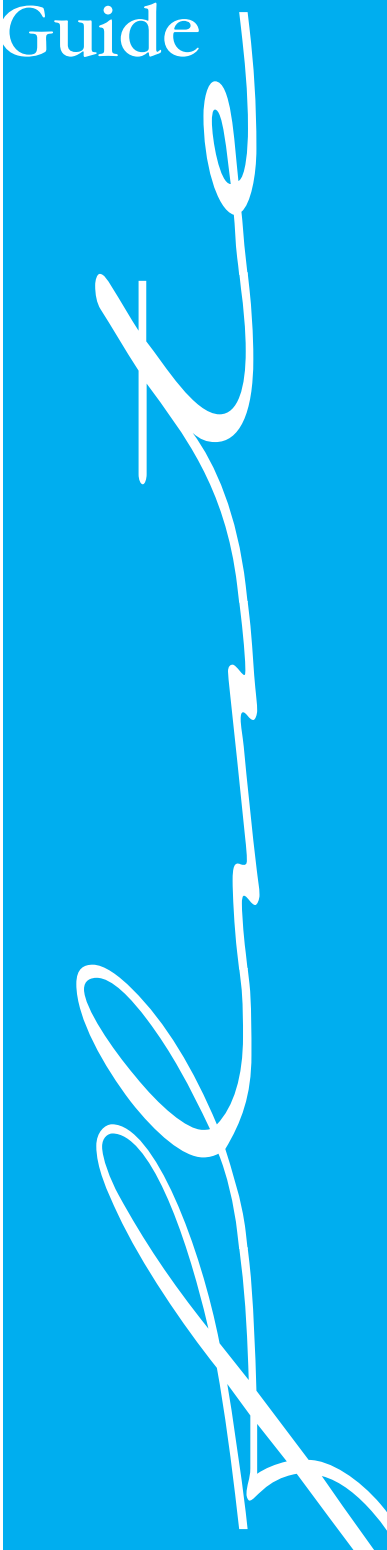
Teacher's Guide



Selmer®

by Charles Delaney

About the Author

Charles DeLaney retired Professor of Music at Florida State University, and chairman of the instrumental music program at the Governor's School of North Carolina. He has studied the flute under Lamar Stringfield, Rex Elton Fair, Edmund Defrancesco, Alfred Fenboque, and Marcel Moyse.

Introduction

The flute is considered to be the earliest wind instrument. Its principle was probably discovered by men listening to the wind blowing across a broken reed, and recapturing the sound by blowing across a similar reed or perhaps a hollow bone. Through the ages additional tones were added either by combining flutes of different lengths, as in the panpipes, or by using finger holes.

Bone Quena from Peru (c. 100 A.D.)

It wasn't until the thirteenth century that the horizontal flute, the ancestor of our modern instrument, appeared in Europe. By the early eighteenth century the transverse flute had acquired one key. This was the flute that Bach and Handel wrote their sonatas for and for which Mozart wrote his popular concertos.

Traverso (1780)

In the middle of the century flute-makers added three more keys to eliminate the difficult cross fingerings and improve the tone and intonation of the simpler instrument. Soon after, the low C and C sharp keys were added.

In 1831 the great English flute virtuoso Nicholson gave a concert in London on a seven keyed flute. Present at that concert was a flute-maker from Munich named Thoebald Boehm. So impressed was Boehm with Nicholson's tone that he decided to devote himself to perfecting the instrument. In 1832 he completed the first conical bore flute with ring keys-probably the greatest single improvement in woodwind instrument history.

Conical Boehm (1840)

By 1847 Boehm again revolutionized flute design by perfecting the cylindrical bore, which produced a louder and richer tone. Covered keys replaced ring keys on this flute, essentially the same instrument we use today. The test of time, well over a hundred years now, is fitting recognition of the genius of Boehm and the great debt of respect owed him by modern flute players and makers.

Boehm's 63rd Flute (1860)

The immense popularity of the flute today can be attributed to many causes. The prospective flutist should consider the following: its obvious portability, the fact that its mechanical system is the most perfected of the woodwinds, its ease of performance and lack of endurance problems, its unique tone quality and a natural expressiveness akin to that of the human voice; its appeal to both sexes; its relative inexpensiveness; the wealth of literature available for it; and certainly its versatility in the various styles of music, e.g. symphony, chamber music, jazz, avant garde, solo.

It is the purpose of this publication to present a basic approach in the fundamentals of flute performance to the person who is not primarily a flutist. As the most critical learning period for the student flutist is at the beginning, basic performance techniques are stressed. The statement "the flute is the easiest wind instrument to play but the hardest to play well" becomes more apparent as one progresses. Countless hours of re-disciplining can be saved by the slow and careful assimilation of correct techniques in the beginning stages of development.

Selecting an Instrument

Lamar Stringfield, the flutist and composer, used to say, "The best instruments should go to the beginners." Although such a procedure is hardly ever realized, there are certain avenues of approach that will at least help the student flutist choose a reliable instrument.

First, if at all possible, one should always ask the advice of a recognized professional flutist-teacher when selecting an instrument. A few minutes of playing and testing by such a person is well worth the effort in time and money. Some factors to be considered in checking over an instrument are: a true scale, homogeneous tone quality, and balanced response in all three registers; response to tonguing throughout the range in the various dynamic levels; an even seating of the pads; uniform spring tension on keys; ease of assembly. The mechanical reliability of the instrument can be ascertained by asking a repairman about the manufacturer's reputation.

The majority of professional flutists today prefer the open hole or French model flute because of its advantages in tone production, intonation adjustment, and fingering. It also has a distinct advantage for the beginner in establishing proper hand position. These advantages should more than offset its higher price, especially for the student seriously interested in a musical career. For those purchasing an artist line instrument, a low B extension is recommended.

A word of warning concerning some second hand instruments and mail-order bargains. These instruments may be out of adjustment badly enough to impair tone production. Some of the cheaper instruments can never be made more reliable and consequently will have little resale value.

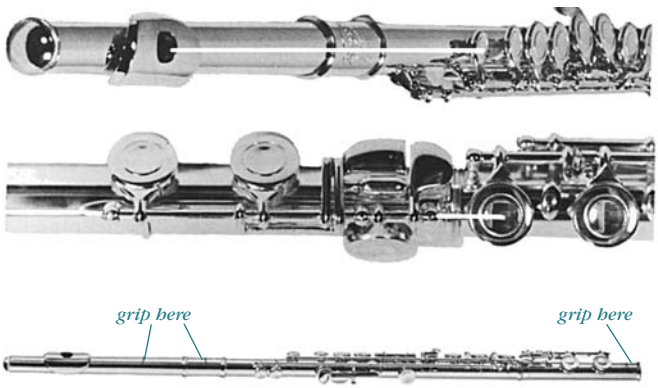
Because padding and key adjustment on the flute are very critical, it is advisable to purchase either a new instrument or one restored to excellent working order.

The quality of the flute case and the protection it affords should also be checked. This is especially important for active youngsters. A simple, small flute case placed in a larger brief case that can also hold music and books is probably the most practical and protective way of carrying the instrument.

Assembly

Flutes are made in three sections: the upper, called the head joint; the middle, called the body; and the lower, called the foot joint. In assembling the instrument, one should avoid grasping the mechanism in order to prevent damage to the keys and rods. Align the tenons carefully, and then push them in with a gentle twisting motion to avoid forcing.

A general rule to be followed by the novice flutist in assembling is as follows: in attaching the head joint to the body, line up the embouchure hole with the "C" hole as illustrated, and in attaching the foot joint to the body, line up the mechanism rod on the foot joint with the center of the "D" or last key on the body. Some accomplished flutists deviate a little from this rule. However, adherence to it by beginners will insure proper hand and lip position to prevent many bad habits.



Care and Maintenance

The flute mechanism, while relatively trouble free, is still so delicate that special care should be taken at all times to grasp the instrument lightly, avoiding undue pressures on the keys, posts, or rod assemblies. Minimal finger pressure in performance will insure a longer life and more accurate adjustment of the pads. Julius Baker, currently the first flutist of the New York Philharmonic, once remarked that it had been over nine years since he had had his flute overhauled. This "record" was only possible through an extremely light finger technique.

Each flute should be equipped with a cleaning rod, which in combination with an ordinary handkerchief should be used to clean the flute after each use. Insert two or three inches of the handkerchief in the slot end of the rod, twist, and pass through the body and foot joints one at a time. Before inserting the rod into the head joint, pull the handkerchief through the slot another two or three inches and fold it over the end of the rod to insure removing as much moisture as possible.

It is also advisable when putting the flute away to wipe off fingerprints and hand moisture with the handkerchief. This routine after each use will minimize the tarnish problem on silver flutes. Sockets and tenons should be wiped clean occasionally to avoid build-up of dirt and consequent difficulty in fitting. No grease or vaseline should be used on these parts.

The novice flutist should not use silver polish or any other abrasive type cleaner on the instrument, as it presents a real danger to the mechanism and pads. The qualified repairman is much better equipped to remove tarnish and polish the flute properly. This is usually done during a complete overhaul.

One of the best ways to avoid costly repairs is to follow the simple rule of never leaving the flute out of its case, especially in a crowded rehearsal room. The practice of leaving flutes on two chairs, or, worse yet, on a music stand has predictable results to which any experienced flutist can attest.

While the instrument demands gentle and careful handling, with proper care it should prove serviceable for many years.

Realigning bent posts or keys, replacing pads and springs, adjusting joints that do not fit properly, removing parts of sticky mechanisms: all these should be in the domain of the repairman. The player should be responsible for oiling the flute once or twice a year (with key oil), keeping the flute clean inside and outside, and cleaning sticky pads. He should leave to his teacher the regulation of keys and pads.

Sticking pads may be freed by using Selmer No Stick in conjunction with cigarette paper or lens tissue. Even an old dollar bill pulled gently between pad and tone hole rim under light pressure will afford temporary relief. Denatured alcohol or water will also work, but they tend to dry out pad skin, causing it to break prematurely. In an emergency, a rubber band placed strategically on a key and hooked to another part of the mechanism will increase tension enough to relieve the situation temporarily.

To check cork placement, insert he plain end of a cleaning rod in the head joint and note the position of its engraved line through the embouchure hole. It should be in the exact center of the hole. To move the cork out, twist tip of head joint clockwise. To move it in, turn the tip of

its head joint counter-clockwise, and push cork to proper position. Once set, it should not be changed.

Student Qualifications

Before selecting the flute as a lifelong companion, it is advisable to ascertain both the physical and mental requirements for musical compatibility.

The flute uses more air than any other wind instrument. For this reason people with larger lung capacities have a distinct advantage over others in projecting tone or sustaining phrases. As men in general have larger lung capacities than women, it is an enigma why most flute players in schools are girls.

The most important physical consideration concerns mouth formation. The lips should be smooth, straight, and of normal size. A defect such as the "tear drop" formation, an indentation of the upper lip, will force the performer to adjust the lips abnormally, forming the air stream on one side or the other. This adjustment, although not too critical in the early stages, could inhibit eventual progress in tone refinement. An excessive overbite or protruding jaw should be avoided. However, if the teeth can be matched fairly easily, there should be no serious problem.

Since the flute is the prima donna of the woodwinds and resides in the domain of virtuoso techniques and expressive solo utterances, the beginner's potential for technical facility and expressive sensitivity should be assessed. Those individuals not predisposed to solo roles or involved technical development would do much better with another instrument.

It should be pointed out however, that despite the limitation mentioned above, there are many exceptions even on the professional level! Personal incentive, drive, and interest must always be considered. The student should be apprised of his chances for success, and then give the choice to make for himself.

Breathing

The flute utilizes at best only about 25% of the breath. In the beginning the percentage is far less, usually because the player opens his lips too far. For this reason most beginners experience periods of dizziness and fatigue in their practice. This will disappear as breath control and embouchure develop.

As the tone develops, the player should begin to control breathing. Rapid inhalation, sustention, and controlled exhalation, all unnatural in normal breathing, must be studied. Since quantity of air is so important to the flutist, the student should look for ways to increase lung capacity. This is best done through efforts to increase capacity in the lower part of the lungs (diaphragmatic breathing). One way to "get the feel" or start correct habits in this breathing is to

hold the arms in a "V" shape over the chest grabbing the opposite shoulder with each hand, and exhale as much as possible while holding the chest down. Making sure that the arms are down tight on the chest and without allowing the arms to move upward, the student should inhale a small amount of air, observing that there is an expansion in the "abdominal" area of the lungs. Breathing in and out in this manner, avoiding any upward motion of the chest, arms or shoulders will help the student to develop control in this area. A good time to practice this is in bed before going to sleep at night.

The practice of long tones or slurred scales and arpeggios will help develop control of the varying speeds and pressures demanded in exhalation (tone control). Quality and intensity of tone desired will dictate the amount of support needed. The abdominal muscles should remain firm throughout the exhalation.

A tip that will aid those who wish to obtain the maximum amount of air in the shortest time comes from the late Arnold Jacobs, solo tuba with the Chicago Symphony Orchestra. When inhaling rapidly, shape the mouth in an oval shape and enunciate ho backwards (oh, retaining the h effect). This relaxes and opens up the throat, permitting a much larger volume of air to get to the lungs. At first, this should be practiced away from the instrument and in spaced intervals. Gradually the procedure can be incorporated into performance.

As proper breathing is so very important in flute playing, the flutist should be most particular where he breathes in the course of performance. Air is expended much more rapidly than with other instruments and in order to insure maximum control, breathing places should be studied and marked in daily exercises, etudes, and performance literature. Many faulty practice habits can be prevented if breath marks are added to the music. Logical places include phrase endings, after long notes, after sequential groupings, sometimes between large skips, between detached notes, and in long slurred passages according to feasible melodic or harmonic divisions. Those with limited lung capacities will have to breathe more often; however, this should prove no deterrent if breathing places are chosen with care. Marking breaths should begin with the first lesson.

Position

Faulty position in flute playing usually can be traced back to inadequate supervision or inattention during the earliest lessons. This is especially true in reference to hand position.

When a beginner is handed a flute for the first time and shown proper positioning, he usually feels that the instrument is not secure and will compensate by grabbing, applying overpressure on balance points, or slipping into a cramped position that insures support but inhibits muscu-

lar action. He can not see what is happening and unless his teacher can supervise his routine, the chances are that faulty habits will persist. It is for these reasons that a strong emphasis on adequate supervision and daily work with a mirror are advised in these early stages.

In practice and in solo performance it is best to stand. This allows for maximum freedom in breathing. In sitting, the back should be upright and away from the back of the chair. The practice of leaning the right arm on the back of the chair, all too prevalent in overcrowded band rooms, should be avoided. In the case of two flutists on a stand, this can usually be corrected by angling the chairs allowing for lateral room.

The angle at which the flute is held can vary from nearly horizontal to as much as 30 degrees below horizontal - provided that the lips remain approximately parallel with the embouchure plate.

The head should be held up and the arms away from the body.

The flute should be always held lightly in the hands (difficult to achieve in beginning stages) and in such a way as to permit maximum muscular freedom. Finger pressure should be at a minimum - only that required to overcome spring tension. Most young flutists use entirely too much pressure, inhibiting technique and causing pads to wear rapidly. Achieving proper control is a lifelong problem demanding constant attention.

The flute is supported by the chin, base of left first finger, right thumb, and right little finger (when depressing the D# key). The student should be cautioned against using undue pressure, especially at the base of the left first finger. In time, a natural feel or balance will develop and the initial feeling of precariousness in holding the instrument will disappear.

The indentation above the base of the first finger forms a natural resting place for the flute in the left hand. The corresponding place on the instrument is located adjacent to the C hole. The fingers should appropriately curve over the instrument with flat portions of the tips of the fingers fitting into the centers of their respective keys. If the first three fingers are positioned correctly, the little finger should fit over the C# key. The thumb should touch the B key in the middle of the top joint.

Correct

Students should avoid the all too common habit of positioning the fingers on the edges of the keys as in the photo at the top of page 9. This necessitates extra motion in adjusting the little finger to depress the G# key and impedes technique.

Incorrect

The right thumb supports the flute under or slightly to the right of the F key. The hand is drawn back until the pads near the tips of the fingers rest on the keys. Finger 2 (E key) should be approximately 90 degrees with the flute and the adjacent fingers curving inward to it. The little finger should have a pronounced curve while resting on the D# key, so

Correct

that when it is used to depress the lower keys (and accordingly stretched), no adjustment will be necessary in the fundamental hand position.

Incorrect

Care should be exercised to avoid allowing the fingers to overlap the keys which in turn usually results in the hand leaning on the key rods ("riding the rods!"). Tendons become cramped and finger dexterity limited.

No parts of the hands other than the two support points and the pads of the fingers on respective keys should touch the flute. All fingers should be arched and thumbs straight. Correct hand position is more clearly assimilated and maintained on the French model open keyed, in-line flute than the covered model. For those playing the covered model, frequent hand position checks by the teacher or band director are recommended.

In the later stages of technical development, when speed of reaction is of the essence, the little finger of the right hand must function independently in its movements to the D♯, C♯, C, or B keys. Stiff finger action or motions involving the wrist should be avoided. The following exercise isolates

this little finger motion. When practiced regularly with proper concentration, it will help not only with reaction but also in establishing correct fingering patterns on first and second octave E.

Practice the exercise first without producing the tones, checking visually the placement and motion of the little finger. A slide action is used from the C to E (placing the little finger on the D♯ key), while a lift and place action is used from the E to the C. Slide action is used throughout the second measure.

Tone Production

The quality of tone production on the flute is dependent upon a combination of several factors. The physical attributes of a performer to a certain extent determine power and control. Background of study and performance experience affect concept authority. Aptitude in mental-physical dexterity can elicit varying degrees of suppleness and finesse. Most important, individual sensitivity (musicianship) can enhance the ultimate physical result by adapting the many tone color resources of the flute to the performance requirements of the music.

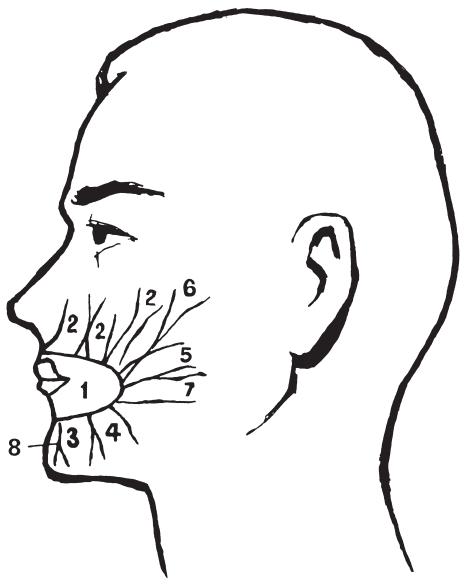
The flute, usually considered to be one of the easier instruments to play, presents definite tone production problems for many in the beginning stages. The most obvious reason for this is that the method of tone production requires that the player produce the air stream and corresponding angle of direction without any mechanical support. Control is sometimes long in coming and discouragement, especially in the young beginner, is almost a predictable result. Many successful flutists can probably recall slow progress in tone control. If the beginning student is apprised of this, it will be easier for him to adjust to the circumstances. Emphasis could be shifted to other aspects of playing as tonal response emerges slowly and is achieved subjectively.

The embouchure can best be taught by demonstration. The basic principles of flute tone production should be understood: one, that the player must produce a small stream of air oval in shape, and two, this stream must be directed over and into the blow hole or embouchure hole of the flute in such a manner as to split it at the correct angle.

The first attempts at producing a tone should be made using only the head joint held by the right hand. The front teeth should be matched and slightly apart, the lips relaxed and closed. The embouchure plate should be centered and placed in the cradle of the chin. The plate should then be moved upward until the bottom lip has

covered approximately 1/8 of an inch of the embouchure hole. The player should be able to feel this after a little practice and adjust accordingly. It is important to note here this simple physical process of cradling the embouchure plate and moving it upward for exact positioning. This process becomes automatic in time and is the easiest, most rapid, and most secure way to position the embouchure. Some players have begun by placing the embouchure hole directly on the lips and rolling it over and downward to locate the correct embouchure. This action, offering a certain degree of security in the beginning stages, becomes too time consuming later and should be avoided.

The player must push his lips outward enough to form the air stream with the inner surfaces, which are smoother and thereby more definitive in framing.* This is uniquely characteristic of the flute embouchure and differs greatly from all other woodwind instruments. The following illustration will give a clearer idea of muscular action involved.



*Tension is achieved by the muscles in the cheeks pulling the lips back toward the ears, not by the muscles surrounding the lips pulling the lips inward.

Key to diagram:

1. *Obicularis Oris,* pursed outward, exposing inner surfaces of lips to form smoothest and most precise frame for air stream.
2. *Quadratus Labii Superioris,* slight tension upward.
3. *Quadratus Labii Inferioris,* tension downward.
4. *Triangularis,* tension downward and backward, opposing Zygomaticus (6).

5. *Buccinator,* compresses cheeks and pulls lips against teeth.
6. *Zygomaticus,* draws corners of the mouth upward in slight smiling position. Opposes Triangularis (4.)
7. *Risorius,* draws lips backward, regulating tension relative to air stream pressure.
8. *Mentalis,* is at rest.

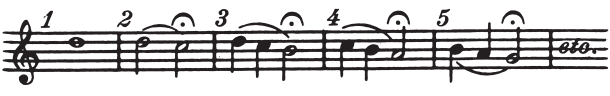
A simple procedure to follow in producing the first tones is to position the embouchure plate and then, imagining a small piece of paper resting on the inner surface of the bottom lip, use the tongue in a "T" attack slightly through the lips to "spit" it off. This tongue attack should be used from the very beginning and as control develops, it can be withdrawn further in the mouth. Experimentation should continue with the head joint (open end) until control of two distinct tones (lower and upper) is secured in attack and moderate sustention (several seconds duration) is possible.

As the student begins to develop control of the air stream, it is important for him to understand the several variable factors affecting tone production. The velocity of the air stream will determine the dynamics and affect the pitch of the tone produced. The more air pressure, the higher the pitch and the louder the tone. The shape of the air stream will determine the quality (clarity) and its size will affect both the quality and the dynamic level. The angle of the air stream can determine pitch and tonal color. Combinations of the above factors give the flute sound many facets and the player innumerable adjustment possibilities.

It is recommended that the student work with a demonstrating teacher during the early stages, checking his embouchure position in a mirror frequently and noting their effect on the sound. If no teacher is available then reference to the embouchure illustrations in this book is advised.

Except during the attack, the tongue should be in repose, out of the way of the air column. The throat should be as relaxed as possible and the air supply should have diaphragmatic support. The lower lip is drawn downward slightly and the center of the upper lip is pushed outward. There is usually more tension on the lower than the upper lip.

Fourth line "D" is recommended as the first one to be produced on the completely assembled instrument. It is an easy tone to play and the utilization of most of the fingers on the instrument assures proper support and hand position. A reminder that the left first finger is up is in order! Once control can be maintained, additional tones may be added in diatonic motion, down as far as practical and then



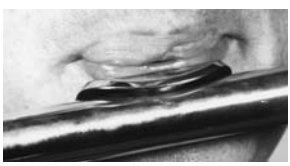
upward. A few novices traverse the entire practical range of the flute in the first lesson! The sooner the student does this, the more quickly and accurately he can react to tone placement.

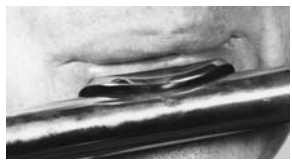
For many beginners initial tone productions is a rather crude hit-or-miss process. There is usually much waste air and an alarming inconsistency in control. Dizziness and discouragement go hand in hand. The teacher's admonishment at this stage should be to keep trying, observing adequate rest intervals and always to practice with the help of a mirror. Attempts made to just blow, disregarding correct embouchure formation, are simply wasted time.

The refinement process in tone production begins with the first tone produced and certainly should last the musical life of the performer. As control develops, the novice will find that he will need less volume of air and certainly less velocity. If the tone is too breathy or open, he might find that by angling the air stream downward and turning the flute inward (using less of the embouchure hole), he can produce a clearer, more pointed tone. Again if the tone is too pinched or small, the reverse procedure might help. Usually most beginning flutists use far too much breath. A reminder by the teacher to relax, adjust angle of air column, avoid overblowing, and adhere to correct embouchure formation will speed the refinement process.

The focusing or centering of tones varies somewhat in the three registers, with the air stream directed more downward for the lower tones and correspondingly higher on the backwall of the embouchure hole for the upper tones. The inner surface of the lower lip comes more into play in the third register and is elemental in maintaining control of the higher tones played softly. The upper lip functions mainly in shaping the air stream and in combination with breath pressure can vary the tone color from a hard, penetrating sound full of overtones to a soft, more breathy sound.

Register determines the size of the air stream, with the low tones produced by a larger air stream than the upper tones, which usually need more support (velocity). The jaw recedes slightly for the lower register.





At the left is an illustration of the embouchure formed to produce high F or F-3. Contrast this with the illustration on the right. The tone being produced there is low C or C-1. Notice the projection of the inner surface of the bottom lip and the corresponding smaller orifice used to produce the upper tone. The student is advised to work with the aid of a mirror to compare his own embouchure.

In scale practice these changes are gradual of course. Daily exercises involving scales, small skips, and eventually large intervals are requisite in developing centered tone control throughout the range.

It usually takes weeks to strengthen and focus the lowest tones. The novice should be patient and try to use less force when attempting to match these tones to adjacent ones. A good method of assuring progress is to slur stepwise (chromatically) downward in groups of three to four tones. Overemphasis on tone development at this stage discourages some students. If this happens, the teacher may sustain interest best by emphasizing fingering exercises for awhile. True refinement and controlled power are simply products of maturity.

As tone control develops, many students tend to use as little breath pressure as possible and to turn the embouchure plate inward. This combination produces a rather weak, pinched tone. Because it also lowers the pitch, the head joint is usually pushed all the way in. The result is severe intonation discrepancies (especially in the third register when played loudly!). This practice prevails in large flute sections, where individual responsibilities are rare and where minimal efforts can abound undetected. It would be safe to say that the pinched, unsupported flute tone is a problem the average college flute teacher faces in at lest 75 percent of his freshman class!

The solution for this is twofold: to provide opportunities for the students to hear good flute playing either through live performances of professionals or suitable recordings, and to encourage supervised individual or chamber music activities that give the student a chance to be heard by himself. It is here that one can easily see the advantages of reliable private instruction.

Many changes of tone color are possible on the flute and the artist-flutist uses these to enhance musical effects and to provide tonal variety wherever possible. Even though these changes are possible to a certain extent throughout the range of the instrument, they are the most apparent in the low register.

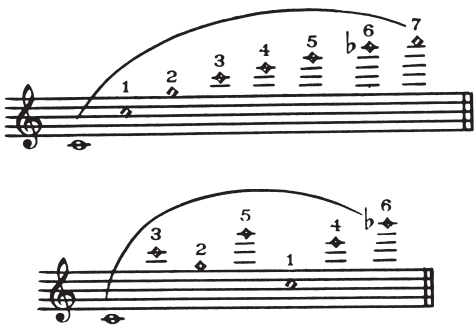
These changes are the result of an increase or decrease of overtone presence within a tone. To develop a range of tone colors, one should begin by practicing low register long tones in the following manner: start the tone with as relaxed an embouchure as possible, using very little breath support. While gradually increasing air stream velocity, pull corners of lips backwards adding tension to the embouchure and compensating for the stronger breath pressure. Continue this over a period of 8 to 12 seconds until the velocity of the air stream and the added lip tension have forced the tone to "jump" to the next octave.

With practice, a gradual, almost imperceptible, color change is possible, varying greatly from the soft, rather breathy, beginning tone to a loud, trumpet-like sound rich

with overtones immediately before the tone jumps up to the next octave. Another good exercise to introduce after there is control on the first is to play simple folk melodies using different tone colorings, especially the extremes: the soft, relaxed tone and the harsh, tense sound. As the extremes are developed, the normal tone also becomes better in quality.

It is important in the intermediate stages to develop a low register tone rich in overtones so that there will be sufficient overtones in normal playing to balance with other woodwind instruments or to project, for instance, over an entire string section when playing in the orchestra. The normal playing tone should include the suppleness and refinements of the relaxed embouchure and at the same time have the projection and overtone enrichment of the harder sound.

In developing lip flexibility, the student should become familiar with the overtone series and be able to place overtones (partials) on the lower fundamentals. Once the feel of each of the first seven partials is established then the student can devise legato exercises that will help develop control. The fingering for low C is used throughout the example.



Again, it should be emphasized that tone production is the result of several factors, the most important of which are physical make-up, learning experience, and personal sensitivity. This sensitivity (musicianship really) accounts for much of the ultimate mastery of tone control. It can not be emphasized too strongly in concluding this section, that one must develop one's own concept of an ideal tone. This demands constant listening and evaluation through studying, recordings, and hearing fine flute playing in recitals and concerts wherever possible.

Articulation

As with other wind instruments, the attack, or process of starting a tone, is accomplished by the action of the tongue as it releases the air column.

Instruct the student to place the tip of the tongue slightly above the gum line just behind the upper front teeth. When he quickly withdraws the tongue, the air column starts the tone. This action is very much like pronouncing the syllable tah.

Later, placement of the tongue prior to the attack will vary slightly - higher when playing softly and in the upper ranges of the instrument, lower for lower and louder tones. The tongue usually should not be allowed to protrude between the lips, for the shape and size of the aperture may be distorted. Also, the student should not be allowed to stop the tone with the tongue, as in the syllable tut. This release is usually too abrupt and crude, and is seldom used in performance.

As the student gains experience, he will find uses for other syllables, such as tee, too, ter, dah, dee, doo, der, lah, lee, loo, ler, depending on 1) the sharpness of the attack desired, 2) the register in which the passage is written, and 3) to a lesser degree, on the volume required. The teacher will note, of course, that the consonants D and L produce a softer attack than T.

The single tongue (single stroke) described above is eventually supplemented by double and triple tonguing in order to satisfy the technical demands of the literature. When developed fully the double tongue can almost double the rate of speed in tonguing. The syllabic representation for this action is the usual ta-ka, tu-ku, te-ke, or simply t-k, for double tonguing and ta-ka-ta, du-gu-du, and variants for triple tonguing. The syllables du-gu and du-gu-du, used in softer attacks, are recommended in the early stages of practice to develop evenness. An alternate technique for the triple tongue is the superimposed double tongue - T-k-t-K-t-k. When properly assimilated, this can be produced somewhat faster than the normal triple tongue, and is usually more even at fast speeds.

Other syllable combinations, such as the brass player's ta-te-ka and similar equivalents, are practical for the flute but not as effective as the regular pattern.

To improve articulation response, especially in the low register, the intermediate or advanced student is advised to practice enunciating tones combining the tongue with an abdominal or throat "push." In learning this, the student should first play repeated tones or scales staccato without the tongue, using the syllables hah, hih, or heh until he achieves evenness at a fairly fast speed  =72. The push can then be used in combination with the tongue - tha(h), thi(h), or the(h). This combination represents the ultimate goal in single tongue articulation on the flute because of the variety of effects and shadings possible. An example: to avoid distortion or over-attacking and to get maximum resonance on loud repeated low register tones, the combination might be 30 percent tongue and 70 percent abdominal or throat push. Control of this type of attack depends on

the individual's musical sensitivity as well as practice effort.

The normal release of most tones on the flute is called the taper release, a combination of two simultaneous actions: 1) the gradual slowing of the air stream up and away from the embouchure (softening and sharpening). The latter motion is accomplished either by lifting the head or by jutting the jaw. When properly executed, this combination of actions insures maintenance of intonation level and dissolves the tone most effectively. The taper release may be slow and extended in the case of a long tone diminuendo or may be executed on staccato notes at a relatively fast tempo.

The best beginning practice for this release is to play loud long tones with at least a four second diminuendo release. Pitch should be held constant through gradual upward head motion as the velocity diminishes. Faster releases should be tried as control is gained. In staccato playing, the release should be sharp yet with the effect of "floating the tones away." In very rapid single tongue passages and comparable compound tongue examples, the following tongue attack becomes the release. All other releases should be executed in the "taper" manner, so that the two compensating actions bring about the least obtrusive tone ending.

Fingering

The flute has the least complicated fingering system of all the woodwinds and consequently is considered the most facile. But its facility also depends upon the dexterity of the performer and his playing habits. A concept of correct positioning from the very first lesson will do much to prevent bad habits which ultimately impede technique. As discussed in POSITION, the hands and fingers should be relaxed at all times, manipulated as close to the keys as possible. Pressure should be only that which is necessary to depress the keys adequately. This light touch, which must be continually worked for, is the key to ultimate technical command. Finger motion between tones, whether long or short, is always at the same speed: "lightning fast" in perfect coordination. When fingers are as close to the keys as possible, motion and reaction will be minimal. The fingers should be curved enough to put the flat portions, not the tips, on the keys.

The first octave encompasses the fundamental tones of the flute; its fingerings are basic. With the exceptions of D, C#, and C and a few notes in the third octave, the D# key is depressed at all times.

The second octave, which is actually the first partial of the overtone series, has just two changes of fingering from the lower octave. These tones are fourth line D and D# (E flat), which have the first finger raised. Although little difference in tone quality is detected in the beginning stages, differentiation in clarity and quality is readily apparent

when the tone becomes more refined. For this reason it is necessary to maintain correct fingering discipline from the very beginning. Again in this octave the D# key serves as a vent for all notes except D.

There are three practical ways to play B flat in the first two octaves. The most common fingering is 1, thumb, 4 and D#. The second, using 1, thumb, 4 on the B flat lever key, and D#, in certain instances can be more effective in producing a smooth connection to and from the B flat. Both are recommended as fingerings for the beginning flutist. The third, a "crutch" fingering, should be learned only when technical demands warrant its use, and certainly not in the beginning stages. The finger, 1, B flat thumb, and D# is used chiefly in rapid passages where the coordination of the hands in the other two fingerings is difficult. Its use is limited in passages where there is direct movement from B flat to or from B natural (C flat). This is only possible by the sliding of the thumb, awkward in rapid tempo. It is for this reason that either or both of the first two fingerings must be assimilated before the B flat thumb is used.

Close relationships between the third and the lower two octaves tempt students to use the most familiar and convenient fingerings. In the interest of accuracy, advise them to adhere carefully to the fingering chart, despite fingerings that are somewhat confusing at first and have no set pattern in scalewise motion. In the third octave, many overtone combinations produce results that approximate the optimum fingering. While the student should explore this range as soon as feasible, he should concentrate on correct fingerings and avoid the approximations.

Even though modern composers occasionally write music that extends into the fourth octave, the main benefit in gaining control of tones in this range is to strengthen the embouchure and sharpen the technique for the upper tones in the third octave. As there is very little study material available for tones in this register, it is suggested that some of the standard studies be transposed up an octave for practice. Many of the etudes in the Anderson Opus 33 collection are excellent for this purpose.

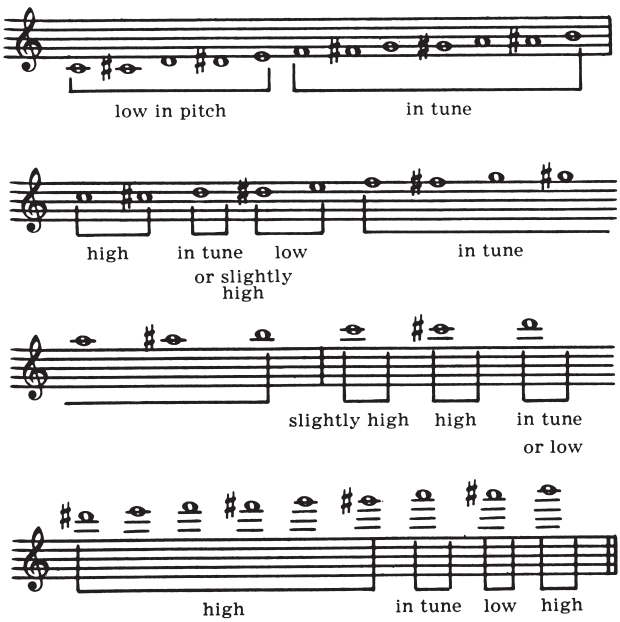
Alternate or harmonic fingerings are sometimes used in the upper registers when the regular fingering becomes impractical. By using selected partials, the performer can approximate the tonal colors of the regular fingerings with these auxiliary fingerings. The problem posed by each passage (mainly band or orchestral) studied is unique, usually requiring a certain "relearning" of technique. A thorough understanding of overtone placement plus some experimentation is usually a requisite for finding the best alternate fingerings.

In order to build reliable finger control, daily practice of scales and arpeggios (if possible with a metronome) is a must in the formative years of study. An effective routine should include work throughout the entire register and in all keys.

Intonation

The general rule concerning intonation adjustment in ensemble performance states that the higher tones should be tuned to the lower ones. The flutist by virtue of the range of his instrument, finds himself in the unenviable position of having the major responsibility in adjusting. Fortunately there is adequate flexibility in pitch control of most tones on the instrument. With a sensitive ear and a practical knowledge of pitch alteration, the player can match the continually changing demands.

As a basis for adjustment, knowledge of the intonation idiosyncrasies of the flute is necessary. Most flutes of the Boehm system will adhere to the following intonation pattern when played moderately loud without any compensation for pitch.



All fourth octave tones are usually high in pitch.

In order to compensate for these intonation discrepancies and to adjust to other instruments, the flutist alters tones in two ways (or in combination of both): 1) by changing the velocity of the air stream or 2) by changing the angle of the air stream. When the velocity is increased, the pitch is raised or when the angle of air stream hitting the back wall of the embouchure plate is moved up, the pitch goes up.

As velocity increases, the tone not only goes sharper, it usually gets louder. This can be controlled somewhat by reducing the size of the air stream. However, the usual

adjustment in intonation is made by changing the angle of the air stream. This can be accomplished three ways: 1) lowering or lifting the head, 2) moving the lower jaw in or out, and 3) rolling the flute in or out with the hands. These can be used singly or in combination with one another. Most flutists learn first to roll the flute with the hands. It is best, however, to avoid encumbering the hands with any more responsibilities than those involving finger placement and support. The head adjustment is preferred even in the beginning stages, not only for the above reason but also because it involves less of an embouchure change than the jaw motion. Once assimilated in the technique, it is faster and more pronounced. The flutist is cautioned not to move hands with head.

There are other factors worth consideration in the study of flute intonation. The extent of variation in pitch of tones is proportional to the length of tubing used to produce the tone. It is for this reason that C#-2 (and to some extent C#-3) is usually played sharp, especially when played loudly. In many cases student flutists begin to "hear" this tone sharp much to the chagrin of their more sensitive colleagues. An adjustment in tone quality of this C# to surrounding tones will help to bring the pitch back in focus. Some tones drop abruptly in pitch when not supported. Main offenders are E-1, E-2, D-3, and B flat-3. Be sure the D# key is down for the two E fingerings!

In the diminuendo, as the tone gets gradually softer the head is slowly raised to compensate for the flatting (taper release). In the crescendo, the opposite head motion is used. Long tone exercises in pitch control of crescendo and decrescendo (using a stroboscope where possible) are recommended. This is one phase of flute technique seldom practiced adequately.

In tuning, it is best to use several notes at varied dynamic levels to check pitch. With the piano a low C played softly, top line F moderately loud, and high C# loud will give the performer a compromise pitch level to which these tones may be adjusted. All tones need adjustment at times, and the player is again reminded to lift the head on soft tones and lower it on the loud, especially in the case of sudden, extreme changes.

The slow playing of chromatic scales in unisons, octaves, and double octaves with fellow woodwind players will bring to light intonation discrepancies usually overlooked in routine ensemble rehearsals. An arrow marked over a note in question (↑ ↓) will help the performer to remember to adjust down or up. In very loud passages in the third octave where the tendency is to play high, the flutist may pull out the head joint if time permits. He may also push in when playing soft, sustained music in the lower register. "Pull" or "push" written in before such passages will serve as a reminder.

The vibrato, when used judiciously, can "soften" pitch problems in ensemble playing. The vibrato creates the acoustical illusion of pitch becoming an area rather than a point, so the flutist can help mask intonation problems in the lower echelons of a performing group by using a fairly wide (yet fast) vibrato. The vibrato is definitely limited in this respect and will never compensate adequately for the insensitive ear.

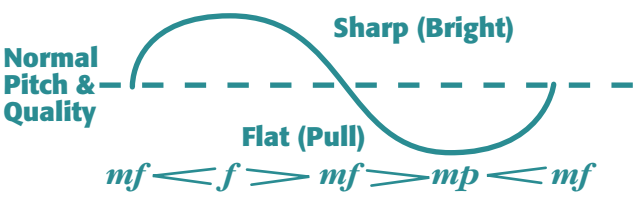
It must be remembered that the artist flutist is seldom if ever allowed respite from the ever present responsibility of intonation adjustment. He must not only be familiar with his own instrument's scale, but must know the pitch idiosyncrasies of his fellow wind instruments, be able to adjust to the "natural" scale of the string players (sharp leading tone, slightly raised third, etc.), proportion his concept to the fixed "tempered" systems of the keyboard instruments, and relate his adjustments to the usually dependent singer. Marcel Tabuteau, the famous oboist of the Philadelphia Orchestra, once reacted to the pitch insensitivity of a woodwind student by exclaiming, "He will never suffer!" The antithesis of this story might well predict a certain amount of suffering by the sensitive flutist. If so, then this is as it should be, for it is the artist's job to see that the listener doesn't suffer. Intonation should be the organs that regulate our senses (eyes, ears, etc.). We should notice their presence only when there is something wrong with them.

Vibrato

The vibrato is a necessary adjunct to flute playing today. Used with proper control and discretion, it can be most effective in coloring tone, creating intensity, or giving direction to a musical line. It should be introduced when the student has adequate tone control in all three registers - the earlier the better, as correct vibrato study usually improves tone control.

Flute vibrato is produced by varying the speed of the air stream in regular pulsations, usually four to six per second. When the velocity is increased, the tone gets louder, higher in pitch, and brighter in color (more overtones). When decreased, softer, lower in pitch, and duller. One complete cycle in air stream speed is called a pulsation.

Muscular action involved is in the throat constrictor muscles or in the diaphragm area (actually the intercostal mus-

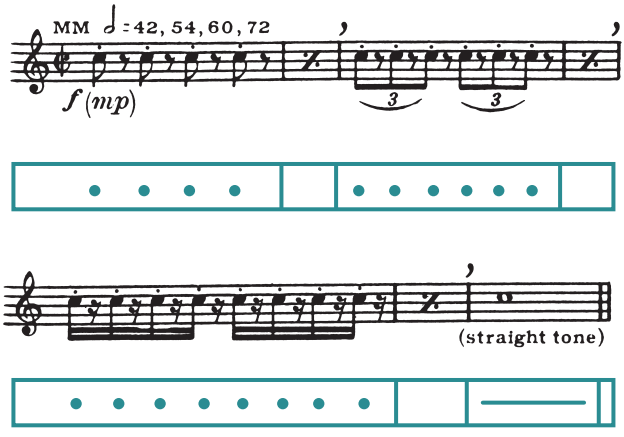


cles, as the diaphragm itself is capable of moving only once or twice per second). Throat vibrato is used most often, because it takes less effort and can move faster. Diaphragm vibrato on the other hand can produce a wider variance in breath pressure and a smoother pulsation. Interaction of the two occurs frequently. Ultimate control of vibrato not only includes mastery of both, but also the control of varying speeds and widths (breath pressure changes.)

The following method is one of many approaches to the introduction of vibrato into the performance technique. Its merit rests on its simplicity and the inclusion of speed and width control from the beginning. Action of muscles from the diaphragm area is stressed at first to avoid throat tension and to assure maximum control.

Without using the tongue and producing tones with the syllable "hah," the student should play through the first exercise in tempo, concentrating on making notes very short and clear. As control develops, it should be repeated at faster metronome markings and eventually on several different pitches throughout the three octaves.

In the next exercise, the tongue should only be used on the first tone and after each breath. The muscular emphasis

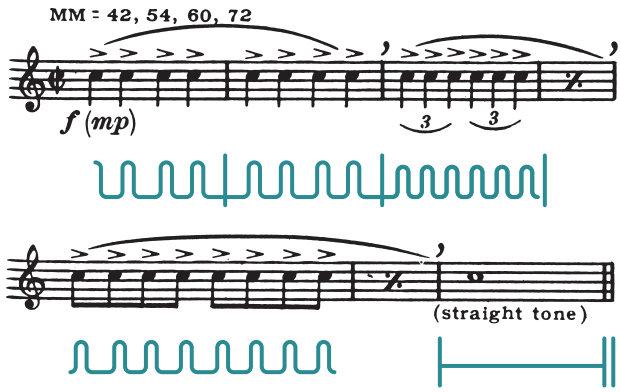


is exactly the same as in Exercise 1. However, between the beginning of each note (abdominal push), a liaison or connecting tone is added, the "push" being loud and the sustaining level of the liaison tone soft. The syllabic representation of the first measure is the ha-ha-ha. The difference in the levels of the accented push and the sustained liaison should be exaggerated. Effort to smooth or round out the pulsation should not be made at this point and the drop from the accent to the liaison tone level should be abrupt. As the speed is increased, a rounding out of the pulsation will begin to take place.

While the pulsation should be exaggerated at first to insure complete muscular involvement, the pulsations must

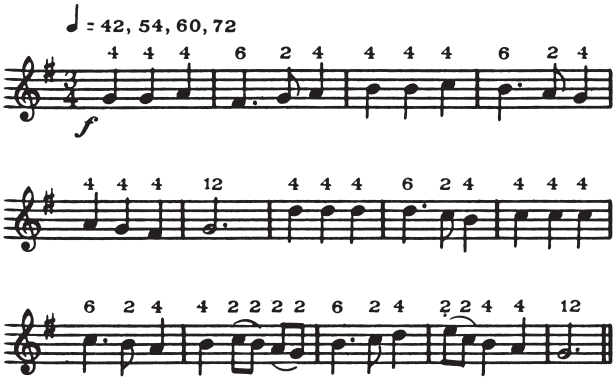
not be accented on the beat.

The following exercise, to be undertaken only when there is adequate control on the first two, introduces the



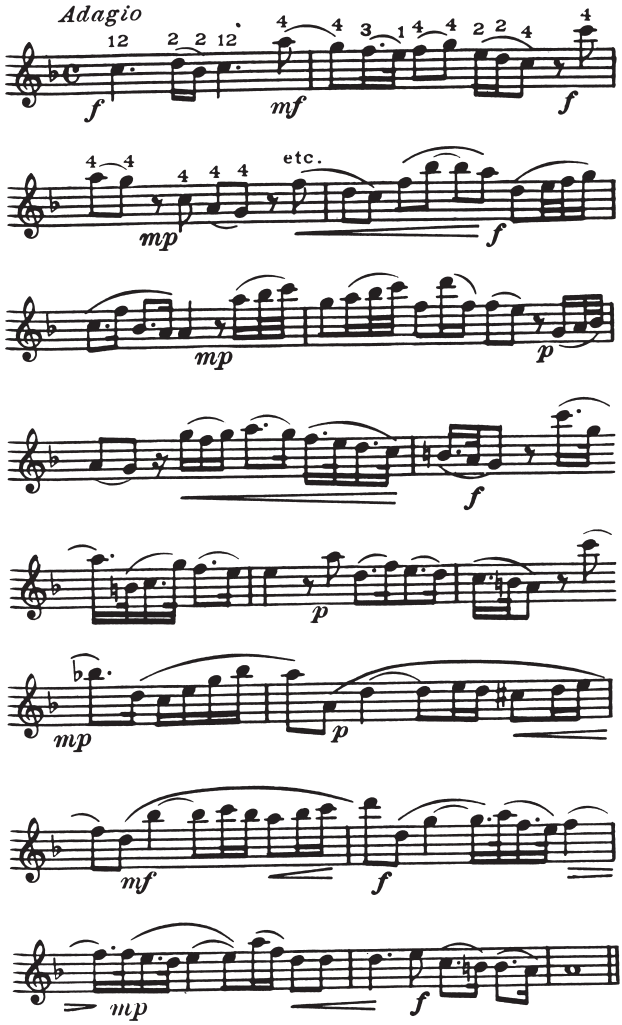
vibrato principle into actual music. Vibrato is played in rhythm at ♩ = 4 pulsations. In the lowest tempi, the width of the pulsations (sharp-flat, loud-soft, bright-dull) is still exaggerated as much as possible. As the tempo is increased, the pulsations should become smoother and narrow, yet remain clearly audible. The exact number of pulsations should be heard on each note. The exercise is played at each metronome marking and afterwards repeated one octave higher and also two octaves higher if vibrato controls fairly consistent in the first two octaves and the student is familiar with the third-register fingerings. Again, the student is urged to exaggerate the effect.

The next exercise, the *Adagio* from Handel's Sonata VII, is played as above with the mechanical approach, using four



pulsations per eighth note. The beat is subdivided, with the eighth note equal to metronome marking 72. The style is sustained legato playing, with minimal tonguing on articulated notes. Even though the pulsations are played in rhythm and defined clearly, the emphasis here should be on smooth contours, complementing the music and not overwhelming it. The result at all time should be musical, with the listener unaware of the mechanics involved.

After thorough study of the various exercises here, the student should begin to introduce the technique into performance.*



If the pulsations become jerky or rhythmically uneven, then more practice of the exercises is indicated. Blending with other instruments should be of prime importance and caution should be exercised when the function of the music indicates chordal support, alliance with the non-vibrato instruments, or certain cadential effects.

**The vibrato should no longer coincide with the beat, singing freely in accordance with the phrasing.*

Line intensity may be increased by augmenting the crescendo with a vibrato that grows in speed and dimension.

A gradual slowing of pulsation and diminution of width in certain cadences can bring about a more definite feeling of rest.

A staccato effect may be enhanced by a quick, fast vibrato.

In conclusion a strong word of caution: the vibrato can become a monster! Regrettably some flutists use the vibrato to incessantly, disregarding musical taste or common sensibilities. Sometimes this is the result of an association with an organization undisciplined in dynamic control or intonation adjustment. In self preservation the flutist used the technique simply to be heard above the din. Others allow the vibrato to become too slow and wide, imitating the senile singer. The opposite effect is also common. The player's tight throat makes the vibrato too fast and jerky, like the bleat of a nanny goat. Ultimately the success of vibrato control depends upon the musical sensitivity and imagination of the individual. These can best be developed by studying the recordings and actual performances of artist-flutists. The more exposure to performance, the better the background for application.

Practice and Performance Techiques

The accomplished flutist has within him a combination of a mature musical sensitivity, a developed sense of reaction, and a complex assortment of kinesthetic skills. Achieving this demands talent, time, and experience. It should be the purpose of every young flutist to develop his musical gift to the fullest with the limitations of time.

In the beginning stages attention must be focused on the slow assimilation of correct habit patterns. Much of learning in this stage is by rote and constant repetition in building technical security is required. Several practice sessions of short duration spaced during the day will diminish fatigue problems and strengthen the rote process. A good method book will provide the necessary material in correct order at this level. The introduction of simple solo literature for flute and piano, such as the *Forty Little Pieces* edited by L. Moyse and published by G. Schirmer, should heighten interest. The student is cautioned to be on the lookout for bad habits, for it is at this stage that faults in position and fin-

gerings creep into the technique, and these become difficult to correct later.

A definite practice routine should be established in the intermediate or more advanced stages. It should consist of four parts: 1) scales and other technical exercises, 2) embouchure exercises (long tone, crescendo/decrescendo, intonation, lip slurs, overtone, vibrato, etc.), 3) studies or etudes, 4) solo pieces, ensemble music, and sight-reading. Although the bulk of the practice time should be devoted to the latter two parts, each one of the first two should command at least ten to fifteen minutes. For discernible progress, the practice routine should be regular, preferably at the same time each day. Results can be measured by amount of concentration, time spent, and material covered. As a chain is only as strong as its weakest link, so a performer is in relation to the aspects of his own techniques. Sight reading can be improved through duet playing (especially with a better player); rhythmic accuracy with the use of a metronome; tone production and control with a tape recorder; fingering by slow, careful practice and a gradual speeding process; memorization by memorization, etc. There is always a cure for an ailment but only if the performer is aware of the ailment and will devote the time to its correction. Guidance by a competent teacher is still the only reliable way.

There are many aspects of performance open to the flutist of today. His role in the band or orchestra is well known and respected. There is a wealth of fine literature in chamber ensembles that include the flute both with strings, winds, and in mixed combinations. The solo field for unaccompanied flute, flute and piano, and flute and accompanying ensemble is practically limitless.* The study of literature in these varying categories is a requisite for the well rounded flutist.

In the intermediate stage, usually in high school, the flutist should try to take advantage of all performance opportunities within the scope of adequate preparation. The contest solo can provide technical and psychological challenges unmatched by other media at this stage. Choice should be made early, study done in a thorough manner, and if possible, several performances given before the contest date. Church and social club performances are encouraged, as they too provide the invaluable experience of public performance promoting poise and self-confidence.

Most professional flutists also play the piccolo, interchanging the two with no ill effects. The piccolo can be an ideal beginning instrument as well, especially for the very young, or for a player with unusually small hands.

**A recital of literature for unaccompanied flute, once given at the University of Illinois, lasted over four and*

The musical comedy and jazz fields, touching more and more into the high school and college performing area, utilize the flute in combination with other woodwind instruments, mainly the clarinet and saxophone. If a young flutist is interested in learning to double, he should be encouraged to begin study on the alternate instruments as soon as possible.

Recently there have been a revival of interest in the 18th century flutes, the one-keyed traverso (the ancestor of our modern instrument) and the recorder. It is now possible to obtain excellent replicas of the famous Quantz and Hotteterre traverso from makers in this country and in Europe. Performances of Baroque music in combination with the harpsichord, viola da gamba, and related string instruments give the instrumentalist the opportunity to perform music of this period in context and style. The soft and delicate qualities of these flutes can only be approximated by the modern instrument.

For the past few years, composers, using the latest techniques, have found the flute to be an ideal vehicle for their craft. Solo and ensemble pieces abound with all manner of experimental tonal effects including double, triple and even quadruple stops, finger snaps and pops, vowel and consonant tone shapings, wind sounds, whistle tones, flutter tonguings, etc. This new frontier of expression opens up an exciting future for the flute.

The opportunities for the flutist, certainly many and varied, depend ultimately upon the talent, initiative, and discipline of the individual. Futures in performance and teaching (the two combining in many successful careers) are possible for those who are willing to undergo the disciplines of training. Lamar Stringfield once said, "Learn to play the flute well and it in turn will serve as a foundation for many other aspects of music making." Successful conductors, composers, and teachers over this country who are flutists, will attest this statement. The student musician, serious and industrious in the perfection of his immediate performance goals, can rest assured that even though he is not able to see beyond today's horizons, he is certainly moving in the direction of a successful and rewarding career in music.

The advanced student interested in Baroque ornamentation should examine recordings made on the original instruments by leading artists specializing in authentic interpretation. Two of the best recordings available are: The Handel Recorder Sonatas, Franz Bruggen, Telefunken; and The Telemann Suite in A Minor, Krainis, Knapp.

Literature

Title	Composer	Publisher	Grade
Methods			
Method (2 Volumes)	Altes	Leduc	I-VI
Belwin Flute Method (3 Vols.)	Gekeler	Belwin	I-II
Rubank Methods (4 Vols.)		Rubank	I-IV
Complete Method	Taffanel-Gaubert	Leduc	I-VI
Studies			
Etudes, op. 21, 33, 30, 15, 63, 60	Andersen	Southern	III-VII
24 Concert Studies	Bach	Southern	V
18 Exercises for Flute	Berbiguier	Fischer	III-IV
Etudes for Flute	Bitsch	Leduc	VI
Etudes	Bozz	Leduc	VII
12 Etudes	Chopin-Moyse	Leduc	VI
Etudes Moderna	Keamkeam	Leduc	VI
Thirty Caprices (Modern Flutist)	Karg-Elert	Southern	V-VI
Caprices, Etudes	Schade	Southern	IV-VI
Daily Exercises			
12 Studies, op. 15	Boehm	Fischer	III-IV
Exercies for the Flute	MacQuarre	Schirmer	IV
Daily Exercises	Moyse	Leduc	V-VI
Foundation Studies	Pares-Whistler	Rubank	III
Tone Studies			
Tone Development	Eck	Belwin	II-III
De la Sonorite	Moyse	Leduc	II-IV
Orchestra Studies			
The Modern Flutist		Southern	
Orchestra Studies (3 Vols.)	Smith	Oxford	
Orchestra Studies (2 Vols.)	Torchio	Ricordi (Colombo)	
Solos for Flute Alone			
Sonata in A Minor*	Bach (Moyse)	Leduc	V
Sequenza*	Berio	Zerboni	VII
Syrinx	Debussy	Jobert	IV
Eight Pieces for Solo Flute	Hindesmith	Associated	VI
Danse de la Chevre*	Honegger	Salabert	IV
Air and Variations*	Nicholson	Southern	V
12 Fantasies*	Telemann	Barenreiter	IV-V
Flute and Piano			
Collections			
Forty Little Pieces*	L. Moyse (ed.)	Schirmer	I-III
Flute Music by French Composers+	L. Moyse (ed.)	Schirmer	II-VI
24 Concert Pieces*	Cavally (ed.)	Southern	III-IV
Pleasures of Pan (6 Vol.)*		Cundy-Bettoney	III-VI
Contest Pieces			
Six separate pieces*	Lewallen	Belwin	II-IV
Air de Ballet*	Saint-Saens	Fischer, Southern	IV-V
Hungarian Pastorale Fantasie*	Doppler	Cundy-Bettoney	V

Title	Composer	Publisher	Grade
Fantasie*+	Faure	Belwin	V
Prelude and Scherzo*+	Busser	Leduc	V
Andante and Scherzo*+	Ganne	Costallat	V
Nocturne and Allegro Scherzando*+	Gaubert	Enoch	V
Fantasie*+	Gaubert	Salabert	V
Cantible and Presto*+	Enesco	Enoch,Boosey & Hawkes	V
Poem*	Griffes	Schirmer	VI
Ballade*	Martin	Universal	VI
Le Merle Noir*	Messiaen	Leduc	VI
Gymel*	Castiglioni	Zerboni	VI
Prelude and Rondo	Tardos	Boosey & Hawkes	VI
Concertos			
Concerto in G*	Quantz	Southern	IV
Concerto in D Minro*	C.P.E. Bach	Leuckart	V
Concerto in D*	Mozart	Southern	V
Concerto in G*	Mozart	Breitkopf	V
Concertino*	Chaminade	Enoch	V
Concerto*	Ibert	Leduc	IV
Sonatas			
11 Sonatas*	Handel	Barenreiter	II-IV
Sonatas I, II, III*	Bach	Boston	IV-V
Sonatas IV, V, VI*	Bach	Boosey & Hawkes	IV-V
Sonata VIII*	Bach	Leduc	IV
12 Sonatas (2 Vols.)*	Marcello	Edizioni DeSantis(Colombo)	III-IV
Sonata*	Burton	Fischer	V
Sonata*	Hindemith	Associated	V
Sonata*	Poulenc	Chester	V
Sonata*	Prokfieff	International	VI
Sonata*	Martinu	Associated	VI
Sonata*	Muczynski	Schirmer	VI
Suites			
Suite in B Minor*	Bach	Associated	V
Suite in A Minor*	Telemann	Southern	V
Suite*	Widor	Southern	V
Suite Paysanne*	Bartok-Arma	Universal	V
Duets			
48 Progressive duets	E. Kohler	C. Fischer	I-IV
30 Easy Duets in All Keys	L. Moyse	McGinnis and Marx	II-III
6 Duets	J. Quantz	G. Schirmer	III
6 Duets	W.F. Bach	Breitkopf & Hartel	V
Duets op. 10, 39, 80, 81, 87, 102	F. Kuhlau	International	IV-VI
Cannonic Sonata	P. Hindemith	Schott	VI
Album of Flute Duets	L. Moyse	G. Schirmer	II-V
School of Flute Playing in Vol. 4	L. Hugues	Ricordi	I-V

** Recommended material for contests*
+ Schirmer collection

Title	Composer	Publisher	Grade
Trios			
6 Sonatas for Three Flutes	James Hook	Rubank	III
Trios	F. Kuhlau	Costallet	V
Trio, Op. 29	J.A. Andre	Belwin	V
Trio	A. Tscherepinn	Boosey & Hawkes	IV
Flutes en Vacances (4th Fl. ad lib.)	J. Casterede	Leduc	
Miniature Suites No. 1 and No. 2	A. Albisi	Cundy-Bettoney	V-VI
Quartets			
Flute Quartet Collection	H. Voxman (ed.)	Rubank	II-IV
Christmas Morning Suite	G. McKay	Southern	III
Flute Sessions (for 2, 3, and 4 Fl.)	Wilkins	Shawnee Press	II-V
Grand Quartet in E Minor	F. Kuhlau	Southern	V
Jour de'ete a la montagne	E. Bozza	Leduc	VI
Rondo Capriccioso	R. R. Bennett	Chappell	VI
Chamber Music with Other Instruments			
London Trios (2 fl. And cello)	F.J. Haydn	Southern	III-IV
Three Quartets for fl., vn., va., and vcl.	W.A. Mozart	International	V
Serenade, op. 25 for fl., vn., and va.	L.V. Beethoven	International	V-VI
Sonata for fl., va., and harp	C. Debussy	Durand	VI

Reference Materials

Author	Title	Publisher
Anthony Baines	Woodwind Instruments and Their History	W.W. Norton & Co.
Theobald Boehm J.J. Quantz- Edward Reilly	The Flute and Flute Playing On Playing the Flute	Dover Publications The Free Press, a division of the Macmillian Company
James J. Pellerite	A Handbook of Literature for the Flute	Zalo Publications P.O. Box 913 Bloomington, IN
Complete Flute Fingering Chart		Zalo Publications P.O. Box 913 Bloomington, IN
Richard Shephard Rockstro	The Flute (the construction, the history, and the practice of)	Musica Rara (Rubank)
Roger S. Stevens	Artistic Flute Technique and Study	Highland Music Co. 1311 N. Highland Ave Hollywood, CA
Clayton Tiede	The Practical Band Instrument Repair Manual	Brown Company
Everett Timm	The Woodwinds	Allyn & Bacon
Frans Vester	Flute Repertoire Catalogue	Musica Rara (Rubank)
Frederick Westpahl	Guide to Teaching Woodwinds	Brown Company

Self Study Music Theory Manuals

John Clough	Scales, Intervals, Keys and Triads	W.W. Norton
Bertrand Howard	Fundamentals of Music Theory	Harcourt, Brace and World

Concerning Records

For the serious student the study of recorded performances is almost mandatory. Through careful repeated hearing the studen can study in detail performance styles, approaches to tone production, and technical controls used by the world's leading performers and pedagogues.

There is more serious music recorded for the solo flute than any other wind instrument and certainly almost every major work written for the instrument has one or more interpretations listed. A study of the Bach or Handel Sonatas might be the most appropriate beginning. There are a few recordings of the Mozart Flute Concertos and a comparison of varying styles and approaches in possible here. Of great interest and benefit to the student are the collections or programs presented on records. Many works appropriate for study on the intermediate and advanced levels are found in these recorded performances.

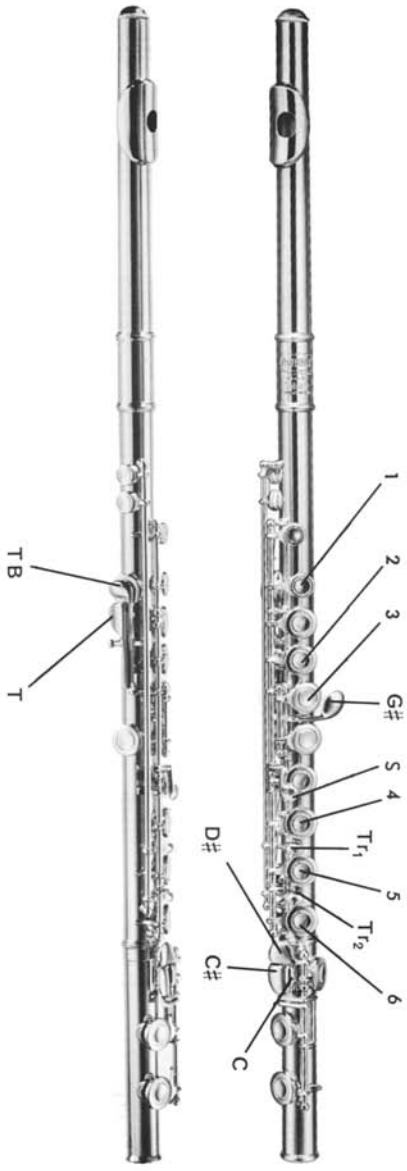
Mention must also be made of the excellent Music Minus One series, a representative selection of solo and chamber music recorded without the flute part. Music is provided and the excellent professionals used on the recordings.

Title or Type	Artist	Company
Handel: Sonatas		Decca
Mozart: Flute and Hapr Concerto		Bach Guild
Telemann: Suite in A Minor		Bach Guild
Martinu: Sonata No. 1	Julius Baker	Westminser
Pieces for Unaccompanied flute by American composers	Samuel Baron	Composers Recordings, Inc.
Collection	Frank Bowen	Austin
Collection	Sarah Baird Fouse	Coronet
Collection (Avant Garde Music)	Severino Gazzelloni	Time
Collection (Vol. 1 and II)	William Kincaid	Award
Mozart: Concerto in G		Columbia
Mozart: Flute Concertos in D and G	Alain Marion	Nonesuch
Collection	Aurele Nicolet	Telefunken
Collection	James Pellerite	Golden Crest
Collection (with performance notes)		Coronet
Mozart: Concerto in D	Andre Pepin	London
C.P.E. Bach Concerto in d		Epic
Bach, Telemann: Unaccompanied works		Epic
Bach Sonatas		Epic
Ibert, Rivier, Jolivet Concertos	Jean-Pierre Rampal	Music Guild
Collection of Flute and Orchestra Music	Maurice Sharp	Epic
Damase, Martinu, Rorem: Trios	Albert Tipton	Westminser
Collection	William Watson	Monitor
Brant; Angels and Devils for flute and flute orchestra	Frederick Wilkins	Composers Recordings, Inc.
Collection	Robert Willoughby	Coronet

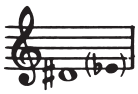
For program content in Collections check appropriate record catalogs.

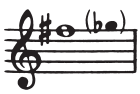
Chart of Regular and Trill Fingerings for Flute

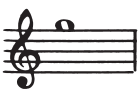
The diagrams below identify the keys of the instrument by the names and numbers used in the chart. Circled key or keys are used in the execution of the trills.

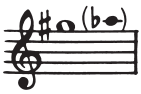


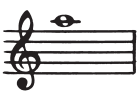
Regular Fingerings

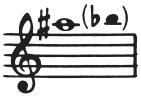


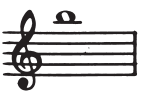


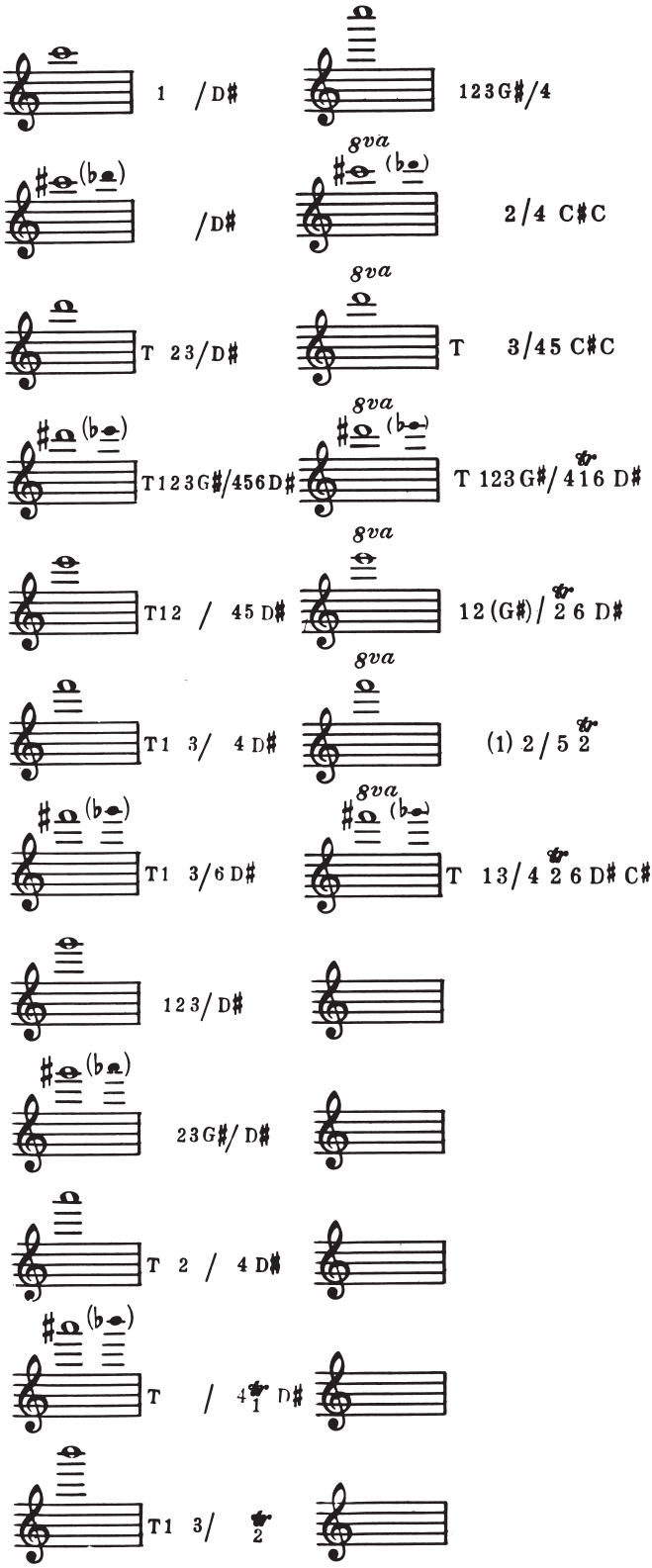











1 /D#
123G#/4
8va
/D#
2/4 C#C
T 23/D#
T 3/45 C#C
T123G#/456D#
T 123G#/4 16 D#
T12 / 45 D#
12(G#)/ 2 6 D#
T1 3/ 4 D#
(1) 2/5 2
T1 3/6 D#
T 13/4 2 6 D# C#
123/D#
23G#/D#
T 2 / 4 D#
T / 4 1 D#
T1 3/ 2

Trill Fingerings


(regular)


T123/④D♯


T123/456 Ⓒ


T123/ ⑥D♯


T123/456 Ⓒ♯


T123Ⓖ♯/ 6D♯


(regular)


(as above)


(as above)


T123Ⓖ♯/D♯


T123/456 Ⓓ♯


T12③/D♯


T123/45⑥


T12③Ⓖ♯/D♯


T123/45⑥D♯


TB1② 3 G♯/D♯
TB1②③Ⓖ♯/D♯


T123/4⑤6D♯
T123/4⑤⑥D♯


(as above)


T123/4⑤L♯


T1② /4(S)D♯
TB1② / D♯


T123/④5D♯


T1② /D♯


T123/④ 6D♯


T1 /④(S)D♯


T 1 /4(S) D#
TB 1 / D#


T123/4 5 D#


T 1 /D#


T123/4 5 D#


T 1 /D#
T 1 /D#


T123/4 6 D#


1 D#


T123/4 D#


1 / 1 D#


T123/ 6 D#


/ 1 D#


T123 G#/ 6D#


/ 2 D#


(as above)


(as above)


T123 G#/D#


T 23/456 D#


T12 3 / D#


T 23/45 6


T12 3 G#/D#


T123/45 6 D#


TB1 2 3 G#/D#
(TB1 2 3 G#/D#)


T123/4 5 6 D#


(as above)


T 1 ② /4(S) D♯
TB1 ② / D♯


T 1 ② / D♯


T 1 / ④ (S) D♯


Ⓣ 1 /4(S) D♯
TB 1 / D♯


Ⓣ 1 / D♯

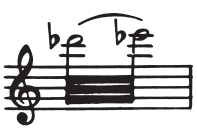

T 1 / 1 D♯
Ⓣ 1 / D♯


1 / D♯

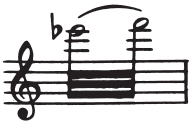

1 / 2 D♯


/ 1 D♯


/ 1 2 D♯


(as above)


T 2 3 G♯ / D♯
T 2 3 / 2 D♯



For the high G-A trill, start with the regular high G fingering, then use one of the fingerings indicated.


23G♯/ 1 D♯


23G♯/ 1 2 D♯
T②③G♯/ 45D♯


(as above)

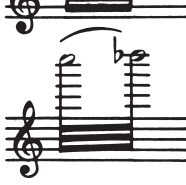

T② /4 D♯
T2 /4 2 D♯

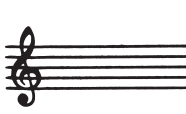

T1②3/④ 6
T23 /④⑥

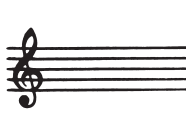

T1 3/④ 1 2
T1 / ④ 1


T1②3/5 2 6D♯


T1 3/ 2


①2③G♯/4 C♯C





Selmer (USA) Flutes

FL220B
French (open hole), sterling silver head-body-foot, silver plated keys, low B with gizmo, engraved gold-plated lip plate

FL220
Same as Fl220 except low C foot

FL210B
French (open hole), sterling silver head, silver-plated body-foot and keys, low B

FL210
Same as FL210B except low C foot

FL200B
Plateau (closed hole), sterling silver head, silver-plated body-foot and keys, low B

FL200
Same as FL200B except low C foot

FL300S
Plateau (closed hole), silver-plated head-body-foot and keys, low C

FL300N
Same as FL300S except nickel-plated

FL310
French (open hole), silver-plated head-body-foot and keys, low C

FL310B
Same as FL310 except low B

1206S
Plateau (closed hole), silver-plated head-body-foot and keys, low C

1206N
Same as 1206S except nickel-plated

Selmer®

Great Names in Music

Selmer (USA) • Selmer (Paris) • Bach
Ludwig • Musser • Glaesel • Lewis

AV4416 (Rev 11/98)

Printed in U.S.A.