

# Reeds

## *How To Care For Them and How To Improve Their Response*

– Floyd Williams

The purpose of this article is not to outline a detailed, complex method for fixing clarinet reeds. This has been done and is still being done by a number of writers on this subject. Some of the books which describe reed-fixing are listed in the bibliography. They should all be read because it is necessary for every clarinetist to understand a variety of ideas to arrive at their own approach to working on reeds. Here are some simple, but effective procedures which will make more reeds respond better and last longer.

Reeds last longer and play better when stored in a stable environment. When they are allowed to dry out excessively or soak up too much moisture, they warp. Don't confuse warping with a wrinkled tip which occurs when the reed is first wet. This wrinkling is an indication that it has been allowed to dry out too much. It probably is warped if this happens, but it is mainly useful as a general indication of lack of sufficient moisture in the reed during storage.

A simple solution to maintaining moisture in reeds is to keep reed cases/holders in a re-sealable plastic bag or small food storage box. It is important to dry the reeds off before putting them away as they will warp in a concave manner if too wet and, of course, mildew and mould could be a problem also.

I don't think that storing reeds in holder/cases that rely on a flat surface is of any use, and could cause problems. A reed which is slightly damp on the bottom will dry faster on the top surface than the bottom and this stress could exacerbate the tendency to warp. An economical solution is to find a suitably sized food storage container, put a strip of Blu Tac at the ends and simply stick the butt of the reed into the Blu Tac so it is held on its side. That way, the reed dries evenly.

A warped reed is one which is no longer



flat on the back. This flat back is a requirement if it is to seal adequately to the table of the mouthpiece while vibrating. If allowed to dry out too much, it will warp convexly, if too wet, concavely. The usual problem is a convex warp.

You may test for convex warpage by placing the reed on a perfectly flat surface (a piece of glass will do nicely) and checking for any sign of rocking back and forth from side to side. Even a seemingly slight amount of rocking is not good. You may also place it on the mouthpiece, wet the heel of your hand, place the bore end of the mouthpiece on your hand and suck on the mouthpiece in order to create a partial vacuum inside the mouthpiece. If the reed is flat enough, it will be forced to the mouthpiece and stay there for about two or three seconds before it overcomes the vacuum and snaps back away from the mouthpiece with a "pop". If it doesn't, it is leaking somewhere along the sides.

Slightly warped reeds can be fixed at the expense of softening them slightly. If warped too badly, especially convexly, throw them away.

A "second cut" or more conveniently

sized "flat bastard" file is useful for fixing a slight warp or the slight flattening and smoothing of the bottom of new reeds. Place the reed at the pointed end of the file and keep the upper half of the reed on the smooth surface at the end of the file. Let the sanding touch the lower half of the reed's back. Place your fingers lightly on the reed and sand in a back and forth motion. Do a little at a time and check to see if the reed is flat. After it has been flattened, you may have to clip it slightly if it has become too soft. On new reeds you may place the entire reed on the file, as you will be removing only a very small amount of wood.

The ideal solution for this problem is to prevent the warp from occurring in the first place. This problem can be minimised by storing your reeds in a container which seals tightly enough to prevent too rapid a moisture exchange with the surrounding environment. It may be that a zip-lock plastic bag will be sufficient, or perhaps a plastic refrigerator container of a convenient size, as described earlier. All of these seal to a different degree. Also, the number of reeds kept in the container and how many of them are played each day has an effect on



the results. This is due to the fact that the reeds act as a moisture wick when they are played and they still retain some moisture when stored in a reed holder. A little experimentation is required in order to arrive at an acceptable degree of moisture for the reeds. Obviously, it will vary if you only have four reeds and practice every other day. The reverse situation might involve 15 to 20 reeds in the container with several reeds being played every day in practice.

The important thing is to be consistent once you find something that works and never leave the reeds out to dry, not even for a few minutes, for example, while trying reeds. Close the container.

If you get mildew on the reeds, the container may be too tight or the reeds are being put away too wet or the weather is very humid. In some areas of the country, none of the procedures mentioned above are necessary because of high humidity, especially in the summer. In other areas, warping may only be a problem in the winter with low levels of humidity in the environment. It is not difficult to adjust for these factors and the results are well worth the effort. Your reeds will play better, last longer and play more consistently from day to day.

It will be most immediately useful to discuss the ways in which a reed's response can be improved without any special skill with reed rush or a knife. These procedures involve the dimensions of the reed (especially near the tip), the placement of the reed on the mouthpiece, polishing the reed's bottom, the shape of the reed's tip and finally, the breaking-in process.

When you open a box of reeds to try them, never play them for more than a few minutes on the first day. During the first five to seven days of a reed's life, avoid playing it for more than ten minutes a day. This allows the reed to become accustomed to wetting and drying gradually and will increase its useful lifespan. Adjustments can

be made during the break-in period, but don't try to make it play in one session Do the work gradually.

When the break-in period is over and the new reed joins your other playing reeds, alternate the reeds you are using each day. Don't play a reed for hours at a time, day after day. It will not last as long or be as consistent as it would be if it is allowed to "rest", alternating with other playable reeds.

In order to use reeds in this fashion, you must have playable reeds and reeds that are in the process of being broken in. I would suggest that you have on hand a minimum of eight reeds at all times. For example, this would give you four playing reeds and four reeds which are being broken in. As the playing reeds are used up, they are replaced by properly broken-in reeds. This procedure continues so that you never have to play a performance, rehearsal, or a lesson on a new or unadjusted reed.

Clarinet reeds play best with a tip width of 13 mm. Some brands of commercial reeds are closer to this measurement than others when they are manufactured. Adjusting the reed to this width is especially helpful if the reed is a little too resistant or hard. If the reed is soft, don't bother with this adjustment.

Place the reed on its side on #320 sandpaper and sand it back and forth the same number of strokes on each side. Distribute the finger pressure so you don't destroy the even taper of the reed towards the tip. Counting the number of strokes insures a reasonable degree of control over the amount taken off each side. When the reed is 13mm wide at the tip, round the corners off with an emery board, being careful to stroke towards the centre of the tip only and not back and forth.

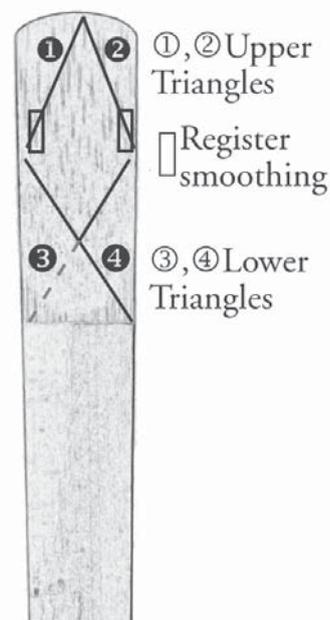
Next, lightly bevel (round off) the top right and left edges of the reed from shoulder to tip. On the bottom edges, one or two light strokes of the sandpaper from shoulder to tip will remove any "burrs" left

by the sanding.

During the first day of a reed's life, the bottom of the reed may swell slightly towards the mouthpiece window, causing the bottom of the reed to look rough and "grainy". Rubbing the reed very lightly on the file or even on the back of a piece of sandpaper (the non-abrasive side) will restore a smooth surface to the reed. This rough or "grainy" appearance can decrease response. Be careful when using the file, as you don't want to soften the reed. This raising of the grain is similar to what happens when you paint wood and then must sand it smooth again between coats of paint. You can help maintain a smooth, hard surface on the back of a reed by rubbing it down on paper after each use, if necessary. Also, rubbing the top surface of the reed with the finger or a smooth, round object is a normal part of the breaking-in process. This helps seal the open tubes at the surface of the reed and helps form a homogenous vibrating unit. Do this last procedure on a piece of glass or any flat, smooth surface.

An often neglected aspect of reed adjustment involves the simple placement of the reed on the mouthpiece. There are five positions which should be tried to see if one results in a better sound. These positions are:

- (1) positioning the reed a little to the left,
- (2) a little to the right,
- (3) slightly higher in relation to the tip,
- (4) slightly lower, and
- (5) what you consider your normal, symmetrical placement on the mouthpiece.



It might be helpful to mark reeds to remind you of where they play best.

The next steps in reed adjustment require a certain degree of skill and experience, which can only be acquired by doing it. Don't be afraid to try to make your reeds play better. Remember, this skill is easier to master than the time and effort you have spent learning to play the clarinet, and it will greatly improve your clarinet playing.

First, study the drawing below in order to understand the parts of a reed which constitute the main areas you will be adjusting.

The ideal in reed fixing is to arrive at a reed which is symmetrically balanced from the shoulder to the tip. In other words, if you draw an imaginary line down the reed longitudinally dividing it in half, each half will be the same. In the following instructions, we will concern ourselves with only the principal areas shown in the diagram.

### Brief Version of Henry Larsen's Reed Balancing Procedures

With the reed on the mouthpiece, twist the instrument so that more embouchure pressure is exerted on the right hand side of the reed and play mp-mf low e and observe the degree of resonance (clarity in the tone). Remember, you will be hearing how the left side of the reed responds.

Then, do the opposite, and see how the right side compares to the left. The duller, less resonant side needs to be scraped with reed rush in the lower right or left triangle, still with the reed in place.

When the right and left feel and sound the same, then check to see how the B natural a 12<sup>th</sup> higher sounds on each side. If one is smoother and clearer, then scrape a bit on the opposite side in the area shown in the diagram as "register smoothing".

After this plays to your satisfaction, test open g' in the same manner, but now you will be scraping either the right or left upper triangle.

You may find that playing a few adjacent pitches to the low e and g' will help you to determine which side needs scraping with reed rush. At this point, I might suggest that you use reed rush dry. It is commonly suggested that the rush be wet, pressed down flat at one end and left to dry so it remains flat. I've never seen any particular benefit to this procedure. To use it dry only requires that the walls of the rush be sufficiently thick to avoid crumbling under the light pressure required to make an adjustment.

For me, this makes most potentially good reeds play well. You can't make all reeds play perfectly by adjusting them. You can make them play better, but the quality of the cane and the even distribution of xylem (tiny tubes that run up through the cane) are very important factors which no amount of adjusting will change.

(For a more detailed description, please refer to the articles "The Reed Connection, Part I and II in *The Clarinet* July/August 1991 and November/December 1991 by Henry Larsen.)

It is important to have a model reed in mind before you begin adjusting a reed. If the reed still doesn't play to your satisfaction, more work in areas 1 and 2 may be necessary. This may be an actual reed which has given good service or a strong mental image of what a good reed feels like when you flex its tip and areas 1 and 2 with your finger tip.

Assume we are working on a reed which is a little too hard. If it is too soft, you can only clip it. However, some reeds which seem to be too soft really just need to be properly balanced at the tip. If one side is considerably harder than the other, it may feel and sound as if it is soft, but when the hard side is balanced with the softer side it will most likely feel right and sound good. Also, you may achieve this better balance by narrowing the reed only on the soft side and leaving the harder side alone. In fact, you may have to narrow it in favour of the softer side and balance the harder spots in the tip area in order for it to feel right. Remember, a reed which seems just right or a bit soft on the first playing will probably get more resistant during the first few days of the breaking-in process. This is why you should not do too much adjusting during that period. Do not clip a soft reed until you have balanced it

Ben Armato, in his book *Perfect-a-Reed: A Scientific Method for Reed Adjusting*, suggests that you not only feel for harder spots on the tip, but look for the places that bend less when you flex the tip or the area back from the tip. This way of looking at it may be easier than feeling the hard spots. He also suggests marking them lightly with

a soft pencil so you easily see where to scrape. Scraping off the light pencil mark is about the right amount of wood to remove at one time.

Adjust the tip until you can feel that it flexes evenly across its width. It is acceptable (perhaps desirable) for the mid-point of the tip to be slightly harder than either side, but only a little. You are generally looking for an even deflection of the tip as you move across it.

Always be sure your reed's tip is well-rounded to match the shape of your mouthpiece. As a reed gets older, it may develop a tendency to "buzz" and be noisy in the lowest register of the instrument, especially when playing softly. Try changing the shape of the tip, that is, make the tip more rounded in shape. This can also change the tone of the reed to a darker, less edgy sound in some instances. Use an emery board for this and experiment.

Reed fixing is a very personal skill. Work at it every day, but not at the expense of practice. Read all the books and articles listed in the bibliography and develop an approach that works best for you.

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Missed issues?

Corrections?

Address change?

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