Making reeds for the baroque oboe—1

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Oboe reed making must always have been a mysterious and controversial subject. Most writers who have dared to expound on it have wisely kept their remarks general, the result being that those of us who have set about rediscovering early reeds have extremely little information to go on. The old traditions of guild secretiveness and the very personal nature of the art no doubt account for some of this, but also the oboe (unlike the traverso or recorder) has always been a professional's instrument, not lending itself to the amateur, being so unrewarding in the beginning. Thus the number of early 'do it yourself' oboe tutors is not large, and there must have been a rich oral tradition handed down from teacher to student, which is forever lost to us.

At the same time, it is difficult for the non-oboist to appreciate the crucial importance of the reed. Often called the soul of the oboe, it is without doubt the major factor in an oboe's performance, fixing its tone, response, intonation, and subtler variables, such as the player's willingness to take chances and 'let loose' musically. The same oboist will sound quite differently on two separate reeds, and because they are made of cane, which is an organic material, no two reeds are ever quite alike. This may explain the curious inclination of oboists to sit for hours carrying on incomprehensible discussions on staple dimensions, reed scrapes, etc. For the baroque oboist, who has no tradition or school to fall back on for advice, such deliberations are often of critical significance.

As the state of baroque oboe playing (and thus reed making) is at the moment in its first experimental years, the future will no doubt produce a number of interesting discoveries about the basic construction of early reeds which will eventually render most of the material in this article of little use. The purpose here, however, is not to set down any definitive discoveries intended to stand unchanged forever, but to share some of the techniques now in use, which having been arrived at out of necessity, are in a state of constant change from the influence of new discoveries, the review of original sources, and the demands of the music being played. It is hoped that this information will be of some use at the moment, and may serve as a starting point for further experimentation. On no account should it be regarded as final and unalterable. It has in fact seen many revisions in the course of its writing, mainly due to the invaluable advice of many colleagues with whom the writer has had the pleasure of comparing notes.[1]

For the sake of simplicity, it was thought best to restrict this article to aspects of reed making which differ from those generally used for the modern oboe, as there is no lack of good reading material on making modern reeds.[2] For those who want to make baroque reeds with no previous experience in reed making, lessons from a modern oboe player in combination with information in this article are recommended. It should be noted that the dimensions given here apply generally to all types of late 17th- and early 18th-century oboes (and their copies), pitched at about $a' = 415$ ($\frac{1}{2}$ tone lower than modern orchestral pitch, and used as a rule in present performances on baroque instruments). This does not include later models, such as Delusse and Milhouse, generally with two keys and a narrower bore (the so-called 'rococo oboe').

Original sources and reeds

Unfortunately, there seem to be no known surviving baroque oboe reeds. Reeds from the late 18th century do exist, but although they are invaluable in giving us clues for reconstructing earlier reeds, they were made for an oboe with a bore and tone-holes of significantly different proportions than those of the standard baroque oboe type, and for music of a different artistic and technical nature.

As mentioned earlier, frustratingly little was written by contemporaries about early reeds. In no case is there any information on scraping or finishing, and what little is said about dimensions is not to be trusted unquestioningly. Pictures are our best early source, although oboe reeds hardly form important parts of compositions, and are consequently rarely depicted in detail.[3]

There is an ever-present danger that we modern oboists coming to the baroque oboe, like pianists approaching a harpsichord, will bring with us unconscious expectations and assumptions which are perhaps not relevant. For this reason we must constantly reread and refer to the few original sources that have come down to us. On the other hand, our best key to reconstructing early reeds, though sometimes misleading, remains the practical and empirical experiments each player makes with his oboe in one hand and his reed knife in the other.

Basic differences between modern and baroque oboe reeds

The two main ways in which baroque and modern reeds differ are a reflection of basic differences in the two types of oboe. The baroque oboe is considerably bigger in overall dimensions: the bore is much larger and the pitch is generally lower, usually by about half a tone, sometimes more. To accommodate this bore, the staple and reed must be proportionately wide.[4] A wide reed tends to play low notes more easily, especially cross-fingered ones like the low $b\flat'$, $g+'$ and $f+'$, causes less squeaking, and has a generally rounder and sweeter tone. Because the reed must be in some sort of proportional relationship to the dimensions of the oboe, 10 mm. seems to be about the widest possible extreme; after this point the tendency of wide reeds to speak with difficulty in the high registers becomes too strong.

The second basic difference between modern and

baroque oboes is in the size and shape of the tone holes. On the baroque oboe, these are much smaller and extend through thicker body walls proportionate to their diameters. This causes a greater resistance in the general response of the instrument. Reeds must consequently be scraped softer and freer. The resistance that the modern oboist often consciously creates in his reed, for the sake of tone quality, is automatically built into the early oboe. Softer reeds can be advantageous in several ways; most obviously in increased possibilities for dynamic nuance and tonal range.

Cane

The cane used on modern woodwinds comes from the plant genus *Arundo,* to which references are made in sources dating from at least the late 17th century.[5] It is difficult to imagine using any other reed material on an instrument as sensitive in its reed as the oboe has always been.

If one makes a wider reed than the modern one, the diameter of the cane when in tube form must also be larger, to help keep the reed reasonably closed (i.e., without too much 'arch'). (Fig. 1) Modern oboe cane is generally 11-12 mm. in diam. for a tip width of about 7.5 mm.; modern English horn cane is 12-13 mm. It follows that cane for a reed 10 mm. wide needs to be about 15 mm. in diam. Cane of about 13 mm. diam. can be used (large modern English horn cane, in other words), but it may create a reed which is too open.

Good quality cane of 14-15 mm. diam. is available in tubes directly from some growers in southern France. A list of these can be found at the end of this article. As cane often comes incompletely aged from suppliers, it can be cured by being left in the sun (on a windowsill, for instance) for several months, being turned occasionally. This gives it a rich yellow-brown colour.

Gouging

Buying ready-gouged unshaped English horn cane eliminates this step, but may limit one's choice of gouge thickness or cause the reed to be too open.

In principal, a modern 'machine' can be used for gouging, but using a larger diam. of cane will necessitate altering the dimensions of both bed and blade. In the end, it is easier to use some form of 'hand' gouging, as described below. This involves using either a tool similar to those shown in Diderot's and Garnier's plates,[6] or a hand-carving gouge (a kind of round-bladed chisel) with the ground (sharpened) side on the bottom, and a diam. approximately equal to that of the cane used.[7] (Gouges for hand-carving work better than the similar but more heavily built ones used with a hammer.) (Fig. 2)

The cane is first sawn to length and split lengthwise in four with a knife, and then soaked in water for an hour or two. Sawing slightly longer than the bed length, allows one to hold the cane while gouging, by pushing on the near end with a finger.

During the gouging process, the cane is supported by a wooden bed of somewhat larger diam. than the cane, about

110 mm. long, with a blind end toward which one gouges. (Fig. 3) In order to keep both hands free, the bed can be clamped to a table. In gouging, try to make a continuous cut from one end of the cane to the other, in order to keep a consistent thickness. The gouging tool should be kept quite sharp. Leave more wood in the middle than on the sides, so that the cane has a slight crescent shape when seen from the end. This saves later scraping on the sides and tends to make a more closed reed. (Fig. 4)

After gouging, the cane is scraped smooth with a tool similar to Garnier's 'grattoir'[8] or scraper. (Fig. 5) Similar tools are still available commercially, the English horn end being most appropriate. Such a tool can also be made fairly simply. Other materials which can be used for finishing the inside surface of the cane are Dutch rush, and fine 'wet-or-dry' sandpaper wrapped around a dowel or pencil.

Cane thickness, a variable which must be balanced with the type of scrape used, its shape, etc., ultimately depends on personal preference. Since the hardest cane is nearest the outer surface, or bark, the more material that is removed from the inside surface of the cane, the harder, more resilient, and long-lasting the reed. Thicker cane, on the other hand, generally gives a darker and thus more desirable tone. A standard thickness does not guarantee consistent results, as cane varies in hardness, the softer pieces needing to be thicker to produce the same amount of resistance. As a means of measuring thickness, one can use the old test of holding the piece of cane between the thumb and forefinger of each hand and twisting slightly; one quickly develops a sensitivity for the proper feel, i.e., thickness, of the cane.

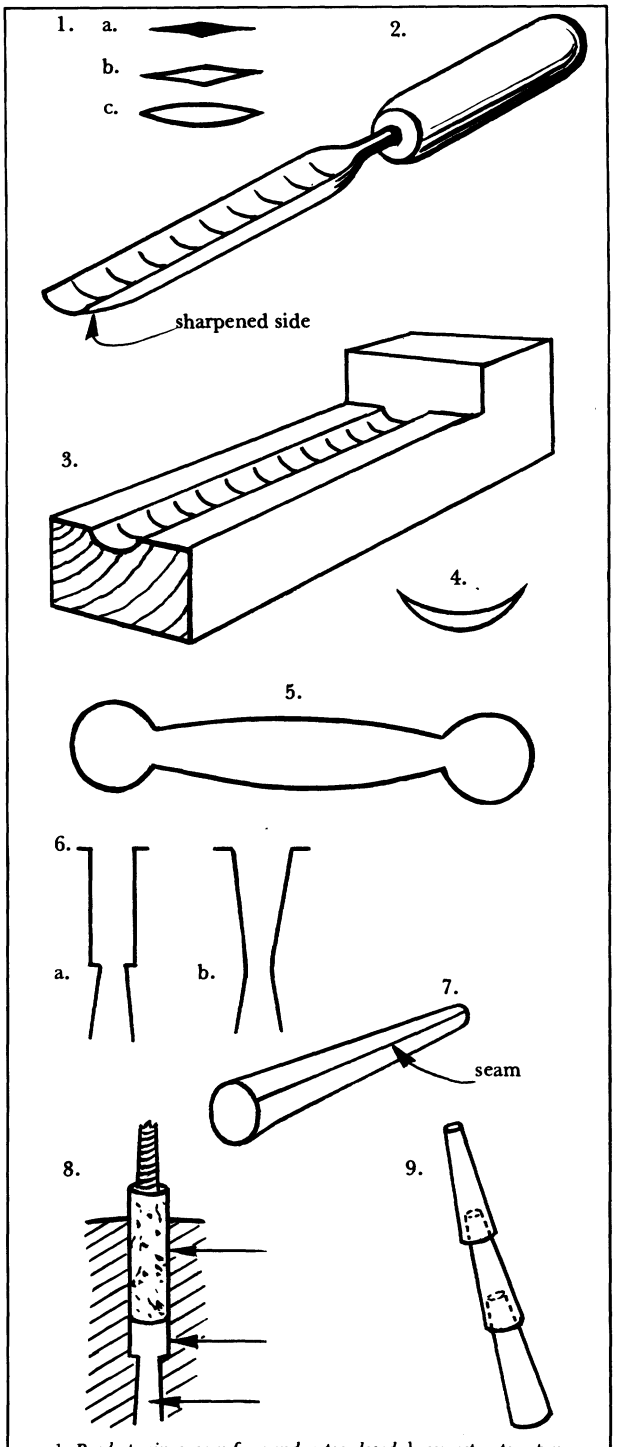
Just before shaping, a final dry scraping smooths and polishes the inside surface, assuming that the scraper is sharp. With practice, this method of gouging takes scarcely more time than using a machine.

Staples (tubes)

Baroque staples, aside from their dimensional differences, varied from modern ones in two basic ways: they did not fit into a 'well' or tenon with shoulders or corners at the top of the bore, but rather into a reverse cone or tapered counterbore. (Fig. 6) They were also made from a piece of flat metal stock which was wrapped around a mandrel; the seam thus formed was generally but not always left unsoldered. (Fig. 7) The staples were then wrapped with thread to make them airtight both along the seam and in the oboe bore. Early staples were usually made of brass, of an average thickness of 0.4 mm.

Modern oboists sometimes tune their instruments by pulling the reed out of its well; this method is not ideal because of the air chamber that is produced under the reed. (Fig. 8) The baroque system has the advantage that since the hole is tapered, a little more or less thread, wrapped around the staple, positions the reed further out, or in, the bore, thus preserving an airtight seal without any air chamber.

One can choose between several different solutions to the problem of staples. A handy and practical one used by



1 *Reed openings, seen from end.* a *too closed;* b *correct;* c *too open*
2 *Gouge showing sharpened side*
3 *Gouging bed*
4 *Gouged cane seen from the end*
5 *Garnier's scraper*
6 *Tops of oboe bores.* a *modern;* b *baroque*
7 *Baroque staple before wrapping*
8 *Modern reed pulled out of bore*
9 *Baroque staple inserted in bore*

several present-day oboists is a multipiece staple. This consists of an upper section made from a cut-off modern oboe d'amore or Viennese oboe staple (on which the reed is tied) combined with one or more conical brass tubes which fit into the oboe. This telescoping staple is especially useful for experimenting with various types of staple, or for trying out an unknown instrument when one is unsure of the type of staple it needs. The reed, of course, effectively remains the same for various 'different' staples. (Fig. 9)

Another solution is to use no staple at all. Diderot in the *Encyclopédie*,[9] next to his plate depicting an oboe, shows a bassoon-like reed apparently made without a staple. Similar reeds have been found on early musettes, instruments closely related to the baroque oboe. Perhaps both stapled and unstapled reeds were used in Diderot's time, although Garsault[10] clearly shows the stapled type. Interesting experiments are at present being made with Diderot type reeds, and for some oboes, at least, they may be very useful.[11]

Staple making from brass stock is time-consuming, especially if one is experimenting with designs and cannot re-use old staples, but the possibilities which it opens for control of intonation, response, and tone will repay the effort. The art of staple design has nearly been lost, through today's standardized staples for an oboe which is also much more standardized than those of the baroque period. Rediscovering this art is perhaps the longest and most complicated aspect of baroque reed making.

Baroque oboe makers

One of the most important variables in reed making is the bore to which the reed is attached, i.e. the oboe. At the moment there is a great need for more makers of good baroque oboe copies. There are currently very few makers in the world, all hard-pressed to meet a mounting demand. For those interested in knowing more of these makers, here is a list of those known to me:

Pieter Dhont, Royaards van der Hamkade 93, Utrecht, Holland. Copies of oboes by Terton and other Dutch makers.

Andreas Glatt, Kerselareveldstraat 14-A, B-1743 St. Martens-Bodegem, Belgium. Copies of oboes by Steenbergen, etc.

Paul Hailperin, Iglaseegasse 17, A-1190 Wien, Austria. Copies of oboes by Paulhahn, Denner, etc.

Friedrich von Huene, 65 Boylston St., Brookline, Mass. 02146, USA. Copies of oboes by Rottenburgh and Denner.

Frederick Morgan, 85 Johnston St., Collingwood, Australia 3066. Copy of an oboe by Stanesby.

Heinz Rössler, D 2240 Heide in Holstein, Postfach 1648, West Germany. Copy of an oboe by Klenig.

Bernard Schermer, Goethestrasse 13, 8712 Stäfa, Switzerland. Copies of an oboe by Schlegel.

H. A. Vas Dias, 2519 McCurdy Way, Decatur, Ga. 30033, USA. Copies of oboes by Denner and Stanesby.

Most or all of these makers have long waiting lists. For those needing an oboe in a shorter time, two- and three-keyed oboes are made by other firms. These are not usually, however, exact copies of early instruments, as the bores and finger-holes have been altered (among the changes being a modern reed-well, necessitating the use of modern staples, and altered dimensions to allow playing at a = 440). They are nevertheless useful for developing the technique necessary to play later on more faithful copies.

See also makers listed in the *Register of Early Music*.

Cane suppliers

Oboe cane of 14-15 mm. diam. can be ordered by the kilo from: François Alliaud, 224 rue de la République, 84310 Morières-les-Avignon, France.

Dante Biasotto, Route de Boron 83, Fréjus, France.

Albert Glotin, 15 rue du Progrès, 95460 Ezanville, France. (14 mm. only)

[1] I am indebted to many people for help and ideas on reed making, and have learned especially from Hansjürg Lange (from the bassoonist's angle) and Pieter Dhont, without whose help this article would not exist.

[2] For instance: Bas, Louis. *Méthode Nouvelle de Hautbois*, Enoch & Cie, Paris. Rothwell, E. *Oboe Technique*, Oxford University Press, London. Sprenkle, R. and D. Ledet. *The Art of Oboe Playing*, Summy-Birchard. Stein, K. *Rohrbau für Oboen*, Bote und Bock, Berlin. Stotijn, J. *De Kunst van het Maken van Hoborieten*, Molenaar.

[3] The most useful and detailed of written sources are: Banister, J. *The Sprightly Companion*, 1695. Brod, H. *Méthode pour le Hautbois*, *c.*1826. Garnier, J.-F. *Méthode Raisonée pour le Hautbois*, *c.*1800. (For a very interesting review of Garnier's reedmaking instructions and a reproduction of his plate of tools, see Thomas Warner's 'Two Late Eighteenth-Century Instructions for Making Double Reeds', in *GSJ* XV.) Garsault. *Notionaire ou Mémorial Raisoné*, 1761, pp. 627-628. Hotteterre, J. *Principes de la Flûte . . . et du Haut-bois*, 1707. Talbot, J. Oxford Christ Church MS. 1187, *cfl*1698. (See Anthony Baines's article on this MS. in *GSJ* I.)

Illustrations of early reeds include: Diderot, D. and J. le Rond d'Alembert. *Receuil de Planches*, in the *Encyclopédie*, 1765, V, plates VI, VIII, and X. Garsault, *Op. cit.* Reproduced Pt. 2. Anon. (German), Portrait of an Oboist, early 18th century. In the Staatl. Institut für Musikforschung, Berlin. Reproduced Pt. 2.

[4] The average width of modern English horn reeds is 8 mm. Many baroque oboists are now using a tip width of 9 to 10 mm. There are indications that such a width was common in the baroque period, both from the sources listed in footnote 3 and from surviving late 18th-century reeds.

[5] See Borjon, Ch.-E. *Traité de la Musette*, 1672, p. 19.

[6] Garnier, *op. cit.*, p. 7, fig. A and Diderot, *op. cit.*, pl. X, fig. 15.

[7] Cf. Garnier's advice on gouge size, p. 6: '. . . its curvature is proportionate to that of a piece of cane split lengthwise in two'.

[8] Garnier, *op. cit.*, p. 7, fig. B.

[9] Diderot, *op. cit.*, pl. VIII.

[10] Garsault, *op. cit.*

[11] Several players have recently been experimenting with 'bulge-bore' staples, i.e., staples with a belly rather than the straight conical bore described here. (Fig. 10) The idea comes from baroque bassoon crooks, which are apparently always 'bottle-shaped'. What works for the bassoon might work in miniature for the oboe staple. Experiments indicate that this system can help the response of the upper g″ and the low f+′, g′ and a′. It has the advantage that it allows the bottom of the staple bore to be narrower while maintaining a wider conicity, which could help the response of the high notes. The bellied staple can also be used in connection with a very large top diam. (about 3.2 mm.) if the opening is quite flat. It is certainly more complicated to make. More experiments in this direction could be productive, although there are no known early staples which are made in quite this way.