Understanding the Crow & Oboe Reed Adjustment

Dr. Lindabeth Binkley, Assoc. Prof. of Oboe
Central Michigan University
(binkl1l@cmich.edu)

I strictly follow two basic reed-making truths:

1. The reed must respond, all the time, in every register and at all dynamic levels.
2. The reed must cleanly crow in tune, even **after** playing on it.

Response and a clean crow are the core elements of my reed making process and equally important to keep track of when adjusting reeds that you did not make yourself.

After years of frustration, experimentation, and consultation with other oboists, I have finally concluded that everything any oboist has ever said about the structure of the reed is true: the better balanced the reed, the darker the sound and the more consistent the intonation. Everyone makes reeds differently, but they all need to vibrate in order to play well and sound good. Understanding the basics of crowing, how the vibrations move through the reed, and how information from the crow tells you about the reed's response, intonation, and tone will greatly help you make any reeds you purchase better.

In order to adjust an oboe reed, you must understand the crow, which is the sound the reed makes when it is completely inside your mouth while blowing air through the reed. There is an art to crowing. It feels weird and can sound ugly at first, but with time and practice, you will learn how to "read" the crow and use it to help guide your reed adjustments.

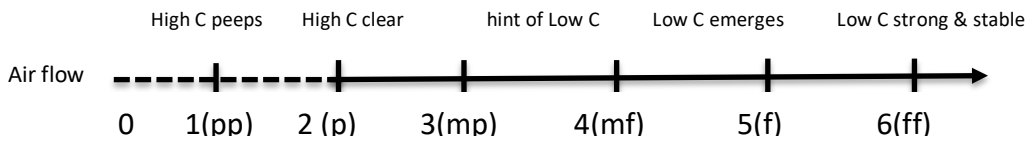
How to Crow (The Basics)

1. Put the reed in your mouth so that the blades are completely inside your mouth and your teeth are touching the staple's thread. Your lips must not be touching the blades of cane. Use your teeth to hold the staple or hold the cork with your fingers, being careful not to cover the end of the staple with your hand or fingers.
2. Start blowing with slow moving air, gradually increasing the air speed. You should literally be able to hear the blades of the tip begin to vibrate. The first sound you hear is coming from the tip. As you blow harder, you should hear lower pitches enter the crow. By the time you finish the crow, you should hear a stable octave C crow.

The Full Spectrum Crow (FSC)

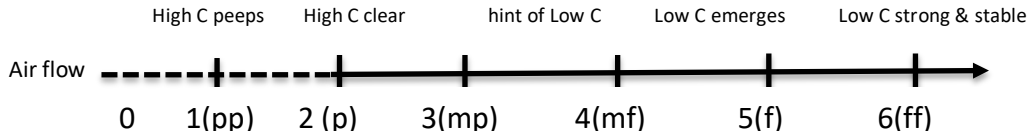
A Full Spectrum Crow (FSC) explores all the vibrations in the reed. It starts with little air flow in which you slowly increase the speed of the air until the blades of the reed are vibrating freely and loudly. Imagine you are blowing a long crescendo as you crow, moving through all dynamic levels as you increase the speed of your air to its strongest, loudest point. You will hear the various pitches sound in the crow as you blow, with the goal being a stable, strong double C octave at the end of the crow (*see diagram below*). Take your time when doing the FSC. You will always start with slow air, gradually increasing to a fully supported air stream.

Equate the crowing air flow process to a dynamic scale between 0 (air starts) to 6 (blowing as freely and loudly as possible):



The FSC allows you to hear how pitch and vibration moves through the reed. The more accustomed you become to hearing it, the easier it is to adjust the reed. You will notice patterns in the crow and know exactly where you need to take cane off the reed to improve the vibrations, which will improve the way the reed plays and sounds when it is in your oboe.

What do you want to hear from a Full Spectrum Crow (FSC)?



It is a good sign when you get a fairly clear, clean, and moderately responsive high C at a level 2-3 air flow followed by a hint of the low C as you increase the air flow to a level 4-5. The emerging low C crow may be "dirty" and have lots of rattle, strange vibrations, etc., particularly if it is a machine made or profiled reed.

It is also extremely important to be consistent with reed placement in your mouth when crowing. Make sure you always have the blades of the reed completely in your mouth when crowing. **The point of crowing is to find out what the blades are doing without any manipulation of your embouchure.** You will be "reading" these vibrations to tell you where to scrape as you work on adjusting a reed. If you manipulate the crow in any way, it may cause you to scrape too much cane off or focus your scraping in the wrong place.

It is also very important to follow your FSC with a playing test in the oboe. This will help you understand the correlation between the crow's sound and how the reed feels/sounds when played in the oboe. Once you have played with the reed in the oboe, always repeat the FSC on the reed before deciding what adjustments you will make, especially if you are new to crowing. Most players new to crowing will shy away from using enough air to produce the FSC because they do not like the way it sounds (especially when they get to the loudest part of the crow). Hopefully, when playing the reed in the oboe, they will be using full air support. This full air support will usually cause the FSC to sound different when you crow on the reed AFTER it has been played. If you make reed adjustments based only on the crow you before you play on it, you risk over-scraping the reed and/or scraping in the wrong area of the reed to make it better.

For the most success, always:

1. **Crow** the reed, **play** your reed test, **crow again**, and then **scrape**.
2. Repeat, repeat, and repeat No. 1 until you reach the desired sound and playability of the reed.

Relating the Crow to the Structure of the Reed

In my experience, the best reeds have a clean, balanced, C crow in which you hear a stable octave. This octave comes from the two main parts of the reed: the **tip** and the **heart**.

- Tip= High C crow
- Heart= Low C crow

When adjusting an oboe reed, I focus on the following things:

1. **Keeping my knife sharp!** Every time I flip the reed over, I sharpen my knife, especially if I am working on the tip. Believe me, a dull knife is the kiss of death in reed making- it can destroy a reed faster than anything else.

2. **Getting the right type of high C tip crow.** I want to hear a clear, "up" high C before any low crow emerges.

3. **The engagement and quality of the low C crow.** It should be strong but stable. A little bit of rumble or rattle is okay, but I like it best when the low crow helps create a clean solid octave with the tip crow.

4. **Backlighting the reed, checking both blades for symmetry and evenness of scrape in the tip, blend/upside down "V", heart, back, spine, and catch.** When there are places on the reed where there is more cane on one blade than another, or the structural proportions are not the same on both blades, the crow will have many confusing, chaotic sounds. Backlighting the reed is always the first thing I do if I feel like the crow is chaotic and I cannot easily distinguish two different pitches in the crow.

5**. The profile view of the blend area where the tip meets the heart**. The blend area is where the high crow and the low crow meet. It should start in the same place on both blades and have the same type of slope into the heart. The crow can get very wild and crazy when there are problems in the blend area, so it is a good idea to keep an eye on it when adjusting an oboe reed. Issues with the blend area show up when you play first octave notes F, F#, and G. These notes may feel very unstable at a loud dynamic level. Structural problems in the blend area also make the second octave notes sag. If the angle of blend area is too prominent, low notes may not speak easily or sound as full.

6. **The profile view of the back.** The back can do many different things to the crow that influence the sound and feel of the reed when it is played. It can release the low crow (improve low note response), support/strengthen the high C tip crow (improve the intonation of high notes, especially in the third octave), and more. Looking at the profile to see how the back has or has not been scraped can provide valuable information. If there is too much out of the back the reed will feel stuffy and stiff, even if the tip is responding easily. Too much out of the back can also make the overall crow slide sharp the harder you blow. This means that when you play on the reed and try to play loud, your intonation will likely go sharp. If there is not enough out of the back, the reed may tend to sound bright and feel very open when played. You may struggle with overall flatness on all notes when playing.

7. **The engagement of the tip crow.** I like good response when I articulate. I want my tongue to be very light on the tip of the reed when articulating, especially if I have to play a lot of fast notes or if I want to be able to play with a wide variety of dynamics.

If the tip crow does not start clearly or I hear it start with a "pop" instead of a whisper, the tip is still too thick.

If, when listening for the tip crow to start, you hear low rattling vibrations first, it points to a different problem. The opening of the tip may be too big (pinch it closed), the tip may be too long (try clipping it), or too much has been taken out of the heart too soon.

8. **I crow, play my reed test, crow again, and <u>then</u> scrape!**

There are many consistent patterns in crowing sounds that relate to scraping on specific areas of the reed. To cover them all in this handout would literally take volumes. For now, I am going to keep it simple and attempt to address some of the most common "big picture" issues.

Keep in mind, however, that when you find yourself frustrated or unsure about what to do, **always, always, always go back to the concept of the Full Spectrum Crow (FSC).** The tip must respond and the reed must crow in tune. If you start fixating too much on the sound of the reed in the oboe, you will lose track of the crow and, before you know it, be making reeds that sound dark but have no projection, nuance, or stability. You are also likely to find that your embouchure is doing most of the work, not the reed.

There are an astounding number of variables involved in diagnosing crows. What follows is a listing of some of the **most common** issues with possible solutions (or reasons why you are getting a particular crow). Please keep in mind that these are generalities. They should work, but it is impossible to give you an absolute, tried and true answer when air support, oral cavity, and every reed is different.

Problem Solving

Playing Situation #1: Reed sounds flat, second notes sag, second octave D will not speak without embouchure pressure. Tone is wild and you feel like you have to control it with your embouchure.

Sound of Crow: Seems persistently flat, even after you have clipped it several times.

Problem Solving:

- ***Is the cane tied straight on the staple?*** If it "dog legs" or is off the axis in any way, it will generally make the reed crow flat no matter what you do. Give up and start over- it is not worth continuing.
- ***Does the reed have loose sides (especially when it dries out)?*** Even if the sides come together when the reed is soaked, it will tend to want to crow flat. Insert your plaque and hold the reed vertically by the plaque. The reed should hang on to the plaque. If it immediately drops off, you know it has loose sides. Give up and start over- it is not worth continuing.
- ***Is the opening of the tip huge?*** Sometimes, a piece of cane will have strong curve or you have used a staple that has a rounded opening. This keeps the tip open and therefore keeps the pitch flat. You will feel like you have to bite on the reed when playing in order to play in tune. Inspect the staple after you destroy the reed and throw it out if that is the case. If the curve of the cane is pronounced, I would probably store it for a season and use it at a time of year with low humidity.
- ***Is the tip is sloping down evenly from the heart and in the same place on both blades?*** If the back of the tip is thinner than the front of the tip, it can sometimes cause a big opening (i.e. fish lips". Changing the slope of the tip may help the problem. You may also try taking a bit more out of the back, which will tighten the sides of the tip and therefore raise the pitch.
- ***Check the tip response when crowing.*** You may be ignoring the fact that the tip is just not thin enough and therefore scraping too much out of the heart too soon. The tip has to be vibrating clearly and cleanly first before you do too much in the heart. Try carefully thinning the very tip of the tip and see if that helps raise the pitch
- ***Is there a crack in the tip of the reed?*** A cracked tip will cause this kind of crow. If so, give up. It is not worth continuing.

Playing Situation #2: Overall intonation when playing is sharp. Articulating notes, especially in the low register, is difficult. Overall tone seems thin and bright. Reed has limited dynamic range. Playing with vibrato is difficult.

Sound of Crow: High crow is sharp (C# or D), feels resistant and/or doesn't speak easily. Low C crow is also sharp if present. Low crow may fade in and out depending on how hard you blow.

Problem Solving:

- ***The tip is likely too thick and/or too short.*** Take more off the tip, particularly the tip of the tip to improve response. You may also try slightly lengthening the tip to lower the pitch of the tip crow.
- ***Check the tip opening.*** It may be too small. When the tip opening is too small, blowing a lot of air through it (crowing or playing) will actually close it up further. This raises the pitch and makes the reed feel sharp and resistant when played. If this is the case, you could try using

pliers on the flat part of the staple, just below the crossover, to gently open the tip. This will change the staple, however, so it is a last resort fix.

Playing Situation #3: Reed is playing consistently sharp in all registers and response is easy. Tone is bright and thin. You find it difficult to play with vibrato.

Sound of Crow: Tip responds easily and high C tip crow dominates; very little low crow is present. Overall pitch of crow is sharp.

Problem Solving:

- ***Check the opening of the reed.*** If it is too small, especially when dry, the reed is going to be sharp and easy no matter what you do. Taking more cane off anywhere on the reed to try and lower the pitch will likely only make the problem worse.
- ***Sharp and easy is the worst combination!*** In my experience, there is not much that can be done to remedy this problem. Let the reed go!

Playing Situation #4: Reed sounds honky, wild, and vibrant when played. Pitch is generally flat. High notes sag or do not speak well at all. Octave slurs are out of tune. It is impossible to get third octave notes out without biting on the reed. You feel like you have to control the reed with your embouchure in order to play it.

Sound of Crow: The crow has no pitch center, sounds wild, and response is very easy.

- ***Something is out of balance in the structure of the reed.*** The tip may be too long. Try a small clip first and see if that calms some of the vibrations down and raises the pitch. Keep clipping until you are reasonably close to a "C".
- ***Look at the opening of the tip.*** If it is too big, gently pinch it and re-crow to see if it improves. (You may have over-soaked it.)
- ***If the tip is a reasonable length***, try back lighting the reed and look for areas where the structure of the reed is uneven, particularly where the tip meets the heart (the inverted "V" area). Adjust accordingly.
- ***Inspect the profile***. If it is not symmetrical, you need to even up things so that everything is in balance. Make sure the heart does not slope up towards the tip.
- ***Also make sure the sides of the tip are thinner than the center of the tip, particularly at the bottom of the inverted "V".*** If there is no inverted "V", create one.
- ***Lastly, is there a noticeable difference between the heart and back?*** If not, take more cane out of the back

Playing Situation #5: Overall tone is bright and thin, but the intonation is good. Low notes do not speak easily when articulated.

Sound of Crow: High C tip crow feels resistant but makes up the majority of the crow's sound; low crow is non-existent or only speaks if you blow extremely hard.

Problem Solving:

- ***Thin the tip.*** As you thin the tip, the low crow may start to appear and the pitch of the crow will lower.
- ***Once the tip is vibrating freely, increase or lengthen the transition area between the tip and heart (i.e. the blend area) slightly to encourage the low crow to speak.*** If that works, extend the scrape to include the entire heart. Make sure that the profile of the heart is even, too. If it slopes up towards the tip, the low crow will not speak. Proceed cautiously. You want the low crow to be there, but not too freely. It should feel a little stiff.
- ***To get the low crow to completely drop in, take more out of the back, especially the middle of the back going into the catch.*** This should help the low crow drop in prominently.