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Reed Adjusting

by Christian Davidsson

You can spend a lot of time scraping and adjusting reeds with no or only minimum results. You can also spend minimum time with maximum results. Then, of course, you have to know where to scrape or adjust etc. But the most important thing is that you have a methodical approach so that you have an overview while paying attention to what you are doing, thereby learning from your mistakes and developing your knowledge and your skills in order to have the reeds the way you want them.

Diagnosis. First the reed you are about to adjust needs a diagnosis. It is not enough that you discard the reed just thinking it is bad, because the most impossible reed can have a happy ending and vice versa. OK, the reed doesn't feel good, but what is it about it that doesn't feel good? It could be one or more things and sometimes it could just be a big mess. If it is only e.g. the striking of a note that isn't good, you head for scraping/adjusting the area or areas that influence the striking/tonguing. But if it is more, it is time for being methodical and solve the problem bit by bit. When you play on a reed you could probably say immediately if the reed is too hard, too soft, too dark, too bright, too heavy in the high register, too heavy in the low register, too sparkling etc. You take measures to correct all of the problems in the order that they reveal themselves.

Balance. It is important to know that all things are related and that it is the balance between all corrections that will give you a better reed. To point out that if you scrape here the result will be this and if you scrape there the result will be that is the easy part, which I will show in the following figures. The more difficult part is to achieve a balance in the reed, which you will have either with pure luck or if you develop your feeling for how much of one thing or another you should do to your reeds. This feeling for the reeds you can only develop yourself. However, with great help from being strategic, not scraping too much at one time and the following reed-scraping figures, in time you can further develop through your own discoveries.

Scrape with your eye! See to, no matter where you scrape, that you don't get any pits or edges. It should be soft crossings from the areas where you adjusted to the non-adjusted ones. Balance between the middle of the reed to the edges. Too thick in the middle and too thin at the edges e.g. will give you a reed that is all-through resistant. Use your eye and see to that there is flow, harmony and smoothness through the whole reed. Get to know how different cane reacts to similar scrapings. Always let the qualities you are satisfied with remain untouched and be the reference points to the things you aren't satisfied with.

Tools. Use your imagination when it comes to tools. It is important that you have tools that you find good to work with and that suits the different moments. The primary tools are a mandrel, reamer, tongue, knife and pliers. The mandrel shouldn't be too long as then it hits the tongue inside the reed. The tongue should be wide enough so that the whole reed fits over it. The knife should be a reed-knife, but other knives works as well as long as it's not too big, fits well in the hand and is easy to sharpen. The pliers should be small and not too wide so that you can get to small areas. Wet-strength sandpaper with a very smooth surface (P1000) is a good aid for getting the reed surface even and when you need to adjust the tip. A nailfile of metal is excellent to e.g. file down the edges of the reed. A knife with a curved edge makes it easy to scrape small areas with precision. Next you will find a fault-detecting section, thereafter a description of what happens (or could happen) when you adjust the different points. And finally you have reed-scraping figures. Now it remains for me to say: ...Good Luck!

In the following description I outline different ways of approaching that which your reed lacks.

This doesn't mean that you should apply all of the remedies for each point, do that only in the worst cases. The measures described are in an order that I find suitable. Alternate between the different ways to reach the desired goal as all corrections have their side affects and some of these side affects can be put in balance to achieve that which you wish with your reed.

If the reed is too hard: see that the middle of the reed (15) isn't too thick in comparison to the edges, if so scrape here. If you have too much wood in your reed, start to scrape evenly over the whole reed (8). Try to discern if the e.g. high register becomes light and the low becomes heavy or vice versa. Then stop and do some further scraping on the areas you are not satisfied with. If the cane is very hard, you can as a last resort dip the whole reed (8) in boiling water for approx. 10 secs.

Too soft: If the reed is only partly soft, try to pull and tighten the first and second rings (10), (11). If it is not enough, pinch up the reed on both sides just behind the first ring at point (14). If the reed is very soft, then cut the tip about 0,5 -1,0 mm.

Too heavy in the low register: Scrape the back part (3). You can also pinch the second ring under and over (13). To a certain extent it helps to scrape the outer corners on point (18), but it also makes the high notes easier. Point (1) makes the lows somewhat easier, but mainly makes the whole reed freer.

Too heavy in the high register: Scrape at point (21). Tighten and pinch the second ring on both sides (11). Scrape at point (2), but if not enough even at point (7) and (18). If required, ream out the reed or cut it.

Too dark sound: Start scraping the tip evenly all over (9). See that the "heart" at point (4) isn't too thick compared to the surrounding areas. Just take a little at a time here, since you loose "sound" and stability but on the other hand gain more freedom and flexibility. If even more is needed, proceed to point (7). Pinch both sides of the reed at the second ring (11). Finally, drag the knife in one stroke along the reed on each side of the absolute middle (19). This scraping should be done as a last resort and not too much.

Too bright or too sparkling: Scrape down the edges on both sides (6). Even at point (1) that goes further towards the middle makes the reed darker. Pinch with a pliers on both sides of the reed, behind the first ring at point (14). The reed will have a larger opening that you squeeze together with your fingers in front of the first ring. You will also have increased resistance by pinching at point (14). Further, pinch over and under the second ring (13).

Too hard tonguing: Scrape with a knife the outer side of the tip (5 and 7). Point (9) will give you easier striking and larger flexibility. Try also the points at (1) and (4).

Too easy tonguing: Pinch together the reed with your fingers and grind (with wet-strength sandpaper P1000) the front edge of the tip (17), or cut the reed 0,5 mm. Tighten the first ring (10). Further scrape at point (21). You can also pinch the reed on both sides at point (14).

Too low in the high register: Ream out the reed or cut it. Pinch on both sides of the reed at second ring (11) and/or pinch together the reed at the first ring, point (12).

Too high in the low register: Pinch together the reed at second ring (13). Scrape at point (1), and if needed at point (3). Scrape at point (16), the "eyes".

What happens when scraping or adjusting the different points?

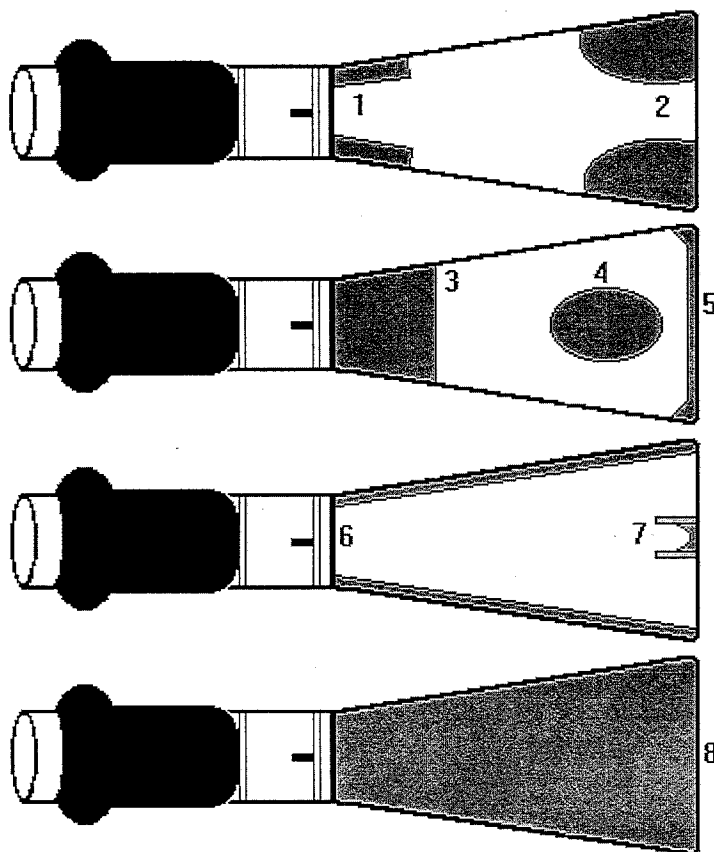
There is a lot to be said about this and a great deal you will notice yourself. I will describe in general terms what basically happens.

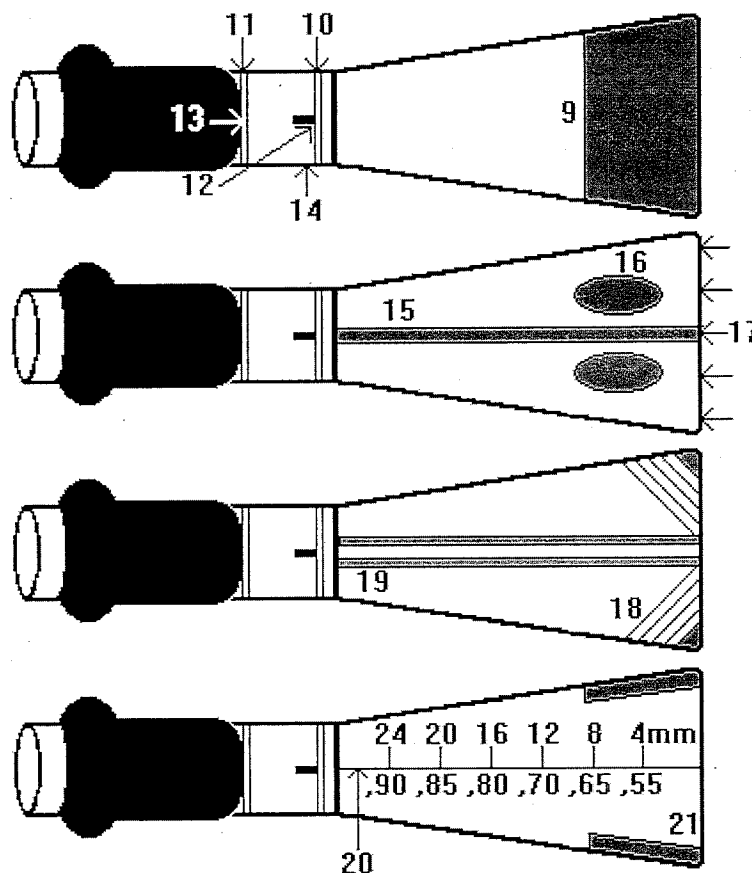
- 1) Scraping here gives you a freer reed. The sound gets slightly darker and the low is increased.
- 2) Tonguing becomes easier. Better flexibility over the whole register. Intruding sounds are muted.
- 3) The low register becomes easier.
- 4) The "Heart", the core of the tone. Too little in this area makes the reed collapse and too much gives you a heavy reed with bad striking and un-flexibility when playing legato. Try other measures before scraping here but if you must scrape, then just a little at the time. The tone gets brighter and weaker but freer when you scrape here.
- 5) Tonguing becomes easier as well as playing pianissimo in the upper registers.
- 6) Scraping along the edges dampen the sound with a slightly darker tone. The reed becomes more flexible. If you take too much here in comparison to the middle of the reed, an imbalance arises and the reed becomes unstable, stiff and resistant.
- 7) Gives an easier high register and tonguing. You also get a brighter sound.
- 8) If you grind evenly over the whole reed it will retain its internal relationship to itself and will become lighter.
- 9) Makes the high register easier, improves the striking, gives a brighter sound and more flexibility.
- 10) The sides of the first ring. The first ring shouldn't be pulled too tight as it restrains the vibrations of the reed. If it is pulled too hard and you want a freer reed, just loosen it up a bit. By pinching the reed on both sides you will have a larger opening, more resistance, a darker sound, and easier low register.
- 11) The sides of the second ring. The second ring should be relatively firmly pulled. Pinch on both sides and you will have a smaller opening, greater stability and easier high register.
- 12) Over and under of the first ring. Pinch the reed together here and you will have a smaller opening, brighter sound and easier high register.
- 13) Over and under of the second ring. Pinch here and you will get a larger opening, more volume, easier legato, a darker sound and easier low register.
- 14) The sides behind the first ring. Pinch here and you will get a darker sound, more resistance and stability.
- 15) "The Back". Too much wood here will give you a hard, stubborn reed. Too little wood will cause the reed to collapse.
- 16) If you grind here the reed will become more flexible and more vibrant. Also the high register is improved. The sound gets brighter.
- 17) Pinch together the tip with your fingers and grind the front edge if the tonguing is too easy.
- 18) Improves the tonguing in the high register and the gives a freer low. The more you grind towards the middle of the reed (the marked lines), the darker, more flexibility and better striking and legato you will get.
- 19) If you feel that the sound is "dead" you can, as a last resort, drag the knife along these lines, but only a couple of times. This will give you more sting in the sound.

20) If you have a gauge you can measure different points of thickness on the reed. This suggestion will give you a reed in good balance **with a lot of power** when using normal dense cane. At the same time it gives you an idea of the incline from the tip of the reed to the back (when looking from the side). If you want a lighter reed, just evenly scrape down the whole surface so the relations will remain within the reed. Measure in the middle of the reed (the back) from the tip. Four mm into the reed the thickness is 0,55 mm, eight mm into the reed - 0,65 mm, twelve mm in - 0,70 mm, sixteen mm in - 0,80 mm, twenty mm in - 0,85 mm, and twenty-four mm in - 0,90 mm.

21) Holds back the sound, gives more resistance and darker sound. Improves upper register.

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