THE TUNING TACKLE BOX: Reeling-In Your Horn Section's Intonation

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We have chosen a fishing theme for this article not only because it is fun and unique but also because tuning, like fishing, requires patience, appropriate tools, and knowledge of the environment. A successful fisherman/fisherwoman has a well-stocked tackle box and is familiar with all the available tools at his/her disposal. In much the same way, a teacher must have a thorough knowledge of the horn and the various ways to implement successful tuning strategies for their students.

LET'S GO FISHING!

One of the reasons that tuning a horn section is challenging is that there are many different makes/models of horns that have different tubing configurations ("wraps"). A variety of models are often found in one band hall. These different wraps lead to the tuning slides being located in a different place on the horn. Fundamental knowledge of the most common wraps will help you determine how to best tune each horn.

Here are examples of four common horns likely to be found in the average band hall. The photos are color-coded to point out the location of the F, Bb, and main tuning slides:

All horns are built with the assumption that the slides will be pulled out slightly. A good general tuning rule is to have your students pull every slide out about the width of a finger (1/2inch) This is a good starting place and more precise tuning may continue from that point. Students need to be trained to daily check the position of all of their slides.

When playing a double-horn your students are essentially playing two-horns-in-one: the F Horn (includes the top set of valve slides) and the Bb Horn (the bottom set of valve slides, accessed by depressing the

thumb valve). Most horns also have an additional one or two F Horn tuning slides. It is important to have both sides (F and Bb) in tune, so the instrument is in tune with itself. When tuning your horn section in an ensemble setting it is best to have each player tune the second-line G (F Horn) followed by the third-space C (Bb Horn).

The main slide on every horn is always the one attached to the leadpipe/mouthpiece. This slide tunes both sides of the instrument. Because of the different tubing configurations, this slide could be located in the back (most common) or the front of the horn. It is important to remember that when you pull the main slide out to correct a sharp pitch on the Bb side (thumb valve) you are also effectively lowering the pitch of the F horn as well. Therefore, it's always a bit of give-and-take in the tuning process on the horn. For example, if the main slide needs to be pulled out generously to adjust a sharp pitch on the Bb horn (and it usually does!) then you will need to push in the F horn tuning slide a bit to balance that action.

In addition to being familiar with the contents of their tackle box, a fisherman must also have a thorough knowledge of how to use the various tools at their disposal. A successful fisherman is aware of their surroundings and is willing to adapt to their environment. In the same way, a teacher must consider some of the external influences that may negatively impact their horn section's intonation:

1. **INCORRECT RIGHT-HAND POSITION**. Most young horn players either have their hand too covered in the bell (causing the pitch to be flat) or too far outside the bell (causing the pitch to be sharp). Imagine the bell being a clock shape with 12:00 at the top of the bell. The best hand position for a young player is flat and open (no space between the thumb and first finger), on the right inside of the bell, with the back of the first finger approximately at 1 o'clock. This position helps balance the weight of the instrument and allows for a naturally open hand.

2. **ILL-FITTING MOUTHPIECE.** Because of natural wear sometimes the mouthpiece will fit too far into the leadpipe and/or is wobbly in the receiver. This will affect the pitch, tone, and response of the instrument. Ideally the mouthpiece should sit about ½ inch into the receiver. The bottom of the shank should be round. A badly dented shank impacts tone and pitch negatively.

3. **WRONG LEADPIPE ANGLE.** Proper leadpipe angle is crucial to both sound and intonation. The leadpipe should be centered to the body with the bell turned outward and slightly downward to match the angle of the player's teeth. If the angle is causing the bell to face inward toward the body, the resulting pitch will be muffled and flat. In order to achieve the correct leadpipe angle it is often necessary to have the student play with the bell off the leg. For very small players it may be best for them to start by resting the bell on their chair. Additionally, a horn strap for their left hand can be especially beneficial to an off the leg player. This allows the student to maintain the downward angle more easily without their left hand sliding out of position.

4. **POOR EMBOUCHURE.** The ideal mouthpiece setting is 2/3 on the top lip, 1/3 on the bottom lip although this will change slightly depending on the size of the player's lips. There are essentially two muscle groups working simultaneously in different directions in order to achieve an efficient embouchure. The corner muscles must push forward to form a slight pucker and the chin muscles should pull down. When a student does the opposite by pulling back the corner muscles to a "smile" and bunching up the chin it stretches the vibrating area, and it results in a thin, sharp sound.

5. **LACK OF AIR CONTROL.** Teaching horn players to use faster air in the high range and more (slower) air in the low range is very important for pitch and accuracy. The air speed must match the frequency of the vibration. Additionally, changing syllables in the different registers is also helpful for brass players. By using the syllables "toh," 'ta" and "tee" (low to high) the player is able to change the shape of their oral cavity. This helps center the pitches and encourage better intonation.

6. **INCORRECT SEATING.** How and where you seat your horn section has a big impact on their ability to tune and project. As an experienced fisherman is aware of their surroundings and seeks out places that will yield the highest possibility of catching fish, so should a teacher look for ways to improve their horn section's environment. Many directors choose to seat their best player on the end of the row, to the left of the podium, with the strongest player's bell facing towards the audience. The problem with this seating arrangement is that it deprives the rest of the section of being able to match and tune to the first-chair player. A better idea would be to seat them in a row, the first-chair's bell facing the second-chair and so forth down the line. This way each player is able to hear and match the style and intonation of the player to their left, all the way up to the first-chair player. This is the preferred horn seating arrangement of most professional orchestras. If possible, place a plastic shield behind the bells of your horn players. As you know, the horn is the only instrument with a back-facing bell. If there is no reflective surface (shield or wall) directly behind them, your horn section will lose sound and projection, definitely making it harder for them to tune. They must be able to hear themselves adequately in order to tune. With a reflective surface, intonation will be improved thereby resulting in better projection.

In summary, we have shared many obstacles that could result in an unsuccessful fishing trip, analogous to poor tuning in your horn section. But we have also shared some solutions and strategies to these obstacles. We hope that you are now able to "stock" your Tuning Tackle Box with all the essential equipment and knowledge of the many tools available to you.

HAPPY FISHING!

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