TROMBONE TECHNIQUE

Denis Wick

This updated and revised edition of the classic "Trombone Technique" is available exclusively from www.deniswick.net

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INTRODUCTION

The trombone has for me always been a source of endless fascination. I hope it will remain so! Its enormous range of tone colour, its capacity to express so many kinds of musical emotion – solemnity, warmth, brilliance, brashness, nerve-chilling starkness, comfortable good humour, or even sheer comedy – give it a unique place in the orchestral palette.

It has always been – and will remain – a difficult instrument to play really well; it demands lasting devotion and needs a thoroughgoing musician behind it.

Trombones are found in almost every conceivable musical combination providing an inimitable quality, whether it be the rasp of the Dixieland bass-line or the glow of the orchestral pianissimo chord. The instrument undoubtedly has a high place in the public attention. Even the most casual observer will recognize the trombone when it is seen it in band or orchestra; cheerful familiarity when the 'sludge-pump' or 'kid-shifter' have endeared it to generations.

The last few decades have seen a big improvement in playing standards, and from the fine examples of a few pioneers, notably in the field of jazz – the late Tommy Dorsey and Glenn Miller come to mind – has come a changed attitude to the trombone in all realms of music. From being primarily a noise-maker, except in the hands of a very few good players, the trombone has now won universal acceptance as a subtle, expressive and almost vocal instrument.

The embodiment of all these desirable features can be found in the many fine trombone sections in symphony orchestras on both sides of the Atlantic; the standard of studio trombonists is just as high, although their aims are very different. I believe that in whatever musical environment, the following pages will be of at least some use to every trombonist; even the very best performers may not be fully aware of the mechanics of playing. If they smooth the way for some students, help the older player who finds in mid-career that his or her playing has suddenly gone wrong, or even stimulate argument among trombonists, then I shall be satisfied.

Author's note, 2004. The foregoing was written in 1970. Since then, the world of the trombonist has changed dramatically. Although there have always been good players throughout the history of the trombone, there are now far more of them in every field of activity. The greatest improvement has been among amateur trombonists, especially in the world of the brass band in UK and northern Europe. Professionally, standards of playing are now incomparably better everywhere. The trombone is now taken more seriously as a solo instrument internationally and each new generation seems to push forward the frontiers of performance. More solo material continues to be written and performance demands that would have been unimaginable 35 years ago are now considered normal. I believe that we are now in what must be a golden age of the trombone.

1: THE INSTRUMENT

Choice of instrument - 2005

A trumpeter, horn-player, or tuba player might conceivably use the same instrument for band, symphony orchestra, big band, jazz group, or any other form of work. For the trombonist, however, these fields have such different requirements that he or she must provide a different kind of sound for each of them. Each size of instrument needs a mouthpiece which is properly suited to it, and which will not necessarily suit any of the others.

Here are lists of the trombones recommended for various types of playing. They are all made by well-known manufacturers, and the choice of instrument is really more a question of taste (and cost!) than anything else.

Beginners:

Medium bore - Bach, Blessing, Conn, Courtois, Holton, Jupiter, Kanstul, King, Olds, Weril and Yamaha all make beginner instruments of excellent quality and competitive price.

Symphony:

Large bore (0.547" or 13.89mm) - All the above makers produce large-bore trombones which are the usual choice for orchestral playing. Although not ideal for beginners, large-bore trombones are best at making a rich, smooth and powerful sound and are also often used in brass ensembles and bands. Some players prefer slightly smaller medium-large (0.525" or 12.9mm) configurations, mainly for solo playing. A combination of the two, with the lower slide section having a larger bore than the upper section is a "new-old" fashion, sometimes even using a normal large-bore top slide with a bass trombone lower section – German trombones were almost always made like this. In adition to the makers listed above, there are smaller specialist trombone makers who offer made-to-measure instruments of very high quality; in UK, Michael Rath, in USA Edwards, Gary Greenhoe and S.E.Shires. There are also several smaller excellent firms in Europe. By the late 1990s great improvements had been made to the traditional rotary valve designs for both tenor and bass trombones, giving a more even response in all registers.

Big band/Studio/Jazz:

All the makers listed above including the specialist smaller companies offer excellent trombones for this kind of work. Bore sizes are slightly smaller than for symphonic work, around the 0.500"- 0.508" size. These are, of course, ideal for microphone work when flexibility and sweetness of sound are more important than ultimate volume. There is endless competition to produce better instruments and new research continues to bring out even more responsive trombones, although many players still prefer the old designs from King (2B, 3B) and Conn (6H).

Brass band:

1st trombone medium/large bore as above, 2nd trombone large bore instrument. Many brass band trombonists use symphonic trombones, which play very well, but which have a sound too similar to the baritones and euphoniums in the band . In the author's view, the

slightly more compact tone quality of medium-large bore instruments work more effectively in the brass band.

Bass trombones:

These have increased in complexity and size in recent years, and are made by all the makers listed above. There has been a trend to use bass trombones of greater bell diameter and darkness of sound. Although there are occasions when such instruments can justify their size when playing very loudly, for most professional and amateur purposes, standard models with 9" bell and 0.562 bore are to be recommended.

Alto trombones:

Bach, Conn, Courtois, Finke, Glassl, Latzsch, Weril, Yamaha all make good alto trombones. My personal choice is the old German dual-bore type, which almost all the above makers produce. When choosing an instrument for a young player, it is important to consider these main points:

- suitability of type of instrument
- quality of the instrument when new
- present condition of the instrument, regarding playing qualities, mechanical efficiency and appearance
- price.

I can hardly over-emphasize the importance of securing the advice of a good player or teacher. Such a person will almost certainly advise the selection of a second – or for that matter tenth-hand - good-quality trombone, provided that it is in good working order. This is invariably a better choice than a cheaply-made, shining, polished, and lacquered instrument of low quality which will depreciate in value very quickly.

Assuming that the beginner has already begun playing, possibly on a school instrument, so that he is not a complete novice, then the most economic purchase would be a medium-bore top-class instrument. This would last until he becomes competent enough to use a professional, large-bore symphony trombone. (If he does not get that far, then he need never buy another trombone.) If his career points towards lighter music, then this first purchase will take him all the way!

The general condition of the trombone should be carefully checked. If the bell is held 3 inches below the bell-stay at a point where it is about 2.5 inches in diameter, and rotated gently, previously invisible irregularities in its shape may appear, indicating that possibly many generations of dents have been removed, thereby standing to stretch the metal. A good check on the slide is to hold the instrument vertically with the unlocked slide touching the floor. Raising the left hand will show if the slide is sticking. Dents in the outer slide – more readily detected through a piece of thin, silky cloth – may be quite easily removed by a good repairer (often hard to find). If the slides are 'out of true', a professional repair is necessary to line them up again. Worn plating on the inner slides usually indicated heavy wear on the softer outer slides. In this case repair is difficult, if not impossible, and the parts generally need to be replaced. If this is the case, it would be better to look for another instrument. With the slide section detached, place the thumbs over the ends and hold in a vertical position with the outer slide released. The outer slide section should fall very slowly if the slide is reasonably airtight. Always check the slide action in the playing

position as well as vertically. Do this firstly dry, then again when lubricated with cold cream and water.

Playing tests

Check the intonation carefully, making sure that the middle and upper Fs are not too sharp or the D above middle C and high Bb too flat. Careful selection and fitting of the mouthpiece can minimize this problem. Most trombones have two notes that are likely to give trouble; high Ab, and top D. Make sure that they 'ring' and have no tendency to rattle or crack.

When trying a trombone with an F valve, make sure that the marks on the inner valve-casing line up. If they do not, it is a comparatively simple matter to fit new corks. A badly-fitted rotary valve can make a trombone feel very 'stuffy' and can needlessly prejudice the player against it.

A well played, well used trombone is always to be recommended, provided that it is not worn in the way I have described. A new trombone may not, at first acquaintance reveal its full potential. It may need up to six months' use to 'run it in', to develop a rich sound and all-round smoothness. New instruments usually have a rawness and roughness about them that should to some extent be disregarded.

Choice of mouthpiece

Although there is a mystique about mouthpieces which makes even the most experienced players and teachers hesitate to give a definite opinion, I feel that I should at least offer mine, controversial though it may be, based on the experience which I have been able to gather.

Some mouthpiece characteristics are related to the individual player. Most, however, relate to the instrument with which they are to be used. These are: cup depth, cup curvature, and breadth; shoulder, and taper of throat, taper of back bore, and – very important – distance of projection. Personal considerations are the diameter of the cup and the shape of the rim. Even these personal preferences for a particular rim-shape or cup size can be carried too far. Human flesh can adapt to almost anything! In recent years it has been increasingly understood that the bulk of the outside shape creates a previously unconsidered effect. A heavier mouthpiece gives slightly more volume, especially at a distance, but much less sensitivity, ie. feedback to the player.

A wide range of mouthpieces is available today. Each manufacturer supplies with each of his instruments a stock mouthpiece which is intended to complement the instrument. Most unfortunately prove not to be good enough for professionals. It is worth realizing that at least 90 per cent of the production of most makers goes to amateurs, schools, brass bands, and the like; it is only natural that the mouthpiece supplied with a particular trombone should be as easy and responsive as possible for a beginner. The ultimate potential of a trombone can rarely be achieved with a stock mouthpiece, even in the hands of a good professional player – usually the lower register and upper dynamic levels suffer considerably.

Most professional trombonists either use a mouthpiece which they have adapted from such a stock model, or go to a specialist mouthpiece-making company to select what is for

them the ideal mouthpiece, depending upon the instrument they use and the work they have to do.

Many of the large instrument makers produce their own lines of mouthpieces. By the 21st century, production methods have been refined so that previously unachievable standards of accuracy can be maintained, through the use of modern computer-controlled lathes. Mouthpieces made in past decades, even those from major companies, have been unbelievably inconsistent; long production runs resulted in wide disparities. One famous manufacturer was said to be consistent only in the stamping of the model-type!

Most mouthpiece makers carry a stock of several hundred mouthpieces of different sizes and for every brass instrument. Such a wide choice of mouthpieces puts before the student or young player endless temptations to change and experiment. Each model has a tempting description that sounds to the unsuspecting purchaser as if it could solve all his or her problems! Of course this cannot be true.

Having needed to find solutions for the particular problems which faced British trombonists in the 1960s and 70s, mainly related to the poor acoustics of our London concert halls, I began to design trombone mouthpieces. From small beginnings in 1967, this has grown to more than 100 types, for every kind of brass instrument, not just trombones . Although my trombone mouthpiece designs were intended for (professional) orchestral use, they have been taken up by the many thousands of amateur players. The concave outer shape which was designed to give some kind of individuality to the appearance of the mouthpieces actually works in a positive way to enable the player to hear more clearly what he or she is doing. My feeling is that more exterior weight can help to make a darker sound more easily, but without this extra help, the player must do it for him or herself! The subtle configurations of rim, cup, throat and backbore can be designed more carefully if there is not too much help from a greater exterior bulk and the player soon instinctively plays with a more open throat. I believe that the most important function of the mouthpiece is, above all else, to give a full rich even tone throughout the entire register of the trombone, and to offer the best intonation compromise. The more experienced player will find that it will help to produce an ideal sound.

Although there are now many more mouthpieces available today, trombonists (especially those without much experience) should avoid the temptation to experiment. A new mouthpiece is not a substitute for careful practice!

Suggested choices of mouthpiece

- *Beginners:* Denis Wick 9BS, 6BS or Bach 6½AL
- *Brass Band*: DW 9BS, 6BS, 5BS, 4BS; or large-bore fitting: 6BL, 5BL, 5ABL, 5AL, 4BL, Bach 6½AL, 5GS
- *Orchestral:* (large bore) DW 6BL, 5BL, 5ABL, 5AL, 4 ½AL, 4BL, 4AL; Heavytop 5AL, 4.5AL Bach 6½AL, 5G, 4G Schilke/Yamaha 51, 52
- *Studio/Big band:* 7CS, 10CS, 12CS, Bach 11C, 12C

Still the best advice one can give to a young player is to seek the help and guidance of a good teacher to find a good mouthpiece, making sure that it suits first the instrument, then the player and then to stick to it! It is a good idea to keep two identical mouthpieces, just in case of accidental loss. It is worth pointing out that what suits the teacher well may not necessarily suit the student. Slavishly copying what the teacher uses is hardly ever a good idea.

It may not be obvious to the beginner, but changing mouthpiece has a catastrophic effect on young unformed embouchures. The complex muscular structures must build slowly over a period of months or years. Changing mouthpiece rims confuses them.

If it is necessary for the experienced trombonist to alternate between several instruments, a possible solution is to have detachable screw-rim mouthpieces, so that the same rim may be used when other parts are changed. I formerly advocated this idea, however, experience has shown this brings its own problems; for instance, bass trumpet or alto trombone need a much smaller cup-size. I solved the mouthpiece-changing problem when I was able by modern manufacturing techniques to produce the same rim contour on different diameters, making the mouthpiece/instrument interface the highest priority, but minimising the disorienting feeling of change.

My own solution was:

- 1st trombone - 5AL/5ABL
- Euphonium - 4AL
- Alto trombone - 10CS
- Bass trumpet - 7CS

Finally, the mouthpiece *must* fit properly. Too much projection can make the flat-tending notes too flat in relation to the other notes on the instrument, too little projection may cause the sharp-tending notes to be too sharp. A good compromise, with just the right amount of projection, will not only give the best intonation, but also seems to make the trombone respond better generally.

For big-band work – clear, high register playing – select a smaller cup diameter (31/32in. or 24.5mm) with narrow bore and fairly shallow cup. For brass band playing and smaller orchestras, a slightly larger diameter (about 1 inch) and deeper cup. For large symphony orchestras, a rim diameter of not less than 1". and probably 1 1/64-1 1/32 inches (25.5-26mm) is to be advised, with a deep cup and larger throat and backbore (to be used in conjunction with large bore symphonic trombone).

To improve the high register, use a narrower, shallower cup, and smaller bore (this gives more 'edge', more precision, less roundness).To improve the low register, use a narrower, shallower cup, and a wider cup diameter. This gives a darker sound.

For bass trombone, a cup diameter of 1 1/32-1 1/16 inches (26.3-27mm) with a really deep cup should be selected.

Many players use mouthpieces that are too small, but are often reluctant to try a larger cup-diameter because they are afraid of losing their upper register. Once they have taken the plunge and changed to a bigger cup-diameter the weakness in the high register, which may indeed be expected, is quite short-lived. After a short time, in fact, the higher register may even be better than before. This is an added bonus to the increase in richness of sound, volume and flexibility which occur when such a change is made.

Author's note, 2005. Over the last 34 years this has largely happened.

If this idea is carried to excess, and really large (bass trombone) mouthpieces are used with large-bore trombones, some highly undesirable results may be caused. The large volume of sound thereby produced is naturally full, dark, and rich, and, while notes in the

high register may project reasonably well, the timbre produced by an instrument so equipped at low dynamic levels is most uncharacteristic. Also, from the teacher's point of view, it is often difficult to detect embouchure faults if they are masked by the use of an over-large mouthpiece and I have often found it necessary to recommend a smaller one to some of my own students. One should always seek the advice of an experienced player, but as a general guide I would suggest a maximum diameter of .26mm. Assiduous long-note practice and the use of a metal practice mute (qv) can often improve tone quality to such an extent that the tone-quality produced with a medium-sized mouthpiece usually surpasses that produced by an extra-large one, which, by restricting the upper overtones, can sound too euphonium-like, often hiding a less than perfect embouchure.

Many brass players prefer gold-plated mouthpieces because of the hypo-allergic properties and the appearance and extraordinarily 'soft' feel of gold-plating. I used this finish on my own mouthpieces for many years, and found that the ultra-smooth surface helped flexibility. Many players, however, prefer silver plating because it seems to "grip" better. Any plating will, however, wear eventually: silver reacts to mouth acids, and although gold does not, it is much thinner than silver and much softer. When the plating gets worn, the mouthpiece can be replated, after the rim has been polished. Great care must be taken not to alter the contour of the rim during the polishing process. It is probably easier (and cheaper!) to replace the mouthpiece.

German Trombones

Players of the German school used traditional instruments which have a completely different response, tone quality, and 'feel' from trombones made throughout the rest of the world. Although there are excellent trombonists in the great German orchestras, they often achieve their results in spite of their instruments, not because of them! For German trombones tend to have a soft, dull, warm quality of sound, which in loud playing 'breaks up' at a much lower dynamic level than, say, American instruments, which are more resonant at softer levels, and tend to maintain the same kind of tone quality from *ppp* to *fff*.

The bore size of German instruments is generally small, but bells are always very large – 9 or 10 inches are not uncommon. The metal used is generally softer, less work-hardened and 'springy' than other trombones, and the most noticeable characteristics are unwieldiness, heavy slide action, and a not particularly good high register. From these remarks it must be understood that although it is *possible* to play very well indeed on these instruments – many players have done so – for the player who is used to a more manageable instrument they present problems. I should add, however, that international standards of instrument development and manufacture are constantly improving, and the present-day German instrument, which is actually the progenitor of the typical American symphony trombone, is already being 'Americanized' to give better slide action and balance.

The customary mouthpiece for use with the German-type trombone was rather small with a narrow bore. A mouthpiece of this type was needed not to provide roundness, solidity, and resonance, but to help the high register and generally to brighten the rather dull character of these instruments.

Author's note, 2004: The old German trombone types have now largely disappeared.

French trombones

The style of trombone-playing in France has been unique but has now become more international.

The many fine French trombonists have now just a hint of the traditional characteristic narrow-bore sound and vibrato, There is, as ever, an extremely high standard of playing and a wide recognition of the trombone as a solo instrument in France. The Paris school of playing, notably from the great teacher André Lafosse has influenced trombonists worldwide. French instruments were always of high quality and very responsive. The modern large-bore Courtois trombones are rather similar to American Bach designs, but possibly lighter in sound and easier to play.

American trombones

These are considered excellent from all points of view by a large majority of players and are used in every form of musical activity throughout the world.

British trombones

In Britain the many small firms that at one time competed in the manufacture of brass instruments have either disappeared altogether, or have now amalgamated with the Boosey & Hawkes group, the only British company now making trombones, but under the trade name 'Besson'.

Over recent years the quality and design of Besson trombones have improved enormously. Their instruments can now compare in ease of playing, sound quality, and workmanship with those of any other maker. Like musical instrument manufacturers throughout the world, Besson have responded to the challenge of the comparative newcomers, Japanese Yamaha company, and the resulting competition to produce better trombones has meant improved quality, greater consistency, and in some cases, a wider choice of instruments.

Author's note, 2006. Besson trombones are no longer being produced Boosey and Hawkes now exists only as a music publisher.

Japanese trombones

The enormous resources of the Yamaha Company have brought about the design and manufacture of a whole range of trombones in various qualities from comparatively cheap beginners' instruments to expensive 'custom' models for professionals. This kind of competition has put other manufacturers in USA and European countries on their mettle, resulting in a general increase in quality control, and greater readiness to respond to the specialized needs of trombonists – all to the benefit of the player.

Chinese and Indian Trombones

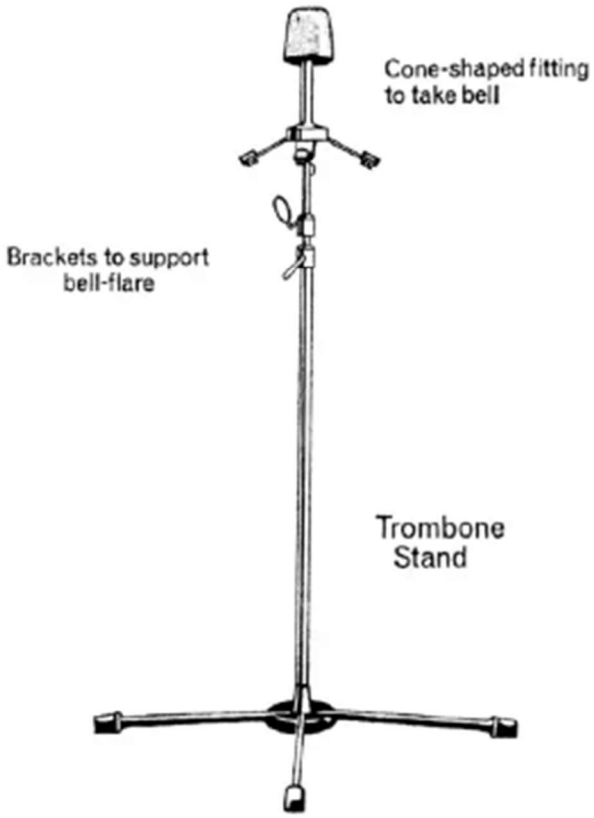
Cheap labour costs and internationally available technology have made possible surprisingly good instruments from India and China, currently aimed at the beginning student market. Different makes vary very much in quality, however, and the instruments need to be thoroughly vetted.

Care and maintenance

Most professional players are constantly on the lookout for new instruments – new models from the best makers, or new examples of the model which they already use. This does not mean that they are dissatisfied with the instrument which they already have, which is probably well tried and tested, possibly several years old, and regarded as an old friend. But there is always the feeling that the old instrument may be lost or stolen, leaving a gap which could be very difficult to fill. Although the best makes are fairly consistent in their high quality, there are slight variations and professionals prefer to pick their own instrument from a dozen or so similar ones.

When you have found a good trombone for your particular needs, take care of it! So many times one sees during rehearsal intervals, trombones resting on chairs or even on the floor. This seems to me to be particularly foolish – the unwary foot or careless knock can cause havoc with slides and disfigure bell-sections. Modern trombones tend to be made with fairly close tolerances between inner and outer slides. The slightest knock may render a fine instrument useless – perhaps the slide will move, but it will be impossible to play with any kind of artistry, and legato playing in particular will be seriously impaired. I strongly recommend the use of stands or rests for trombones so that they may be properly placed out of harm's way when they are not being used. They are made so that the stand itself supports the bell of the trombone, whilst the slide rests on the floor.

Even if these stands are used, accidental knocking of the end of the slide on music stands or chairs can cause similar damage. Unfortunately the small dents at the end of the slide will affect it when returning to the first position, thus making most of one's playing very difficult. It is really surprising what poor slide action one can become used to. I can hardly over-emphasize the bad effect it can have on one's playing. Any small dents must be removed as soon as possible by a competent repairman.



There are basically two systems of slide lubrication; cream and oil. I have always used an excellent siliconized cream with the brand name 'Superslick'. It is used in conjunction with a specially produced light oil. The cream is applied sparingly to the end of the inner slides and one drop of the oil is added to each slide. The mixture should be carefully and evenly rubbed in. The inner slide then needs to be sprayed with a fine atomized spray of water.

There is also a slightly different system "Slide-o-Mix" which achieves a similar result by using different emulsified oils instead of cream and oil. This form of lubrication seems to work particularly well on very worn slides, but it seems to wear off faster than the "Superslick" cream. Personal preference and saliva acidity would probably influence choice.

New instruments never play as well as old ones in good condition. Almost every new trombone I have played exhibits a kind of rawness and hardness. After a period of use they seem to improve in the way that the owner needs most – the high register becomes more reliable, the low register more full, and so on. The probable explanation of this is that there is a slight molecular movement in the bell, to accommodate the various frequencies that are most used.

One rather extraordinary incident illustrated this very clearly. One of my students had just purchased a new Conn trombone, the model 6H. After he had played the trombone for a week he complained that there was no high D on it. To satisfy my curiosity I took the instrument and played high D about twenty times, at all dynamic levels and eventually as loudly as possible. When I handed the instrument back to him, it played high D for him too! Some months after this incident he thanked me for 'putting the D on to his trombone', and said that it had never let him down! While some of this at least may be psychological, these are the facts as they happened, and the settling down of the molecular structure may be a possible explanation.

To overcome the 'newness' of a new trombone, I have heard it suggested that stale milk should be poured through the instrument, in order to coat the inside. This revolting procedure undoubtedly works; but even rinsing with water will have a similar effect. (Personally, I have never found such procedures necessary).

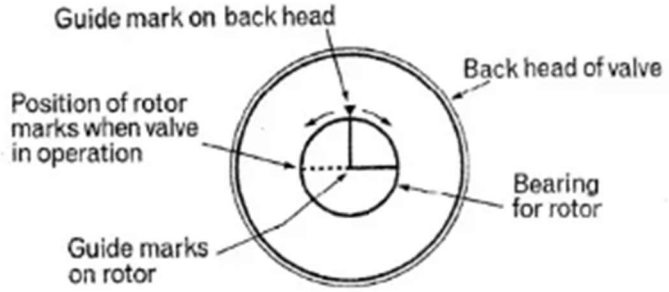
Author's note, 2004 Cryogenic treatment, freezing a trombone to –200 centigrade, then slowly restoring it to ambient room temperature, has been shown to give an immediate improvement to sound and response.

It is important not to leave trombone slides wet when they are being stored. Electrolytic action can cause corrosion and almost as much wear as ordinary use.

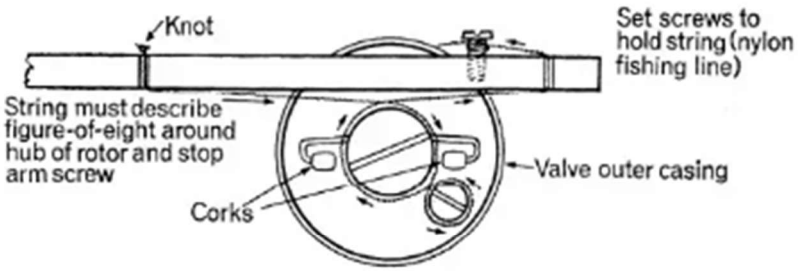
I have often been asked 'should one choose a lacquered or a plated instrument?' Lacquered instruments are usually preferred by professional players in all fields, though at least one authority (Renold Schilke – Chicago) said that properly controlled silver plating is thinner than lacquer and is less likely to affect the characteristics of the instrument. I have one interesting experience in this connection. My old Conn 8H trombone was relacquered by a London firm (now out of business) which guaranteed that their lacquer was virtually indestructible. So it was. But they forgot to add that it was as thick as two or three coats of paint! The effect was to spoil the playing of the instrument completely. The characteristics which had made this trombone the envy of many professional colleagues – a warm glowing sound in *pp* and *mf* and rich brilliance in *ff* – disappeared, leaving an instrument that could easily be mistaken for an inferior make. After some thought I succeeded in removing the lacquer from just the bell-flare, using a chemical solvent. When cleaned and polished the trombone played better than it had ever done. I then had the recurrent chore of polishing the red-brass bell, but the quality of sound made it worthwhile.

As many manufacturers state in their instructions, deposits of food particles, dirt, etc. should never be allowed to build up in a new (or old!) trombone, and everyone should

clean out his/her instrument with warm water, and a flexible brush every week (such a brush is obtainable from most dealers – or one can easily be made with flexible curtain wire and a piece of lint-free rag). The mouthpiece should similarly be brushed out daily.



Rotary valves should be cleaned out with recommended manufacturer's lubricant before there is any possibility of 'gumming up'. The usual procedure is to clean the moving parts with plenty of oil, dry off any excess oil, then lubricate very sparingly. The guide marks on the back of the valve should be checked. If they are out of alignment (see diagram) the cork or neoprene stops on the front of the valve should be inspected for wear, and if necessary renewed, making sure that the marks now line up. As it is eminently possible for string or cord to break on string valves, the following diagram will show how these should be refitted.



Gig bags

Several manufacturers now produce a soft, padded case as an alternative to the rigid and fairly heavy case which has always been thought necessary to provide adequate protection for the trombone. These so-called 'gig bags' are a boon to commuting trombonists, but need to be handled very carefully since they naturally cannot protect the instrument as well as a conventional fitted case.

2: POSITIONS AND EMBOUCHURE

Holding the trombone

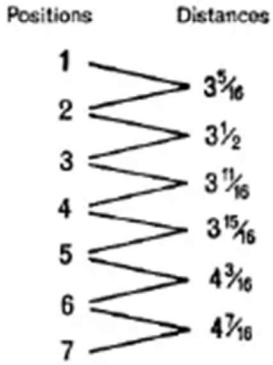
The trombone is usually held at an angle of about sixty degrees to the vertical. The left hand must support the entire weight of the instrument. This may seem very difficult, if not impossible, to the beginner; to him the instrument may seem much too heavy to be held in this way. Most trombones made today are very well balanced, however, and when in a playing position will 'sit' in a perfectly natural and easy way in the left hand. Supporting the weight of the trombone with the right hand will cause premature wear of the outer slide and distort the inner slide, as well as possibly giving rise to bad intonation. In order to hold the instrument more steadily, the index finger of the left hand is extended and presses against the mouthpiece. This considerably improves balance and stability. The player's body should be erect, with the seat well back in the chair. The legs should not be crossed. The whole bodily attitude should be alert and poised, but not tense. The standing position is similar, with shoulders back and head upright.

The slide should be held firmly but lightly by the thumb and index finger of the right hand. Other fingers may support the index finger. The hand and wrist should always be in the same plane, with the elbow doing most of the work. Excessive wrist movement should be avoided (see photos below). This does not mean that the slide action should be at all jerky, but rather that the wrist should not 'flap about', which can create serious problems.

Movement of the slide should be made very gently, never too fast, too jerkily or with more force than is necessary. The aim should be fast acceleration but sensitive braking.

Positions

There are seven positions of the trombone slide: the first position has the slide closed, the seventh position is at the far end of the slide. Here in the last five inches of the inner slide, it expands to a slightly larger diameter to form the 'stocking' which acts as a bearing for the outer slide. Fourth position is related to the bell of the trombone, but the second, third, fifth, and sixth positions are located between the others with no visible indication of exactly where they should be. The distances between the positions become progressively greater so that there is a difference of about 1 1/8 in (3mm) between 1-2 and 6-7. One well known US authority (Mark McDunn) gives the distances between positions (in inches) as shown to the right:



These were checked with a stroboscope and apply to the instrument that Mr McDunn uses. Other makes of trombone may vary slightly, but these are the kinds of measurements that one is likely to find on most trombones.

The following illustrations show possible variations of right hand position. There are two basic systems. One pivots at the wrist, one at the fingers. Both 1st and 7th positions are reached in exactly the same way with either system.

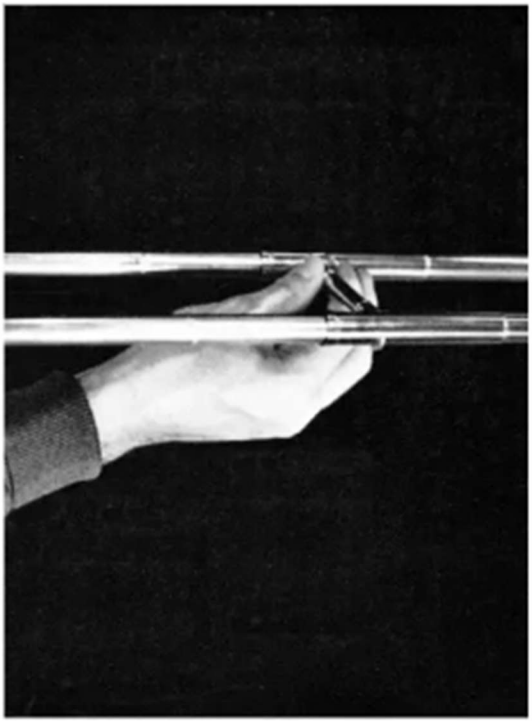
1st position

4th position with wrist straight,
fingers pivoting

4th position with wrist at an angle,
relative finger position unchanged

6th position with wrist straight,
fingers pivoting

6th position with wrist at an angle, relative position of fingers unchanged



7th position: the need to reach the full length of the slide brings the hand into the same position for either system

The Embouchure

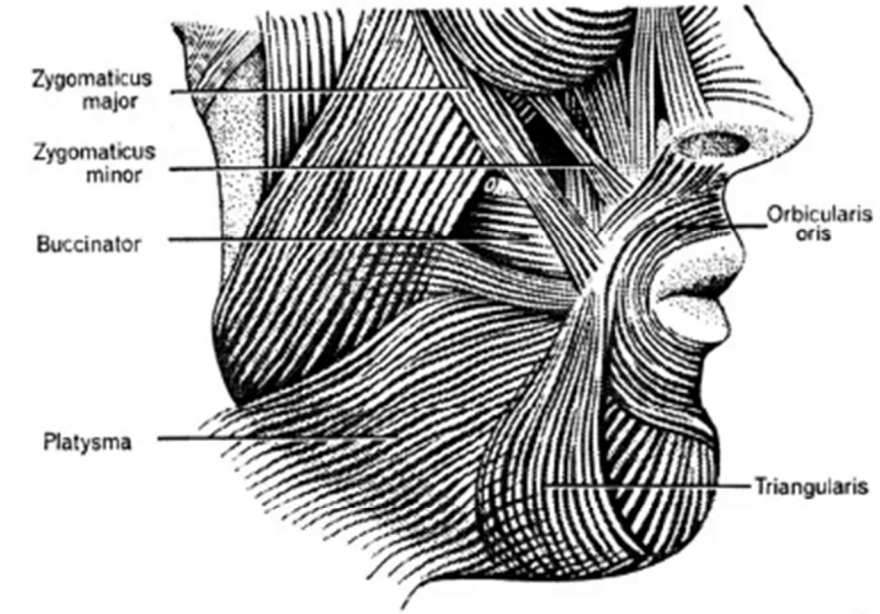
Correct embouchure, demonstrated by the author

Sounds on the trombone, as on all brass instruments are made by the regular vibration of air within the instrument. As the player's embouchure, which produces this vibration, is easily the most important part of his equipment, let us consider precisely what happens.

If the lip surfaces are to vibrate, they must be held in a state of controlled tension. To achieve this, it is generally agreed that the lips should be pouted and pursed as in whistling. They are held in a controllable position by a very gentle tending of muscles surrounding the lips themselves; these muscles pull in the *opposite* direction, ie. outwards.

As the diagram below shows, the muscles surrounding the lips form a very complex structure, which by subtle co-operation allow the lips to vibrate in a controllable manner within the confines of the mouthpiece. The important muscles are the orbicularis oris, surrounding the lips themselves, which are subdivided into many muscles which are capable of changing considerably the shape and contours of both upper and lower lips. The muscles which work in conjunction with the orbicularis oris are: the triangularis, which pulls the mouth-corners down and slightly sideways, the platysma which depresses mouth-corners and lowers the jaw (as in yawning), the buccinator, which pulls back the mouth-corners,

flattens the cheeks, and keeps the lips taut, and the zygomaticus, which raises the mouth-corners and draws them to the side (as in smiling and laughing). All this is necessarily involved and complicated to express, and few people outside the medical profession would understand it sufficiently to form a good embouchure: luckily it is not necessary to be so technical.



I believe that for an ideal embouchure the easiest, most natural methods should be used. To begin with, the lower jaw should be pushed forward until the teeth are opposite, and arched slightly downwards. With the lips pursed, as in whistling, they are buzzed by pressing them together gently while blowing air between them. The cheeks should not be distended, but allowed to remain in a natural, relaxed position. There should be the merest suggestion of a smile to pull against the pucker.

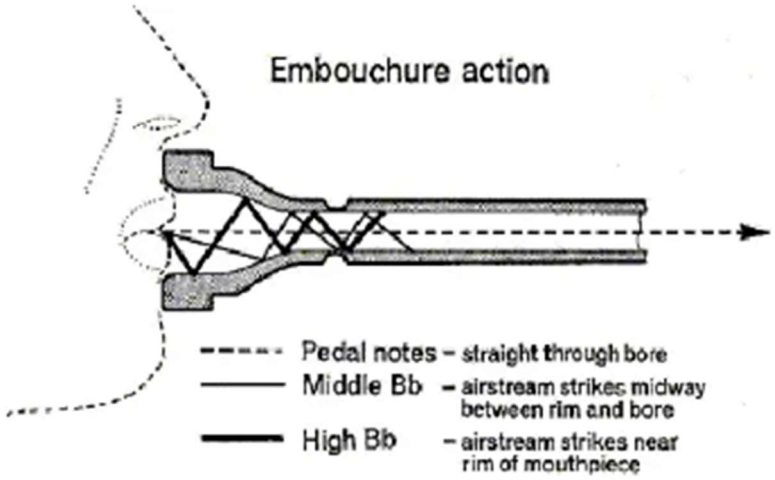
The characteristic embouchure shape thus described is used by nearly all successful trombone players. A general, although not infallible, guide as to whether these ideas are being followed are the characteristic lines which follow the curve of the upper lip and point downwards on each side of the embouchure. Most trombonists' embouchures show this quite clearly.

The over-riding consideration in the formation of a good embouchure structure is that it must sound good and feel good! The lips and their supporting muscles must feel completely natural and relaxed. The foregoing description sounds somewhat complicated, and may even seem difficult to put into practice to begin with; it is, however, the simplest and easiest and most natural method of forming a good embouchure, which will provide easily a rich, full, 'centred' tone-quality on the trombone.

It has often been erroneously suggested and assumed that the airstream, once it reaches the mouthpiece, goes straight through into the instrument. This can easily be disproved. In the great majority of cases, the air-flow is not, as might be supposed, at right angles to the facial profile, but rather at a downward angle. A hand held out under the chin can easily detect the downward movement of air when the lips are formed into an embouchure and 'buzzed'. (I should add here that there is a very small minority of players of whom the

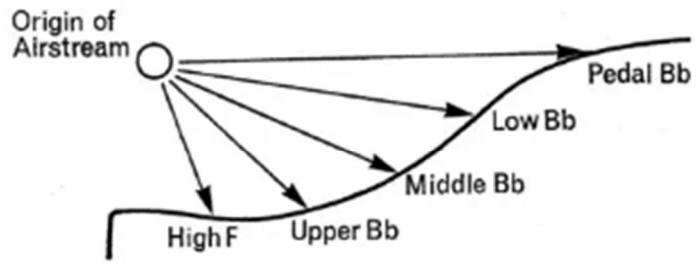
reverse is true; a short upper lip and an undershot jaw may have caused the opposite 'upward' airstream to have been adopted. Very rarely do such players make a success of the trombone. There are just enough of them to prove the exceptions to the rule – the few really fine, mainly jazz players who play this way are to be congratulated upon their very difficult achievement.)

It can be seen quite easily that, as the player moves upwards into the high register of the trombone, he blows more narrowly downwards, eventually playing the highest notes, down almost on to his chin. It can be expressed diagrammatically.



The airstream bounces off the bottom of the mouthpiece cup, finally making a vortex into the bore. Pedal notes are the only ones that seem to go straight into the bore of the mouthpiece. It can readily be seen that the intelligent pointing of the airstream into different parts of the mouthpiece will give, or help to give, a great diversity of range. By altering the shapes of the lip profiles, or, in extreme cases (low register) by pushing out the entire jaw and lower lip, the airflow direction can be changed. In order to facilitate this, I advocate a 'wet' embouchure; I find that this gives greater flexibility than the 'dry' kind and makes sore lips less likely.

This is, of course, by no means the only factor in getting higher or lower notes. As one plays higher, the entire orbicularis oris contracts, rather like a camera lens iris 'stopping down'. The profile of the lower lip also flattens vertically, and the air flowing through the embouchure travels faster. There are several constant, immovable factors; the mouthpiece itself, of course, cannot change; the upper lip remains anchored at its point of contact with the mouthpiece; the corners of the mouth stay exactly as they are. The main movement is in the lower lip and jaw. Although there is a certain amount of movement in the upper lip, this happens within the confines of the mouthpiece. This applies equally to the lower lip, but there is often more activity visible underneath the mouthpiece than above it.



By protruding the lower lip, arching the chin forward and down, and relaxing the muscular tension within the embouchure it becomes very easy to move into the lower register of the trombone. Here the speed of the flow of air is very much slower, although more air is displaced because the opening in the middle of the embouchure is much wider.

To tell a student to flatten vertically the profile of his lower lip, which is what he will ultimately do as he ascends into the upper reaches of the trombone's range, is rather like suggesting that he moves his smallest toe by itself or rotate his left ear! Whereas it may be possible to do these things in time, given the appropriate exercises, they are not likely to occur spontaneously. In the same way, it is sometimes easier to learn these minute lip movements by moving the lower lip bodily back, as one ascends. This is rather like cracking an egg with a sledge-hammer, and is likely to cause extreme sharpness when playing high, so caution and careful listening are needed; once these tiny muscular lip movements within the lips themselves are working, the lips should be kept parallel, and withdrawal of the lower lip forbidden.

By using the methods outlined above, the trombone can be made to move with comparative ease from the lowest pedal notes to notes four octaves above.

Armed with this knowledge, and having pursed his lips, pushed forward his jaw, and 'buzzed' into the instrument, the newcomer to the trombone should be able to blow a not particularly refined note in the middle register, perhaps F, Bb, or D. These sounds will soon assume a more 'centred' quality. The presence of a teacher can save many hours of fruitless struggle, as the student becomes accustomed to using muscles which he has never even heard of, much less used before; at this stage as at most others it is absolutely essential to have the best possible professional guidance.

Even with a few weeks' practice behind him, the young player is not likely to have enough command of the subtle movements of the insides of the lips, especially the lower lip, to be able to use his theoretical knowledge of directing the air into different parts of the mouthpiece. Patient practice of slow, gentle slurs, will teach the muscles on the lip to move for him. In the meantime, again under the most careful supervision, the novice should move his lower lip bodily, as described above, taking care not to exaggerate the movements. When the idea of directing the airstream is a reality, he should try to minimize the amount of movement, keeping the lips parallel in an upward movement, and slightly restricting the downward and outward movements. At the same time he should listen continuously for the best sound quality.

The position of the mouthpiece on the mouth is often a cause for concern among students. Most trombone players place the mouthpiece more on the top lip than on the bottom lip – say two-thirds top, one-third bottom. This usually produces the best results. There are, however, some excellent players who reverse these proportions, and who play too well for their mouthpiece placement to be considered wrong. In my own experience, they include

players with a brilliant tone-quality, which sometimes appears hard. This is only a tendency, though, and they often more than compensate for it in scintillating technique and 'never miss' high register.

Ideally, given an absolutely regular set of front teeth, the trombonist's embouchure should be exactly in the centre of his mouth. The number of players who have this ideal dental distribution is extremely rare, however, and almost all players play fractionally off-centre, some very much so. It is futile for a teacher to insist on moving a student's mouthpiece position to a more central one, except, of course, when it is wildly wrong, unless his teeth are perfectly regular. One of the penalties for young children beginning the trombone is that their short arm lengths make them tend to pull the instrument round to the right shifting the mouthpiece to the side of the mouth to reach the 6th and 7th positions. This sort of misplacement should be resisted, either by avoiding 6th and 7th positions, or, more sensibly, by using a Bb and F trombone, or one of the ingenious double-slide trombones made by Yamaha.

Given fairly normal teeth and lips, the two-thirds upper one-third lower system, with the mouthpiece in a central position, should be given preference when starting to play. But it should not be made a definite rule, for there is always an ideal position for the mouthpiece, which, when it has been discovered, produces conspicuously better results in the tone-quality, flexibility, and clarity of articulation. The sooner this 'ideal position' is settled in a young player's career, the quicker he is likely to make real progress. Actually it can vary a little from day to day, but not more than about 1/8" or 3mm. There is a sensation of inward grip on the mouthpiece which should be actively remembered. The re-creation of these sensations on the lips is, after all, the object of practice, and for this reason progress can be quite fast in the early stages of playing. This presumes a good teacher and regular practice.

There is a natural tendency for beginners to press too hard on the mouthpieces. Before the vibrating and support muscles have been properly formed it is quite usual and natural for this pressure to cause a rather sore-looking red ring. Most professional trombone players will use far more pressure than this on occasion – at the end of a concert, at least. They have had many years to build up a really powerful muscular structure, capable of taking more punishment than that of the beginner. Despite this, however, the best results are never accomplished with heavy mouthpiece pressure, and for the 95 per cent of the time even the toughest professional uses little more than minimum pressure needed for an air-seal.

By practising on the mouthpiece alone it is possible to develop enough embouchure strength to solve the problem. Excessive mouthpiece pressure will effectively prevent progress, by reducing or cutting off the blood circulation of the lips, which like every other part of the body need sustaining with oxygen. Prolonged heavy mouthpiece pressure will bruise the comparatively delicate tissue and cause swelling. Some swelling is, as we have seen, inevitable in a beginner. The most usual problem in my experience is the combination of heavy pressure with a stretched top-lip embouchure. As this seems to occur with depressing regularity among young trombonists, I think it is worth discussion under a separate heading.

One of the most frequent problems that I have met in young students who have been studying for some years without making much headway, is that of stretched lips. Here the top lip, particularly, is stretched by the action of the 'smile' muscles – zygomatic major and buccinator – not pursed as suggested earlier. When the lips are stretched in this way, not only do they become thinner in texture, but the embouchure itself takes on a flatter

contour, oval rather than round. This gives a much harder, thinner sound quality, very restricted in volume and range. In order to hold the lips in shape as the player ascends, he has to press harder upon the mouthpiece. This is sometimes called the 'smile-and-press' embouchure.

It is well known that the only positive function of any muscle in the entire body is to contract. When a muscle contracts it becomes more dense and thus stronger. If the lips are stretched, they are conversely weakened. Although, as we have seen, successful trombonists limit the pressure of the mouthpiece, there is still enough to bring a stretched-lip embouchure to a state of semi-paralysis after even a short playing session. This is only one of the many problems that come from a stretched embouchure: suffice it to say that I have never yet met a really successful trombonist who used this method. I confidently never expect to do so!

Physical characteristics needed by a trombone player

Some of these are fairly obvious, others not so. Here are some suggestions.

- Arms of at least average length
- A top lip which is long vertically
- Regular largish front teeth
- A high roof to the mouth
- A reasonable lung capacity

One should add – a perceptive ear, good natural rhythm, a sense of purpose, and great industriousness. I do not recommend that a child of less than about twelve years of age should be taught the trombone. A certain degree of maturity of body – lip and arm length – and mind are necessary.

It is important, and becomes increasingly so as a player's career develops, that he takes good care of his completely unique and irreplaceable equipment – his embouchure. Regular visits to the dentist are absolutely essential. A sympathetic dentist is worth seeking out. A trombonist's dental problems are not really different form anyone else's, but they may cause a complete breakdown in his playing ability, in the case of a damaged front tooth for example. Regular dental and oral hygiene are, of course, essential. The lips are really very delicate and carefully adjusted complex muscular structures. Even the slightest bruising or injury can cause disturbances that may take days or weeks of careful remedial practice to put right. It has always seemed to me that changes in mouthpiece rim-shape, however small, can cause the biggest problems. I have heard unbelievably bad playing from some of the world's finest brass players when too injudicious experimentation with the mouthpiece had upset the delicate muscular balance of the lips. For this reason, it is extremely unwise to try other mouthpieces or instruments too close to a performance, and this is why it is most unusual for brass to double on woodwind or other brass. I have even heard it said that a really passionate kiss can spoil a trombonist's embouchure for several hours!