makes things feel dead. Be like an athlete ready to get up and go!
- Your spine should be naturally curved, not slouching.
- Hinge in the hips to change sounding points with the bow, and to make large changes in the position of the left arm. Avoid slouching as a component of your technique.
- Your shoulders should be relaxed, symmetrical, and parallel to the floor.
- Your head should be centered on a soft neck, and not twisted, tilted, protruding forward or have any clenching in the jaw.
- Your arms should feel fluid and rounded around the instrument as you engage it, and never stiff, straight, tight, or locked.
- All of your joints should be flexible and supple, like springs. Tension breeds tension, so always look to release it whenever it manifests (and it will!).
- Be free to move! Being still and statuesque while playing is restrictive and unnatural.

2. Instrument Positioning (standing or sitting)

Height

- The nut should align somewhere between your eyebrow and the top of your forehead. Higher than that will require raising the arm too high to reach lower positions, which will be fatiguing.
- When placing the bow on the D-string, the bow should naturally lay about halfway between the bridge and fingerboard. If the bass is positioned too low, you will have to reach too much to the bowing lanes, which will promote slouching, inhibit breathing, and risk lower back strain.

Endpin positioning

- The endpin should be positioned left to right and front to back so that as you can remain centered with easy access to all left arm positions and can easily draw the bow parallel to the bridge on all bowing planes and contact points.
- As you shift to the higher positions, check that the fingerboard does not “run away” from you and force your hand outward to the left away from your center, deviating your posture. If so, move the endpin slightly to the right.
- The neck of the bass should be positioned between your neck and shoulder joint so that it does not obstruct shifting to the higher positions. If it does, move the endpin slightly to the left so the scroll comes nearer to your head.
- The more upright the bass is, the more the endpin bears its weight, and the more the bass leans into you, the more your body will bear its weight. Naturally, standing will be more upright and sitting typically more leaned. Everyone will have a slightly different position that feels comfortable, whether standing or sitting. Primarily, the instrument should feel light and balanced, with easy access to all positions and bowing contact points.

Direction of bridge

- As a starting point, the bridge should face at 12:00 with your body facing around 10:00. Your sternum and hips should face the top treble corner of the bridge. This enables easy access to all strings around the curve of the bridge. When playing on the E-string for extended passages, you can open the face of the bass out to the left to gain easier access.
- I do not advocate a cello-like orientation. This typically makes accessing and centering on the G-string problematic, especially for French bow players.

3. Standing

Advantages:

- Is less restrictive and allows more freedom of movement
- Enables greater flexibility in adjusting the instrument while playing
- Is inherently more symmetrical in body positioning
- Has more resonance because of less body contact with the instrument
- Easier to involve the entire body in the actions of playing

Disadvantages:

- Requires more skill in balancing the instrument, especially in the transition area
- Has a propensity for causing tension in the left thumb
- Shifting between the lower and higher positions is more mechanically complicated
- Has less consistency in the interaction between the bow and strings
- The typically more vertical angle means less use of gravity in engaging the strings
- Can be fatiguing standing for extended periods of long performances or rehearsals

Notes on Standing Technique (straight endpin):

- Have feet around hip-width apart, weight evenly distributed, and athletically engaged.
- Lean bass into belt line somewhere between hip bone and centerline.
- “Closed stance”: left foot steps about a half step forward and pointing toward the endpin, bringing left knee to lower corner block.
- “Open stance”: the left foot stays back, more in line with the right, and the left knee stays off the bass. When standing, I often would switch instinctively between the two, but find it is good to get started with the “closed stance” to help learn to balance the bass.
- Sources of support for the bass when playing in the neck positions are the endpin and the hip, with the balance aided by the left knee. In the upper register, the endpin and the shoulder primarily support the instrument.
- You should be able to balance the bass without using your hands—the left thumb should not be needed to hold up the instrument, as that inhibits shifting.
- Hinge at the hips to access the different registers and sound points. When shifting to the upper register, your hips should move back as a counter-balance to your shoulders as they come forward. This action also serves to draw the neck toward your shoulder, which supports the instrument during extended upper register playing.
- The transition area requires extra practice, especially if using thumb positioning. When the neck of the bass is not resting on your shoulder, you may need to allow the instrument to rotate and lean slightly to the right so that it leans into your fingers.
- Accessing the different bowing planes around the curve of the bridge should be done primarily by rotating the shoulders parallel to the floor, as well as slightly engaging the hips as you rotate. Be free to move!

Practice balancing the bass without your hands (keep them ready to catch it, though!)

Practice tracking up and down the G-string over the entire range of the instrument. Hinge at the hips while effortlessly balancing the instrument.

Practice rotating the bow around the bridge to all bowing planes and contact points.

4. Sitting

Advantages:

- Is inherently more stable
- Enables easier access to the entire range of the instrument
- Has greater consistency in the interaction between the bow and the strings
- Allows for a more direct use of gravity when engaging the strings with both arms
- Is less fatiguing for long performances and rehearsals

Disadvantages:

- Movement is more restricted
- Frequent asymmetry problems in the positioning of the legs/hips, and creates propensity for slouching
- Vibrations of the back plate may get muted by the left leg
- Dependency on having a stool that fits your body

Notes on Sitting Technique:

- Choose a stool height that enables good posture and sufficient bowing clearance over the right leg. For most people, a proper stool height will align around the mid-thigh area when standing next to it.
- Your sits bones should sit near to the front of the stool. This enables a more active engagement with the instrument and helps promote a healthy curve in the spine.
- The right foot should sit comfortably on the floor with a slight bend at the knee, providing a good foundation of support. The leg should be devoid of tension and not twisted, locked, tense, or pressed against the instrument in any way.
- Ideally, the left foot should rest on a footrest of some kind. This widens your base of contact with the floor, elevates the knee to support the instrument, and creates a more open 90-degree angle at the knee. Having the left foot on a rung of the stool can work, but it is less supportive, and rarely an optimal height.
- The back edge of the upper bout should comfortably rest along your belt line somewhere between your center and the top of your right leg.
- There should always be space between the back of the bass and the left thigh. The left knee should make contact the bass nearer to the edge where there are less vibrations.
- Have “breathing” clearance between your belly button and the instrument. This enables breathing and encourages hip hinging over slouching.
- When changing positions of the left arm or the bow, the primary mechanism should be hinging in the hips and not slouching in the spine.
- Accessing the different bowing planes around the curve of the bridge should be done primarily by small rotation of the shoulders on the spine, parallel to the floor.
- For the sake of posture and consistency, you should always try to bring your own stool.

Practice tracking up and down the G-string over the entire range of the instrument, hinging at the hips.

Practice rotating the bow around the bridge to all bowing planes and contact points.

II. Bowing Basics:

1. Basic Bowing Motions:

Arm swing exercise:

1. Put bass down and stand with arms at side.
2. Feeling grounded and centered, begin rotating the hips to swing the arms, keeping the arms passive and loose.
3. Notice how interconnected everything is, and how your body can effect movement in the arm.

Bowing curves arm swing exercise:

1. Bend over at the torso with your right arm hanging from your shoulder and your left arm behind your back.
2. Similar to above, start moving your hips to make your arm swing in a counter-clockwise manner, and then reverse directions.
3. Now, stand up into more of a playing position and use your body to aid in swinging your arm more in the vertical plane, simulating a rounded bowing gesture. Practice both clockwise and counterclockwise. Notice the counter-clockwise rotation simulates a down-bow gesture, and clockwise simulates the up-bow gesture.
4. Notice how much the entire body can be involved with the action of bowing.

2. A few notes about the bow:

- The bow is designed to fit the hand, not the other way around.
- Know where the balance point is: balancing the bow on the string is one of the most fundamental aspects of bowing. Since the bow is heavy at the frog and light at the tip, the balance point is usually located around 1/3 the length from the end of the screw.
- Rosin is a means to increase the friction between the hair and the strings. Too much makes you get stuck, and too little won't grab the core. Sometimes you only need a little and sometimes you need a lot; only use as much as you need. For solo and legato playing, you need less, and for rhythmic, articulate orchestral music, you will tend to need more.
- You want to tension the hair so as to be able to feel the string and responsiveness in the stick. If the hair is too loose, you will lose responsiveness, and if it is too tight, the bow will become stiff, jittery, unforgiving, and unable to hug the string. Start from a hair tension that, when placed near the middle of the bow, allows for similar degree of flex in the stick, hair, and string.
- I always store the bow with a very small degree of tension in the hair, not completely slack.

3. Bow Hold

- Take a look at the right hand in its relaxed state, both palm left facing (German) and palm down (French, rotated from the shoulder socket). Notice how the thumb and fingers fall naturally. We want our bow hold to look as close to this as possible.
- Hold your bow out in front of you at the balance point with your left hand around mid-torso. Imagine you have just dipped your hand in water and are letting it drip off. With your hand "dripping wet", raise it to the bow, draping naturally into its playing position. Dip it "back into the water" and repeat a few times.
- The bow hold should be flexible, natural and able to feel the vibrations of the string. Keep in mind that the string is an important part of your bow hold as it supports the bow.
- If you squeeze the bow, you deaden its vibrations and lose functionality in the bow hold.

3. Specifics of Bow Holds

The bow hold should be supple, curved, and have a natural architecture that functions to efficiently transfer the motions of the arm to the bow and the string.

French:

- The two primary points of contact for the French bow are the thumb and the first finger. Their relationship creates the primary mechanism for applying weight into the string.
- The thumb should be slightly curved and sitting in the “saddle” where the frog and the stick meet, making contact along “southwest” facet of the octagon, not fully underneath or up on the side.
- Second finger drapes over and touches where the ferrule and the hair meet. Along with the thumb, it is part of the “core” of the bow hold, and helps to control the angle of the hair.
- The first finger should drape over the stick about a finger’s distance from the second finger. In concert with the thumb, the first finger functions to apply weight into the string.
- Third finger should drape over the stick in front of the throat of the frog.
- The pinky should drape over the stick near the eye of the frog. In concert with the thumb, it functions to help lift the bow.
- All fingers should be naturally rounded and soft, making contact in the medial phalanges (the middle section of the finger between the first and second joints from the tip).
- The wrist should be neutral and rounded.

German:

- The two primary points of contact for the German bow are the base of the thumb and the second finger.
- The stick should sit on the side of the palm near the base of the thumb.
- The second finger should be slightly curved and sitting in the “saddle” where the frog and the stick meet, making contact along “southeast” facet of the octagon, not fully underneath or up on the side.
- The first finger should sit along the “northeast” facet of the octagon, not on top or on the side. It (along with the thumb) functions with the side of the palm to help apply weight into the string.
- The thumb should rest passively on or over stick to allow freedom of motion and vibration in the stick. It works in concert with the first finger and palm in applying weight into the string, especially on the lower strings. (However, there are indeed different schools of thought on the use of the thumb.)
- The third finger should float neutrally and comfortably below the second finger, not hooked around the frog or flying away.
- The pinky should be naturally curved, contacting the underside of ferrule. In concert with the second finger and base of the thumb, it functions to help lift the bow.

Exercises for finger engagement:

1. **In your bow hold, orient the bow vertically: tip-up (French) or tip-down (German). With the left hand ready to catch the stick, gradually release the bow until it drops. Just before this point is about the degree of engagement you will want in your bow hold. You can also think of the bow as being “hot”, so you want to be light with the touch.**
2. **Exaggerate the potential for tension by grasping the bow tightly in your bow hold. Then, release all that tension and see how it feels when everything is flexible and the opposite.**

4. Fundamentals of Tone Production

The three primary fundamentals of tone production are placement, pressure, and speed. These three are constantly interacting, and a change in one will influence the others. When all of the principles of tone production are balanced in their proportions, the string will vibrate freely and a resonant, ringing tone will result at any pitch, volume level, or rhythm. While playing, I mostly pay attention to placement and speed, as pressure is typically more instinctive.

1. **Placement:** The contact point of the hair with the string relative to the bridge.
2. **Speed:** The amount of hair length drawn in a unit of time.
3. **Pressure:** The degree of friction (via gravity/weight) where the hair interacts with the string.

5. Aspects of Bowing

Bow tilt.

Generally, I tend to play with the bow hair flat on the string to slightly tilted. Centering the stick over the hair flattens the hair on the string, and tilting the stick away from the bridge lifts the far side of the hair. I never play with the stick tilted toward the bridge.

Playing with flat hair is known as “son premiere”, or “first sound”, as it is the foundation for all the other sounds. Flat hair provides the deepest tone, the most consonant articulation and the quickest release. Tilting the hair brings more transparency, a vowel quality to the articulation, and a more rounded release.

The functional direction of bowing energy is always *perpendicular* to the string (sideways).

The energy of bowing needs to function “side-to-side”. You should mostly see a 90-degree angle between the string and the hair as you play. Practice in front of a mirror to watch your bow path and make corrections. Learn how it *feels* to draw the bow that way, so that you can do it without needing to watch.

Down-bows are a pulling action and up-bows are a pushing action. When engaging the string, down-bows tend to be slightly on the left side of the string, and up-bows on the right side. If you were looking at a cross-section of the string, down-bows would typically pull the string around “11:00”, and up-bows push it at around “1:00”. Pressing straight downward at “12:00” onto the string is completely nonfunctional toward its vibration.

Energy Direction Exercise:

1. **Try bowing with cranking your arm down into the string notice how it gets choked as you try to bow.**
2. **Release the tension. Using the counter-clockwise motion from before, draw repeated down-bows slightly on the left side of the string, directing that energy with the body and elbow in a sideways fashion.**
3. **Repeat with the clockwise up-bow motion, pushing the bow slightly on the right side of the string.**

The placement determines speed and pressure, as the string has its own inherent properties before we enact its vibration.

Nearer to the bridge the string is stiffer and moves more slowly, therefore requiring relatively more pressure and a slower bow speed. Further from the bridge, the string becomes more flexible and moves faster, therefore requiring relatively lighter pressure and faster speeds. If you pluck an open string, you can see this in action as the string vibrates.

Placement is relative to the vibrating string length, which is changed by shifting the left hand.

As an example of this, if you are playing the note A in the first position on the G-string, and then shift your left hand up one octave to the A just above the first octave harmonic, you have reduced the vibrating string length by half. Therefore, if you want to maintain the same tonal quality, you will have to likewise move the bow contact point closer to the bridge by half. Move the contact point by lightly “drifting” or “steering”, never grinding the string.

Any dynamic level is playable at virtually any distance from the bridge.

To maintain a given dynamic level, slower bows should be played closer to the bridge, and vice versa. For example, if you are playing a soft passage and need a long, sustained note, you will need to move the point of contact closer to the bridge where the string moves more slowly. This is contrary to the all-too-frequent and mistaken instruction to “always play soft dynamics near the fingerboard”. However, in faster passages, changes of sound point may be impractical, and adjustments in pressure may be required to maintain dynamic as the speed changes. For example, when playing a dotted-quarter down-bow followed by an eighth-note up-bow, conserve speed on the down and lighten the pressure on the faster up.

Different contact points have different tonal properties.

The tonal properties closer to the bridge are brighter, more projecting, and feature more overtones. Further from the bridge the tonal properties become darker, broader, and feature more of the fundamental.

The bow vibrates the string in an elliptical pattern with a “stick-slip” cycle. Therefore, the pressure must be appropriately balanced.

While the bow is moving in one direction, the string is moving basically in two: in the direction of bow travel during the “stick” phase, and against it in the “slip” phase. Therefore, there has to be an appropriate amount of pressure that both engages the string for the “stick” phase, and allows for it to move freely in the “slip” phase. Too much pressure will make a dead “choked” tone, and not enough will make a superficial “whistling” tone.

Use the free weight of the bow and the hand/arm to engage the string.

Arm Weight/Tension Exercise:

1. **Rest the bow on the string and clench your whole arm tightly, but without pressing. Drawing the bow, you will likely get a superficial sound because you have neutralized the weight of the bow and arm as they are being suspended by tension. In this state, you would have to press to engage the string, creating a vicious cycle.**
2. **Release all the tension, draw the bow freely in both directions, noticing how the tone and feel have changed.**

Bow Weight Exercise:

1. **Bow with just the weight of the bow. German bow: use only the thumb and 2nd finger. French bow: use only the thumb and first finger (staying outside the balance point). Draw the bow, feeling the weight of the bow resting on the string, and listening to the sound it can make without the weight of the hand or arm.**
2. **Place the other fingers back into position and bow normally, feeling how the hand and arm interact with the weight of the bow. Notice how you have to pronate to add weight as you approach the tip, and may have to slightly carry the bow near the frog to reduce it.**

6. Bowing planes:

The bowing planes are the areas on which the bow can be drawn without contacting the neighboring strings. They can also be the line on which a double-stop is drawn on two adjacent strings. It is useful to be aware of the bowing planes, the relationship of the torso and elbow to each plane, and how to freely and efficiently travel between them.

1. Place the bow on the D-string around mid-bow, halfway between the bridge and the fingerboard.
2. Notice the line created by the hair that clears the G-string and the A-string. That is the D-string bowing plane. While bowing, your elbow should be “on the plane”, or slightly “above the plane” when pronating to transfer weight as you approach the tip.
3. Without drawing the bow, rotate with the torso and elbow around to the G-string, then down to the A-string, and the E-string. Notice the position of the shoulders and elbow for each string.
4. Try rotating the bow from the E-string plane to the G-string plane with only the arm/elbow and without the aid of the torso. Notice how uncomfortable it is. Now rotate the shoulders around toward the G-string until you feel centered.
5. If you rotate too far on the G- or E-string, you may send the string slapping against the fingerboard. If that occurs, bow a bit closer to the neighboring string.
6. Smooth, legato string crossings need to be prepared by rolling onto the next string, rather than dropping onto it.

7. Curves of the bridge:

All bowing is essentially curved and rounded. If we try to draw the bow in dead-straight lines, we tend to become tight and lose fluidity. Practicing the curves of string crossings can be very helpful in feeling the roundedness of bowing.

A “forward” curve is a curve that essentially follows the curve of the bridge, and a “reverse” curve is its opposite. A figure-8 pattern looks like a lop-sided, sideways figure-8, with the curve on the left side smaller than the one on the right. Think Salvador Dali drawing the number “8”. Wave patterns are, well, wavy.

Exercise (see handout):

Hodgson’s Bowing Curves

- 1. Forward Curves**
- 2. Reverse Curves**
- 3. Figure-8 Patterns**
- 4. Wave Patterns**

III. Left Arm Basics: (For most of the following, see "Technical Fundamentals" handout)

- Natural Hand Shapes
- Shifting Weight in the Hand
- Left Arm Weight and Shifting: Mr. Moore's "Spartan Warrior" exercise
- The Thumb
 - Guide, pivot point, and for torque—not for squeezing.
- Left Hand Articulation
 - Engaging the string
 - Left hand articulation exercises
- Frame of the Hand
- Shifting Mechanics
 - Small Shift Exercise
 - Scale on One String
 - Large Shift Exercise

Basics II

Intro to Essential Bow Strokes (see “Bowling Skills” handout):

Détaché
Legato
Martelé
Slurred Staccato
Brush Stroke
Spiccato
Sautillé

Left Arm Basics, pt. 2:

Pivoting

Bar/Fork Technique

Vibrato

Thumb Position Exercises

Recommend Recording of Beethoven Symphony No. 5: Carlos Klieber/Vienna

Excerpt Class:

Beethoven Symphony No. 5, mvt. III
Character of piece
Technical challenges
Fingerings and Bowings
How to practice: Exercises