



New Directions for Clarinet

Phillip Rehfeldt

R E V I S E D E D I T I O N

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New Directions for Clarinet

REVISED EDITION

PHILLIP REHFELDT

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New Directions for Clarinet, Revised Edition

THE NEW INSTRUMENTATION

BERTRAM TURETZKY AND BARNEY CHILDS, GENERAL EDITORS

1. Bertram Turetzky, THE CONTEMPORARY CONTRABASS
2. Thomas Howell, THE AVANT-GARDE FLUTE: A HANDBOOK FOR COMPOSERS AND FLUTISTS
3. Stuart Dempster, THE MODERN TROMBONE: A DEFINITION OF ITS IDIOM
4. Phillip Rehfeldt, NEW DIRECTIONS FOR CLARINET
5. John Schneider, THE CONTEMPORARY GUITAR
6. Ruth K. Inglefield and Lou Anne Neill, WRITING FOR THE PEDAL HARP: A STANDARDIZED MANUAL FOR COMPOSERS AND HARPISTS

Preface to the First Edition

The purpose, simply stated, has been to assemble material dealing with clarinet performance as it has evolved since approximately 1950: to identify or “catalogue” the practices now prevalent which differ from those formerly standardized; to provide some perspective on specific performance capabilities and limitations; and, whenever appropriate, to include suggestions for performance. It is intended as a guidebook for composers as well as a manual to which clarinetists might refer in working out problems associated with new music performance.

There are, naturally, some limiting factors. The fingering charts for micro-tones/color fingerings and multiphonics have been developed using Boehm-system instruments selected to suite my own preferences, and, although they have been tested extensively by other players, should not be thought of as being universally applicable. As with any fingering chart, they are suggestions only, helpful primarily as a starting place for determining fingerings perhaps more directly suited to specific instances.

The music bibliography was assembled to a large degree from my own library and the libraries of Professor F. Gerard Errante of Norfolk State University and John Gates of Los Angeles. It includes works for solo clarinet, clarinet with tape, multiple clarinets, clarinet and one other instrument, and clarinet with larger ensemble combinations (usually limited to five instruments but also including concertos). While extensive, it is certainly not all-encompassing, and apologies are in order for the works unfamiliar to us which also should have been included. Works for unspecified combinations in which the clarinet might be used, generally, have not been listed. The help of Errante and Gates, along with publishers Seesaw Music Corporation, Edition Modern, Hans Gerig, Editions Salabert, Theodore Presser, Chester, the American Composers Alliance, Bowdoin College Music Press, and Polskie Wydawnictwo Muzyczne, has been much appreciated.

Thanks also must go to former students Scott Vance and Walter Morgan, who brought order to the badly disarranged collection of scores that had been accumulated over the years; to Professor Raymond Wheeler of Central Washington

University for his help in the early stages of the monophonic fingering chart; to Jim Fox, Leonard Crane, and Ron Pellegrino who helped with various portions of the chapter on electronics; to Joan George, Jerry Farmer, John Neufeld, Lorraine Jorgenson, and William O. Smith for their various comments and help with the multiphonic section; to Marty Walker who assisted with difference tones and joined me in the recording thereof; and to the Faculty Research Committee of the University of Redlands for providing funds which enabled much of the preliminary investigation as well as other matters involved with preparing the manuscript for publication. Thanks also must go to coeditor Bertram Turetzky for his many helpful comments and encouragement, and especially to colleague, editor, and friend of many years Barney Childs for his numerous corrections, advice, and even for the autography of the fingering charts and many of the musical examples.

A work such as this is fast becoming obsolete even as it reaches publication. For the present, however, it is my hope that there will be some who will find it helpful.

Phillip Rehfeldt
Redlands, California
May 31, 1976

Preface to the Second Edition

The second edition, although completely rewritten, corrected, and, where necessary, updated, closely follows the format of the first. Major additions include an appendix on William O. Smith which, in addition to his early multiphonic fingerings, has been expanded to include his complete list of clarinet compositions and recordings; an appendix containing Eric Mandat's quarter tone fingerings; a second, rather extensive, bibliography of music, "International Update," which lists the works that players who to some degree have specialized in contemporary music are performing; and an updated and annotated bibliography of music literature. The fingering charts are basically as in the first edition, although, combining the last two "categories," the number of multiphonic categories has been reduced from seven to six. New musical examples have been added only where it was thought necessary to supplement those of the old edition. The "soundsheet" that accompanied the first edition has not been included in the second. Readers are referred to the many recordings of works listed in the International Update (Appendix H).

Thanks go to Bill Kennedy, Klaus Mussman, and Sandy Richey of Armacost Library for their help with locating materials, Scott Vance for his additions to and comments on the electronic chapter, again to Barney Childs for his help with the final manuscript, and to the many performers who took the time to contribute to the "international" bibliography.

Phillip Rehfeldt
Redlands, California
January 6, 1992

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Fundamentals

It is perhaps good to begin with considerations that have, since the clarinet's rise in popularity in the mid-eighteenth century, evolved as basic matters for successful performance. These include intonation characteristics, range, finger manipulations, articulation, and dynamics—all concerns of technical capabilities and limitations. The situation has always been that present generations benefit from the experiences of previous generations, and in this manner the art of performance has proceeded steadily, albeit often imperceptibly, forward. That some of the items under consideration have, over the years, undergone something of an “extension” is properly viewed as a natural and healthy part of the large, ongoing process. (Throughout the text comments, fingering diagrams, and so forth, refer primarily to the 17-key Boehm-system clarinet.)

TUNING AND INTONATION

Even though it is expected that the clarinet play in tune, the instrument is not without acoustically built-in problems. With all woodwind instruments, discrepancies arise in tuning which stem from the nature of a system in which the majority of the openings serve as vents for more than one pitch. With the clarinet, the problems are of even greater proportion because, owing to its closed-pipe characteristic, the instrument overblows a twelfth in its fundamental register, rather than the octave which is characteristic of the other instruments of the woodwind family. The clarinet, therefore, produces every other partial, the odd partials, of the normal overtone series. For these reasons, although manufacturers have improved pitch tendencies enormously in recent years, it is not possible to make an instrument that plays naturally in tune. Players must apply embouchure adjustments for pitch idiosyncrasies if acceptable intonation is to be attained.

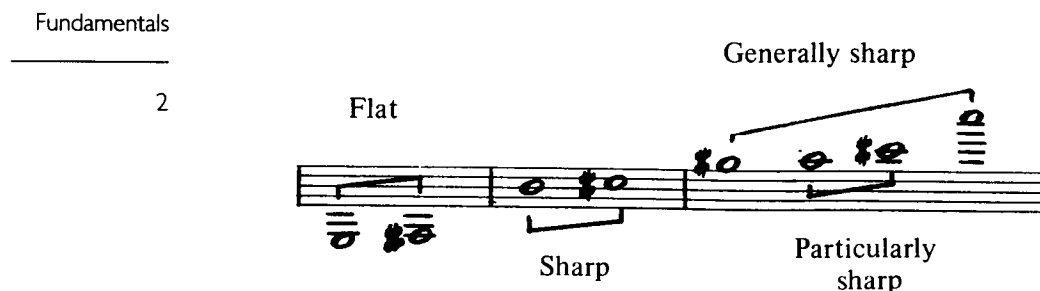
A number of designs are available, each with its own system of compromises; however, basic tendencies for the Boehm-system clarinet have become more or less standardized. The area from low E' to F-sharp' is flat.¹ This is especially so at loud dynamic levels, where raising pitch with the jaw causes the tone to become noticeably pinched. The counterpart to this area, using the same basic fingering for pitches a twelfth higher, from B'' to C-sharp'', is almost always high, a compromise with the low fundamental register. This is especially noticeable at softer levels where it is more difficult to bring the pitch down without appreciable loss in tone quality.

The tendency in the range from G-sharp''' and beyond is mostly sharp. The clarinet has this in common with the other members of the woodwind family, and perhaps necessarily so, since it is apparently natural for our ears to prefer octaves somewhat "stretched" as we proceed into altissimo regions. Piano tuners, for example, almost as a matter of course, tune high in this area in order to avoid complaints from their constituency. This type of thinking, especially when it becomes extreme, is unfortunate and is the major cause of intonation problems in orchestral/ensemble situations. Some orchestral instruments have the capacity for "stretching" more than others, and it is important to note that the clarinet is the least flexible in this respect—particularly in the low register (cf. the lip-bend chart in Chapter 4)—of any nonpercussion orchestral instrument. However, in professional circumstances where attention is given to precise tuning, the clarinetist commonly brings the pitches in the second register down.

Most clarinetists have a number of alternate fingerings for the pitches above C-sharp'', specially determined to suit whatever pitch/tone color situation is at hand. As one ascends higher into the overtone series, the distance between the partials becomes smaller and the number of fingering possibilities increases proportionately.

Because it is more locked-in with respect to pitch, the clarinet is sometimes found to be flat, usually when the overall ensemble pitch begins to rise. This is an especially important concern, because when two (or more) players are out of tune, to the untrained ear it is the lower pitch that sounds incorrect. In order to combat the situation, players generally carry a variety of barrels, ranging in length from 67 mm to around 62 or 63 mm (depending on the pitch of the mouthpiece employed). Barrels of shorter length, as well as extremely long ones, are used reluc-

Example 1.1: Boehm-system pitch tendencies.



tantly, however, because they tend to disrupt internal pitch relationships. Tuning rings can also be used.

As an aid to controlling intonation, players have found the following to be helpful. First, the embouchure is developed with control of pitch foremost in mind. In a well-designed instrument, evenness of pitch concerns the size of the oral cavity and the amount of pressure on the reed—the more open the oral cavity and the less pressure, the lower the pitch. Control is executed through movements of the jaw within a basic embouchure set. A tight throat can also affect pitch, but at the sacrifice of a well-centered sound. Greater embouchure/jaw pressure on the reed results in higher pitch but with a more pinched quality. Less pressure lowers the pitch somewhat but produces an airy, unsupported tone. The situation is always one of compromise.

A second consideration has to do with the mouthpiece and reed setup. A mouthpiece window with larger dimensions (giving a lower sound) combined with a shallower windway (giving a higher sound), for example, allows for greater flexibility with respect to pitch but, at the extremes, at the sacrifice of resonance in tone quality.² A reed that is too stiff will, by emphasizing the higher partials, result in sharpness, while a reed that is too soft, although more flexible, tends to produce the opposite result. It is important, therefore, that the reed be sufficiently flexible to allow for adequate control of pitch, yet not so thin that the sound is no longer full or capable of robustness. A change of ligature or another barrel, or bell, can also alter intonation characteristics, but to limited degrees. Players tend to search continuously for “ideal” combinations.

Today, with the availability of relatively inexpensive electronic tuners, pitch discrepancies are more easily identified and players are expected to become familiar with the peculiarities of their individual instrument(s). In the United States, where tuning at A = 440 cps has become almost universally accepted, the day of the old “high-pitched” and “low-pitched” instruments is a phenomenon of the past.

R A N G E

Normal lower ranges for the instruments of the clarinet family have remained basically unchanged in the context of today's practices. In this respect, players are, of course, dependent upon the equipment that is made available from the various manufacturers. For the E-flat sopranino, and B-flat and A sopranos, as well as the E-flat contralto, the usual lower limit is still E'. It is important to point out, however, that models are available which extend a semitone lower, but that for one reason or another, these are not widely used in the United States or in most European countries outside Italy; and that with “shading,” as suggested, for example, in the microtonal fingering chart in Chapter 2, or by inserting tubes or other objects in the lower end of the instrument, one may extend the range varying degrees lower. For bass and contrabass clarinets the normal lower limit is E-flat'. However, more and more professional players are using bass clarinets equipped with a low

written C'. This instrument has become mandatory for the growing contemporary solo repertoire. Sometimes, when E-flats for soprano clarinet or D's for bass clarinet are called for, as is common in the orchestral repertoire, and the instrument is not so equipped, objects can be inserted, like the peg on a standard instrument stand, or, for bass clarinet, something the size of a screwdriver handle or perhaps a banana.

The situation with the upper range is quite different. Many clarinetists recall the time when the high G^{'''} in Beethoven's Eighth Symphony was by and large considered the practical upward limit. Then there was Benny Goodman's influential recording *Sing, Sing, Sing*, which ended on a high C^{'''} (improvised), and today C-sharp and D^{'''} have become fairly common. Edward Cowie's *Clarinet Concerto* (1974), as well as Richard Stoltzman's 1967 dissertation, extends the range to G^{'''}, an octave above the Beethoven example, and William O. Smith's *Variants* (1963), using lower teeth placed on the reed, goes to A^{'''} above that.

The potential for producing high notes on the clarinet can vary considerably from player to player, depending (primarily) on the equipment employed. A mouthpiece-and-reed combination that amplifies the high frequencies—a larger tip opening and more closed window, coupled with a stiffer but well-balanced and often newer reed—will respond more readily in the altissimo register than a more closed mouthpiece with a softer or unbalanced reed. Players who prefer the more easily controlled but thinner sound of the closed mouthpiece / soft reed combination or the fuller, more open sound of a more open window and a more open facing, for example, commonly find the pitches above C^{'''} impossible. Also, equipment that gets the altissimo register often sacrifices tone quality in the lower registers. An obvious solution is to follow the example of bassoonists who commonly change bocals for altissimo situations (for instance the one that includes a high "E" in the Ravel G-major piano concerto), or to put the lower teeth directly on the reed, a practice which is less precise as far as attacks are concerned, but common (even mandatory) for the pitches above high C^{'''} or D^{'''}.

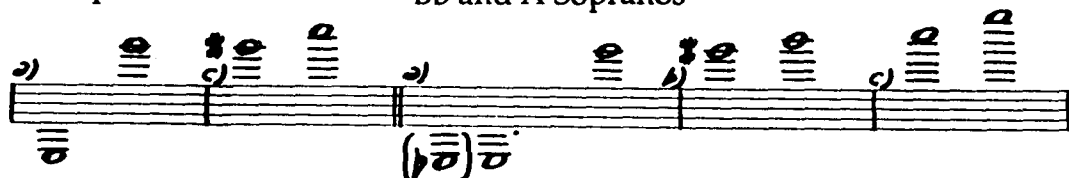
Producing the upper register requires more pressure at points farther down on the reed. In the extreme altissimo register on sopranino and soprano clarinets, with normal embouchure (lower lip over lower teeth), extended passages in the extreme altissimo register can actually hurt the lower lip. The material provided in Example 1.2 takes these matters into account.

For most soprano clarinetists, using a normal embouchure and a setup that sounds full in the lower registers, a "safe" upper limit is B^{'''}. For E-flat sopranino, pitches above G or G-sharp^{'''} tend to close off the reed. The bass clarinet, like the saxophone, perhaps owing to the larger mouthpiece and reed, has the capability of a considerably more extended altissimo range than might be suspected. In the literature, Donald Martino's *Strata* (1966) goes to a high B-flat^{'''}, Hans-Joachim Hespos's *Harry's Musike* (1972), written for the Dutch clarinetist Harry Sparnaay, goes to E^{'''} (Example 1.3), Barney Childs's *Sunshine Lunchh & like matters* (1983) goes to F^{'''}. It is worth pointing out, however, that in these examples the altissimo pitches are carefully separated from the more intricate fingerwork found

Example 1.2: Playing ranges for the clarinet family of instruments: the lower pitches that are available only on special models are enclosed in parentheses; the “fluent” range is indicated “a”; the less fluent but equally accessible upper range is indicated “b”; and the difficult area on E-flat sopranino and B-flat and A sopranos, which may require special reeds and mouthpieces or teeth on reed, as “c.”

E♭ Sopranino

B♭ and A Sopranos

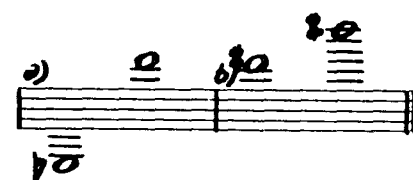


E♭ Contralto

B♭ Bass



E♭ and B♭ Contrabass



Example 1.3: Hans-Joachim Hespos, *Harry's Musike für Bassklarinette* (1972). Copyright © 1972 by Edition Modern, Franz Josef Strasse 2, Munich, Germany. Used by permission of the publisher.

wild

8va
(clar!)

pp

hart slacc.

windig

grab vor. zerren

filter-tr

mp

ff

alles andere mf-p

→6"

6"→

Example 1.4: Donald Martino, *B,a,b,b,it,t* (1966). Copyright © 1966 by Ione Press, Inc., 112 South St., Boston, MA 02111. Used by permission of the publisher.

t it b b a B

Meno mosso

out E², in C

from Don

Example 1.5: Francisco J. Castillo, *Monologue* for B-flat clarinet (1990). Copyright © 1966 by MillCreek Publications, P.O. Box 556, Mentone, CA 92359. Used by permission of the publisher.

$\text{♩} = 104$

in the lower range. For E-flat contra alto, Donald Martino's *Triple Concerto* (1977) goes to B[♭] and Terje Lerstad extends this to F[♭] and B[♭] contrabass to G[♭].³

The "classic" downward extension of the clarinet's range occurs in Donald Martino's *B,a,b,b,it,t* (1966). The work, written for B-flat soprano clarinet, calls for a set of nine tubes—the majority of which slide, producing a portamento/gλισando effect—constructed from instructions provided by the composer. These are inserted in the end of the instrument, minus the bell, and operated by grasping the tubes with the knees or by catching the end on the rim of the shoe and raising the leg. The last event (Example 1.4) extends to the bassoon low B-flat. The notation is at concert pitch.

The high C[♯] in Francisco Castillo's *Monologue* for B-flat clarinet, Example 1.5, is difficult (but not impossible) in that the work also requires a reed that sounds full and responds well in the low register.

The basset horn has been omitted from the chart in Example 1.2. It was invented by Anton and Michael Mayrhofer of Passau in 1770 and used by Mozart, Mendelssohn, and R. Strauss (*Elektra*) before falling to disuse in the early part of

the nineteenth century. It was built with a box housing three internal bore channels which produced “basset” notes, operated with the use of thumb keys. A modern instrument, developed along the lines of alto and bass clarinets, is becoming more and more common in contemporary settings. As with the original instrument, it sounds in F, a fifth lower than written. The range is from C (concert F) four ledger lines below the staff to approximately C five ledger lines above. A basset clarinet, used briefly at the time of Mozart, has also gained some popularity in contemporary music. Pitched in A, its transposed range is the same as for the basset horn.

FINGER DEXTERITY

Due perhaps to the prevalence of nontonal and serialized styles, rapid, nondiatonic passages, such as those that appear in Example 1.6, have become prevalent in the present literature. Although players may complain that more time is needed for mastery, it should be pointed out that most difficult fingerwork, when the reach is not impossible (see below), basically requires the establishment of a “balance” with respect to finger movement. The difference between the following examples and those of the traditional repertoire is mainly in the balance. New balances need to be established.

A potential pitfall with the Boehm-system clarinet should be mentioned. Because most players prefer a mechanism that provides one fingering only for A-flat'/E-flat" and C-sharp'/G-sharp" (the fundamental with its twelfth-higher overtone), rapid passagework involving the outer pitches moving to one or all three of the pitches in parentheses in Example 1.7a, all of which have duplicate fingerings, should, if possible, be avoided. The problem areas always involve both an A-flat' and a C-sharp' (or their twelfth-higher counterparts) on one or the other side of the inner pitches. Such passages require a sliding motion of either the right or left little finger, making fluent execution possible only at slower tempos. The problem can possibly be avoided if one remembers that C-sharp'/G-sharp" is always played with the left-hand little finger and that A-flat'/E-flat" uses the right. Four-note sequences, that is, using any *two* of the inner pitches, are easily maneuvered because it is possible for the fingers to alternate. Most manufacturers provide models that duplicate the A-flat'/E-flat" keys—in which case the above offers no particular problem—but, owing to the added weight and increased complexity of the mechanism, these are not widely used. Passages such as in Example 1.7b, if taken at top speed, would necessitate such a mechanism. At slower to moderate speeds, players have become quite adept at sliding.

Another type of passage that has become more common in the recent repertoire involves wide intervallic leaps (Example 1.8). These are perhaps not as difficult from the fingering standpoint as they are from that of maintaining acceptable tone quality and intonation. Execution of such passages requires slight jaw placement/pressure adjustments. Because of this, real fluency, in the sense that is possible with a more linear style of writing, is not characteristic. The slur from A''' to F' in Olly Wilson's *Echoes for Clarinet and Tape* (1974; Example 1.8b), for example, re-