

# New Directions for Clarinet

Phillip Rehfeldt

REVISED EDITION

**The New Instrumentation**  
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# New Directions for Clarinet

*Revised Edition*

Phillip Rehfeldt

*The New Instrumentation, No. 4*



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## 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.<sup>1</sup> 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.

Fundamentals

---

2

Flat

Sharp

Particularly sharp

Generally sharp

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.<sup>2</sup> 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 soprano, 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<sup>'''</sup> 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<sup>'''</sup> (improvised), and today C-sharp and D<sup>'''</sup> have become fairly common. Edward Cowie's *Clarinet Concerto* (1974), as well as Richard Stoltzman's 1967 dissertation, extends the range to G<sup>'''</sup>, an octave above the Beethoven example, and William O. Smith's *Variants* (1963), using lower teeth placed on the reed, goes to A<sup>'''</sup> 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<sup>'''</sup> 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<sup>'''</sup> or D<sup>'''</sup>.

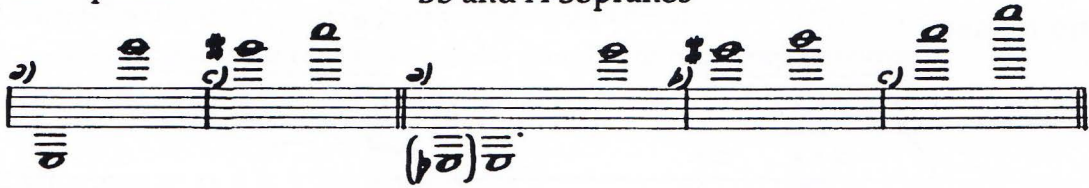
Producing the upper register requires more pressure at points farther down on the reed. In the extreme altissimo register on sopranino and soprano clarinets, with normal embouchure (lower lip over lower teeth), extended passages in the extreme altissimo register can actually hurt the lower lip. The material 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<sup>'''</sup>. For E-flat sopranino, pitches above G or G-sharp<sup>'''</sup> 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<sup>'''</sup>, Hans-Joachim Hespos's *Harry's Musike* (1972), written for the Dutch clarinetist Harry Sparnaay, goes to E<sup>'''</sup> (Example 1.3), Barney Childs's *Sunshine Lunchh & like matters* (1983) goes to F<sup>'''</sup>. 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 soprano and B-flat and A sopranos, which may require special reeds and mouthpieces or teeth on reed, as "c."

E♭ Soprano

B♭ and A Sopranos



E♭ Contralto

B♭ Bass



E♭ and B♭ Contrabass



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

wild

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 E<sup>7</sup>, 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<sup>b</sup> and Terje Lerstad extends this to F<sup>b</sup> and B<sup>b</sup> contrabass to G<sup>b</sup>.<sup>3</sup>

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/glis-sando 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<sup>'''</sup> 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-



Example 1.6: Rapid chromatic passages.

a) Bruno Bettinelli, *Studio da Concerto* (1971). Copyright © 1972 by G. Ricordi & C.S.P.A., Via Berchet 2, Milan, Italy. Used by permission of the publisher.

*a tempo e movendo a poco a poco*

*pp*

*cresc. e accel.*

*accel. molto* *ff* *p*

(b) William Sydeman, *Piece for Clarinet and Tape* (1970). Copyright © 1976 by Seesaw Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.

*A tempo (♩ ca. 175)*

*f*

*mf* *ff*

Fundamentals

8

quires a rather large jaw movement, and although not absolutely necessary, some players might prefer to tongue the low F' lightly, in order to help the response.

And finally, it is important to note that extended passages in the altissimo range generally require slower tempos than in the lower ranges. Here, the clarinetist is involved with "cross" fingerings in a range that responds less securely. Two excerpts of this type are presented in Example 1.9. Although playable, most players would consider them "advanced."

Example 1.7: Problematic little finger combinations.

(a)

(b)

Example 1.8: Disjunct passages.

(a) Harold Oliver, *Discourses for A Clarinet Alone* (1967, ms).

(b) Olly Wilson, *Echoes for Clarinet and Tape* (1974, ms).

Example 1.9: Difficult passages in the altissimo register.

(a) Peter Griffith, *Classic for Clarinet and Laser* (1969, ms).

AS FAST AS POSSIBLE

sempre *ff*

<

This musical score is written on a single staff with a treble clef and a key signature of one sharp (F#). The music is in the altissimo register, with notes clustered between the 8th and 12th ledger lines. The tempo marking 'AS FAST AS POSSIBLE' is written above the staff. The dynamic marking 'sempre ff' is written below the staff. The piece concludes with a fermata and a less-than sign (<).

(b) Arline Diamond, *Composition for Solo Clarinet* (1963). Copyright © 1964 by Tritone Press, Box 158, Southern Station, Hattiesburg, MS 39401. Used by permission of the publisher.

8<sup>v</sup>

cresc →

accel. →

8<sup>v</sup>

*ff*

This musical score is written on two staves with a treble clef and a key signature of one sharp (F#). The music is in the altissimo register, with notes clustered between the 8th and 12th ledger lines. The first staff begins with a dynamic marking of 8<sup>v</sup> and includes markings for 'cresc →' and 'accel. →'. The second staff begins with a dynamic marking of 8<sup>v</sup> and 'ff'. The music features complex rhythmic patterns and articulation marks.

## ARTICULATION

Articulation on wind instruments is primarily a concern of attack and release. With the clarinet, as with other wind instruments, this is controlled largely by an action of the tongue: the tip of the tongue, at the flat surface on the top, touches the reed, momentarily damping its vibration, causing the tone to be initiated (and sometimes terminated) in a manner consistent with the stylistic requirements of the passage. The force of the release of the tongue on the reed, coupled with the amount of blowing, determines whether the attack is loud and forceful, soft and legato, or somewhere between. Releases on sustained pitches are generally accomplished with a simple termination of the wind. With more rapid, perhaps staccato, passages, the space between the pitches is determined by the amount of time that the tongue remains on the reed at its return for the next attack—called “closing off.” Wind players are taught to articulate (or “tongue”) all pitches which are not tied or slurred.

Fundamentals

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The speed at which players are able to repeat such movements is subject to

Example 1.10: Rapid tonguing.

(a) Harold Oliver, *Discourses for A Clarinet Alone* (1967, ms).

(♩ = 10)

*always very light and staccato*

*speed may vary between ♩ & ♩.*

(b) Donald Martino, *A Set for Clarinet* (1954). Copyright © 1957 by McGinnis & Marx, 201 West 86th St., New York, NY 10024. Used by permission of the publisher.

(c) Dorrance Stalvey, *PLC—Extract* (1968). Copyright © 1975 by Editions Salabert, Inc., 575 Madison Ave., New York, NY 10022. Used by permission of the publisher.

*as fast as possible - detached*

individual differences. However, for a majority of players it might be generalized that an upper limit lies between 138 and 144 quarter note beats per minute for reiterated sixteenth notes. Control of this movement for every metronome setting along the way commonly requires considerable practice and is a standard part of the technical training. Some illustrations of various types of articulation are provided in Example 1.10. The Martino example (Example 1.10b) combines rapid tongue with linear finger movement (note also that the style changes from forceful to legato), and the Stalvey (Example 1.10c) with a disjunct finger pattern.

Double and triple tonguing, which is commonplace on the flute and rapidly becoming common, particularly double tonguing, on the oboe and bassoon, has been mastered by only relatively few clarinet and saxophone players. The advice to young players, however, is to practice it. There are places in the contemporary as well as the traditional literature where it is useful. On soprano clarinet, it works best in the low register. It is possible to approximately C".

Owing to the many problems and ambiguities encountered with most nota-

Example 1.11: 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.

The image shows a musical score for a clarinet. The top staff is a treble clef with a key signature of one sharp (F#). It contains several measures of music with various articulation symbols above the notes, including accents (^), slurs, and dynamic markings: *f*, *ff*, and *mp*. The word "ritardando" is written above the staff. Below the staff, there are two instructions: "shift A to G#" and "out G#". The bottom staff shows a bass clef with a key signature of one sharp (F#) and some notes with articulation symbols.

tional systems, the particular character of an attack or release has traditionally been left, for the most part, to the “intuitive” discretion of the performer. Steps toward incorporating greater precision in this respect have been taken by Donald Martino. A clarinetist as well, Martino has suggested the following: ▼ = tat, • = tad, • = ta, —• = dat, ~ = dad, — = da, h = hat, h = had, h = ha, ^ = at, ^ = ad, and ^ = a.<sup>4</sup> An example from *B,a,b,b,it,t* (1966) provides an illustration (Example 1.11; see also Example 1.4). Others can be found in Martino’s *Strata for Bass Clarinet* (1966) and in his *Concerto for Wind Quintet* (1974).

Ingolf Dahl, in *Invention on a Rhythm* from *Five Duets for Clarinets* (1970), uses the following symbols for more distinctive articulation: > = sfpp; v or ^ = mf, pp; — = tenuto tonguing; — or — = semi-detached; • = staccato; > or > = mf staccato accent; v or ^ = p staccato accent.

## D Y N A M I C S

Through the years, various attitudes have prevailed with respect to dynamics. Prior to the seventeenth century they, of course, were not indicated, leaving the matter up to the performer. Later, notated distinctions between loud and soft gradually led to such extremes as the well-known passage in Tchaikovsky’s Sixth Symphony, with pppppp written (in the low register) for solo bassoon.

Perhaps because of such extreme practices as those represented by the Tchaikovsky example, players must often view dynamics on a sliding scale, largely influenced by the performance situation. To the the orchestral bassoonist (although this passage is sometimes taken on the bass clarinet) pppppp means as soft as possible relative to a person in the audience; s/he would undoubtedly play the same passage considerably more softly (if s/he could) in the context of a closer “chamber” environment. Furthermore, an attempt to perform the dynamics in a more absolute sense, that is, with twelve distinct subdivisions between pppppp and ffff (Tchaikovsky’s loudest indication), does not seem appropriate.

However, there are a number of examples in the recent repertoire, such as the one presented in Example 1.12, which do suggest a more precise approach to dynamics. Here, if the composer’s intentions are to be accurately represented, the

Example 1.12: J. Mestres Quadreny, *Duo per a manolo* (1964). Copyright © 1969 by Seesaw Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.

player must distinguish clearly between each of the various levels indicated. Naturally, the difficulty increases with the range of levels requested. For wind instruments, a division of eight, i.e., from ppp to fff, although difficult, seems workable, and players are beginning to incorporate appropriate exercises into their various practice routines.

The ppp dynamic can be defined as the softest possible, yet still capable of projection, and fff as the loudest possible before distortion. Such indications as “subtone” or “raucous” or “distorted tone” are then taken as outside this eight-level categorization, with the former an extremely soft, airy sound, and the latter perhaps beyond the realm of “discrete” popular acceptance.

## ENDNOTES

1. Since reference is made to pitches that occur on one or another member of the clarinet family of instruments, i.e., pitched primarily in E-flat, B-flat, or A, a pitch-labeling system has been adopted throughout the text which labels pitches according to the octave in which they sound, transposed, on the instrument:

e' - d'      e'' - d''      e''' - d'''      e'''' - d''''

Fundamentals

2. Realizing the enormous range of individual preferences, few manufacturers supply high-quality mouthpieces even with their top-quality instruments. Players must seek high-quality mouthpieces elsewhere. The material from which the mouthpiece is made, incidentally, also affects the quality of the tone.

3. Terje Lerstad (“Altissimo-Register Fingerings for the Contrabass Clarinet,” *The Clarinet*, vol. 18, no. 3 [May-June 1991], 30-31) provides an excellent fingering chart for the altissimo registers of both the E $\flat$  contra alto and the B $\flat$  contrabass clarinet. Lerstad

and Thomas Aber's bass clarinet fingering chart ("Bass Clarinet Altissimo Register Fingerings," *The Clarinet*, vol. 9, no. 4 [Summer 1982], 39-41) should also be mentioned.

4. Donald Martino, "Notation in General—Articulation in Particular," *Perspectives of New Music* (Spring-Summer 1966), 47-58; reprinted in Benjamin Boretz and Edward T. Cone, eds., *Perspectives on Notation and Performance* (New York: W. W. Norton, 1976), 102-13.

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## Monophonic Fingerings

This section deals primarily with microtones and harmonic or “color” tones. Fingering charts containing eighth-tone/color fingering suggestions for E-flat soprano and sopranos in B-flat and A, and a chart containing eighth-tone/color fingerings for the bass clarinet are provided at the end of the chapter.

### MICROTONAL PITCH MODIFICATIONS

Intervals smaller than the semitone have long been a part of the music of Eastern cultures, were used in early Greek civilization and in the singing of medieval chants, were implied with the sixteenth-century arcicembalo, and are found in the music of Carrillo and Ives and discussed in the writings of Busoni. Alois Hába wrote a *Suite for Quartertone Clarinet and Quartertone Piano* in 1924, and quarter tones and other microtonal divisions continue to play an important role in contemporary musical practices.

The five examples in 2.1 illustrate quarter tone modifications used in (a) an essentially linear pattern, followed by a series of “color” or “resonance” fingerings; (b) more disjunct patterns and with a different type of notation where the filled-in notes are sharp and the half filled-in notes are quarter tones; (c) Eric Mandat’s rapid style of linear modifications (see Appendix B for Mandat’s more “facile” quarter tone fingering chart); (d) Stockhausen’s *Suzani* (1984) for basset horn using fingerings by Suzanne Stephens; and (e) the fourth movement of Barney Childs’ *A Music; That It Might Be . . .* (1973) for clarinets (in B-flat and A) tuned a quarter tone apart.



Example 2.1: Quarter tones.

(a) Dorrance Stalvey, *PLC—Extract* (1968). Copyright © 1975 by Editions Salabert, Inc., 575 Madison Ave., New York, NY 10022. Used by permission of the publisher.

Musical score for Example 2.1(a) showing a single staff with quarter tones and fingerings. The notation includes a tempo marking of *Tempo* and a dynamic marking of *ff* (smp). Fingerings are indicated by 'R' and 'G#'. Below the staff, there are vertical diagrams of a hand with dots representing finger positions for each note.

(b) Larry Austin, *Current for Clarinet and Piano* (1964). Copyright © 1964 by Composer Performer Edition, 739 Miller Dr., Davis, CA 95616. Used by permission of the publisher.

Musical score for Example 2.1(b) showing a clarinet and piano accompaniment. The clarinet part features quarter tones and dynamic markings of *mf*, *f*, *p*, *f*, *pp*, and *pp*. The piano accompaniment is shown in grand staff notation. Fingerings are indicated by 'A', 'G#', 'E', 'A', and 'C#'. Below the clarinet staff, there are vertical diagrams of a hand with 'x' and 'o' marks representing finger positions.

(c) Eric Mandat, *Folk Songs* (1986). Copyright © 1986 by Cirrus Music, P.O. Box 61, Carbondale, IL 62903. Used by permission of the publisher.

Musical score for Example 2.1(c) showing a single staff with quarter tones and fingerings. The tempo is marked as  $\text{♩} = 120$ . The dynamic marking is *ff*. Fingerings are indicated by 'R'. Below the staff, there are vertical diagrams of a hand with dots representing finger positions for each note.

Example 2.1: (Continued).

finger low notes and overblow to sustain G

(7)

mp

f

(d) Karlheinz Stockhausen, *Suzani* für Bassethorn (1984). Copyright © 1991 by Stockhausen Verlag, 5067 Kürten, Germany. Used by permission of the publisher.

mit Bassethorn  
piepen wie ein  
klagender  
Vogel

(staccato in  
diesem Takt  
länger als  
sonst)

53,5 in  $\frac{1}{4}$ -Ton-Stufen

rit.

p

(e) Barney Childs, *A Music: That It Might Be ...* (1973). Copyright © 1976 by Okra Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.

♩56

B $\flat$

A

ff sombre

ff sombre

\*: add low E key

dim. . . . . to . . . . . silence

mp

p dim to . . . . . silence

2 to B $\flat$  clarinet

\*: start pitch lipped up (try for unison with ch. 1) and relax pressure to regular pitch

\*\* : all pitches will sound  $\frac{1}{4}$  tone flat from notation.

The examples in 2.2 illustrate divisions smaller than the quarter tone, often combined with quarter tones. The Dahl excerpt (a) uses quarter tones above and below, followed by a single eighth tone to define the final D'. The Childs example (Example 2.2b) combines quarter and eighth tones; Example 2.2c uses a final eighth tone in a context that requires very accurate pitch in the preceding passage in order to create the effect intended. Ben Johnston's *Ponder Nothing* (1989; Example 2.2d) is written in "extended just intonation" explained as follows:

Just intonation is simply the easiest way to tune musical intervals by ear. It results in greatly heightened purity and clarity of sound for two reasons: first, it eliminates acoustic beats to the maximum possible, and second, it exploits resonance by utilizing harmonically simple combinations of pitches. The term "extended" refers to the use of higher overtones than the first six partials, which are the basis of harmony in traditional tonal (triadic) music, and to more than usual use of combined symbols of alteration such as double and triple sharps or flats. The notational symbols I have devised are explained elsewhere. They provide a precisely accurate description of what the extended just intonation requires. The actual realization is achieved by ear.

As a first step the pitches should be approximated without regard to the unfamiliar signs. The purity and simplicity of maximum resonance should be

Example 2.2: Eighth tones.

(a) Ingolf Dahl, *Five Duets for Clarinets* (1970). Copyright © 1974 by Joseph Boonin, Inc., P.O. Box 2124, South Hackensack, NJ 07606. Used by permission of the publisher.

196+

strictly in time

\*\* (a) (b) (c)

The intention here is:  $D_4^\sharp$   $D_4^b$   $D_4$  (on pitch) (The fingerings are the composer's suggestions.)

(b) Barney Childs, *Trio for Clarinet, 'Cello, and Piano* (1973). Copyright © 1975 by Basheve Music, 23149 Oakbridge Ln., Newhall, CA 91321. Used by permission of the publisher.

one smooth even gesture

(c) Barney Childs, *Concerto for Clarinet and Orchestra* (1970). Copyright © 1970 Barney Childs. Reprinted by permission of the American Composers Alliance, 170 West 74th St., New York, NY 10023.

(d) Ben Johnston, *Ponder Nothing* (1989). Copyright © 1990 by MillCreekPublications, P.O. Box 556, Mentone, CA 92359. Used by permission of the publisher.

sought. The plusses and minuses can safely be ignored if this is done carefully, since they serve to show where traditional harmonies, in order to be just tuned, result in slight raising and lowering pitches in order to avoid beats.

Next the arrows (up and down) and the **7**'s and **L**'s should be added to refine the pitch accuracy. These symbols alter pitch by amounts very close to a tempered quarter tone, so that many pitches will approximate notes in a twenty-four-tone tempered scale. Fine tuning is again achieved by seeking maximum resonance and beat-free intervals.

Lastly, the **l3** and **εl** symbols should be accounted for. These alter by approximate eighth-tones, and can be regarded as shading to the sharp or flat side of a pitch, but not one great enough to introduce any ambiguity as to which pitch it is.

Vertical listening is the main clue to accuracy. Harmonic aggregates are either combinations of overtones or of undertones (a theoretical ordering which is the exact inversion of the overtone series). These two kinds of chords

Monophonic  
Fingerings

serve much as major and minor do in more traditional music. When such an aggregate is in tune, the ear readily perceives the increase in clarity and resonance.

In certain compositions I have employed even higher overtone relationships. In such cases bear in mind that the partials of the series get closer and closer together as one ascends the series, and each new octave of the series repeats the previous octave with a new note in between each pair of notes from the previous octave. Thus the higher octave has double the number of notes as the next lower octave. From the eighth through the sixteenth partials the size of the intervals between adjacent notes gradually increases from a whole tone to a half-tone. By the same logic the size of the adjacent intervals between the sixteenth and thirty-second partials gradually increases from a half-step to a quarter-step. The new note interpolated between two notes both present in a lower octave is a little on the high side of midway between them. For example, say the lower octave provides G and C (in ascending order). Then the next octave will provide, between these two notes, B, which is just enough higher than the quarter tone between A and B $\flat$  to sound definitely a B $\flat$  and not an A.

The aim of all this is to provide a harmonic logic to the ear which is even more compelling than traditional tonal logic. It incidentally enlarges the pitch resources.

Ben Johnston, *On the Performance Practice of Extended Just Intonation*

## COLOR FINGERINGS

Also known as “harmonic” or “resonance” fingerings, “color fingerings” produce essentially the same pitch as a normal (or microtonal) fingering, but with the timbre modified based on the acoustical qualities of the altered finger combinations. Color fingerings often have uneven dynamic/resonance qualities, usually (but not always) more muffled than the normal fingering (Example 2.3a). Trills (Example 2.3b) and sometimes tremolos, depending upon the accessibility of the fingering, are also possible. The *Errante* example (Example 2.3c) uses special fingerings in order to produce “covered sounds.”

Example 2.3: Color fingerings.

(a) Ronald Caravan, *Excursions for A Clarinet* (1974). Copyright © 1976 by Seesaw Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.

The musical notation shows a sequence of seven notes on a single staff, all under a slur. The notes are: G $\sharp$  (quarter), A $\sharp$  (quarter), B $\sharp$  (quarter), C $\sharp$  (quarter), D $\sharp$  (quarter), E $\sharp$  (quarter), and F $\sharp$  (half). Dynamics are indicated below the notes: *p*, *pp*, *f*, *pp*, *f*, *pp*, and *ppp*. Below the staff, fingerings are shown as diagrams of five fingers (N, 2, 1, 3, F) with circles indicating finger placement. The first note uses fingers 2 and 1. The second note uses fingers 2, 1, and 3. The third note uses fingers 2, 1, 3, and F. The fourth note uses fingers 2, 1, 3, and F. The fifth note uses fingers 2, 1, 3, and F. The sixth note uses fingers 2, 1, 3, and F. The seventh note uses fingers 2, 1, 3, and F. The final note is marked 'niente'.

(b) Dorrance Stalvey, *PLC—Extract* (1968). Copyright © 1975 by Editions Salabert, Inc., 575 Madison Ave., New York, NY 10022. Used by permission of the publisher.

(c) F. Gerard Errante, *Fantasy for Barney* (1990). Copyright © 1990 by Mill Creek Publications, P.O. Box 556, Mentone, CA 92359. Used by permission of the publisher.

## EIGHTH TONE AND COLOR FINGERING SUGGESTIONS

Most clarinet pitches may be modified to some degree with facial adjustments alone, known as “lipping up,” or “down.” However, where more distinctive microtonal adjustments are called for, special fingerings can be devised. The computer tells that there are 373,248 possible finger combinations on the clarinet, not including half holes, most of which are capable of producing distinctive sounds. A sampling of such possibilities, therefore, is provided on the following charts. Before proceeding, however, it is important that some perspective be drawn regarding fingering charts in general.

Except for those relatively few situations with only one choice, no fingering for any woodwind instrument should be considered an absolute. There are too many variables. The particular instrument employed, the barrel, the mouthpiece and reed combination, and even the physical structure of the player contribute to produce a result that is highly individual, one that can differ significantly from player to player. Manufacturers’ designs vary in such matters as size of bore, acoustical compromises in intonation, and even the fingering system employed. Measurements, even with instruments by the same manufacturer, are often not uniform, owing in part to the fact that the extremely dense wood used for clarinets

causes tools to dull quickly. For these reasons, it is common for players to have their instruments “customized” either to correct inherent deficiencies or to accommodate individual preferences with intonation and tone quality.

It is also standard practice among clarinetists to use a mouthpiece other than that supplied by the manufacturer. Although studies have been made which indicate that professionals seem to use similar facing measurements,<sup>1</sup> there can still be a great deal of discrepancy among players, and mouthpiece makers generally supply at least three categories of openings. It is common for these mouthpieces to be refaced to suit individual requirements. Even more crucial than the facing dimensions are those of the bore, windway, and window, all of which vary significantly from player to player. The mouthpiece is then matched to the instrument, almost by a trial-and-error process. What produces good results on one instrument will not necessarily prove as effective on another. The same is true of the barrel, which is second only to the mouthpiece in its effect on intonation, tone quality, and response. Players’ use of a variety of strength and cuts of reeds is another factor that hinders standardization. The cane itself is not a stable factor even with reeds cut from the same tube. It is also highly affected by changes in climatic and atmospheric conditions.

It is not difficult to see, therefore, that although a number of fingerings have become “standardized,” a fingering chart is primarily a place to begin. The problems, of course, become magnified with intervals smaller than the semitone, and even more with sonorities involving more than one pitch (multiphonics).

## FINGERING CHARTS

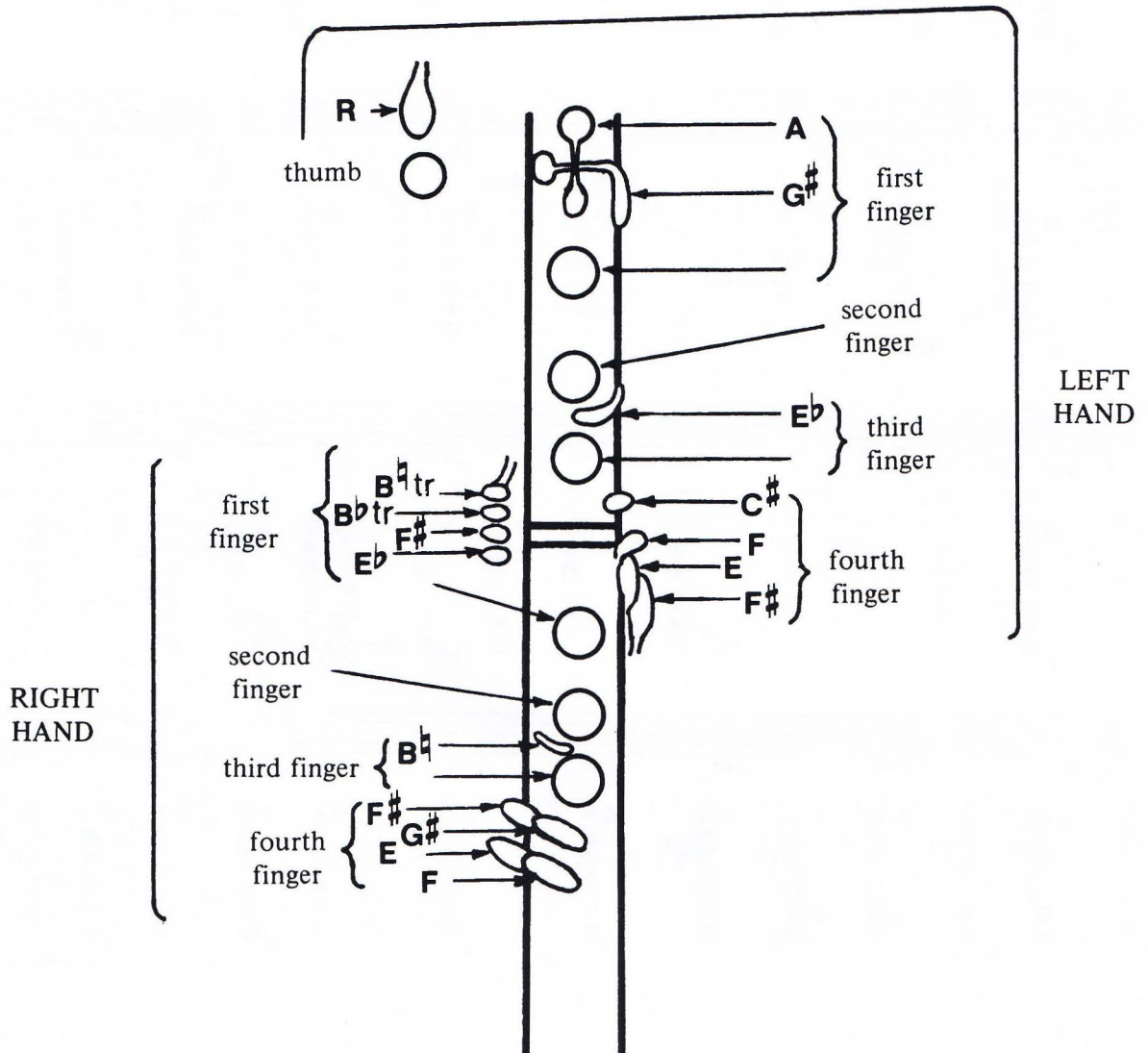
In the charts which follow + indicates that the pitch is slightly raised (approximately an eighth tone), and – indicates that the pitch is approximately the same amount lower;  $\sharp$  ( $\natural$   $\flat$ ) indicates that the pitch is a quarter-tone higher, and  $\flat$  ( $\natural$   $\sharp$ ) that it is lowered a quarter of a tone. An asterisk above indicates that the pitches are fluid in nature, i.e., that they do not “lock in” at a definitely prescribed point, as is characteristic of the majority of the fingerings. The asterisk is also used to indicate, in instances where no better fingering is available, a type of limited-range portamento, produced by carefully “shading” the keys and fingers—also legs, ankles, knees, and thighs—above the prescribed openings. The asterisked pitches, of course, require considerable time to set up and are much less accurate than the other fingerings. When only soft dynamics are possible, the indication *pp* is used. The notation is as it sounds on the various instruments. Color (or timbre) is generally not even throughout.

It will be noticed that, when possible, a number of alternative fingerings have been provided. These are intended as resource material for timbral modifications (“color tones”), as well as additional choices for microtonal adjustments. The charts, therefore, do not include the standard alternate fingerings which are used to facilitate finger movement, i.e., the keys which duplicate left- and right-hand little fingers.

The “-e $\flat$ ” and “-a” markings indicate that the fingerings do not work on E-flat soprano and A soprano clarinets, respectively; *these indications are not to be taken as part of the fingering diagram*. Supplemental fingerings for E-flat and A instruments are also provided. The charts have been developed using standard 17-key Boehm-system clarinets.

The keys on the fingering diagram are named for the pitches they produce in the lowest register and are placed in approximately the same position as on the instrument. This creates a more convenient type of tablature notation, one that players can recognize instantly, obviating the necessity of constantly having to refer back to a fingering ledger. Most players, incidentally, feel more comfortable with microtonal as well as multiphonic fingerings when the fingering also appears with the sonority—whether it has been provided by the composer or added at a later time by the performer.

Fingering diagram.





Sopranos in B $\flat$  and A (and E $\flat$  sopranino).

Squeeze bell between thighs

Control "E" opening by pressing against right leg

Press "F#" opening with left thigh, obtaining leverage between the thigh and the "F#" finger

Press the "F#" opening with the left thigh as before

Press left knee against the "G#" opening, obtaining leverage with the R.H. little finger as before

Delicately shade the R.H. third finger over the "A" opening

Shade the R.H. first finger over the "C" opening

pp

-e $\flat$

Sopranos in B $\flat$  and A (and E $\flat$  sopranino)—continued.

First staff of guitar tablature. It contains ten chord diagrams. The notes are: E $\flat$ , C $\sharp$ , F, E, E, B $\flat$ , E $\flat$ , E, F. There are dynamic markings  $\#0$  and  $\flat0$  above the staff.

Second staff of guitar tablature. It contains ten chord diagrams. The notes are: G $\sharp$ , E $\flat$ , E $\flat$ , C $\sharp$ , E $\flat$ , C $\sharp$ , C $\sharp$ , E $\flat$ , C $\sharp$ , E $\flat$ . There are dynamic markings  $\#0$  and  $\flat0$  above the staff. Some diagrams are labeled "Ring only" and "pp".

Third staff of guitar tablature. It contains ten chord diagrams. The notes are: F, E, E, E, F, F, F $\sharp$ . There are dynamic markings  $\flat0$  and  $\#0$  above the staff. Some diagrams have a  $-e\flat$  marking below them.

Fourth staff of guitar tablature. It contains ten chord diagrams. The notes are: B $\flat$ , E $\flat$ , C $\sharp$ , C $\sharp$ , F $\sharp$ , G $\sharp$ , E, E $\flat$ , C $\sharp$ . There are dynamic markings  $\flat0$ ,  $\#0$ , and  $\#0$  above the staff. Some diagrams have  $-e\flat$  and  $-a$  markings below them.

Fifth staff of guitar tablature. It contains ten chord diagrams. The notes are: G $\sharp$ , C $\sharp$ , G $\sharp$ , F $\sharp$ , G $\sharp$ , F, G $\sharp$ , R, C $\sharp$ . There are dynamic markings  $\#0$ ,  $\flat0$ , and  $\#0$  above the staff. Some diagrams have  $-a$  and (F) markings below them.

Sopranos in B $\flat$  and A (and E $\flat$  soprano)—continued.

Staff 1: Musical notation with fingerings and dynamics. Fingerings include G $\sharp$ , R, B $\flat$  tr, F $\sharp$ , E $\flat$ , and G $\sharp$ . Dynamics include *pp* and *a*. Includes a trill symbol and a circled note.

Staff 2: Musical notation with fingerings and dynamics. Fingerings include G $\sharp$ , R, F $\sharp$ , E $\flat$ , and B $\flat$  tr. Dynamics include *pp*.

Staff 3: Musical notation with fingerings and dynamics. Fingerings include R, G $\sharp$ , B $\flat$  tr, C $\sharp$ , B $\flat$  tr, A, F $\sharp$ , E $\flat$ , B $\flat$  tr, and B $\flat$  tr. Dynamics include *pp*.

Staff 4: Musical notation with fingerings and dynamics. Fingerings include B $\flat$  tr, G $\sharp$ , R, B $\flat$  tr, R, A, A, B $\flat$  tr, B $\flat$  tr, B $\flat$  tr, G $\sharp$ , R, B $\flat$  tr, B $\flat$  tr, B $\flat$  tr, and B $\flat$  tr. Dynamics include *pp* and *a*.

Staff 5: Musical notation with fingerings and dynamics. Fingerings include B $\flat$  tr, G $\sharp$ , R, A, B $\flat$  tr, B $\flat$  tr, R, E, B $\flat$  tr, G $\sharp$ , R, A, B $\flat$  tr, B $\flat$  tr, R, A, B $\flat$  tr, B $\flat$  tr, A, A, B $\flat$  tr, B $\flat$  tr, G $\sharp$ , R, A, B $\flat$  tr, and B $\flat$  tr. Dynamics include *pp* and *a*. Includes circled notes (F).

Sopranos in B $\flat$  and A (and E $\flat$  soprano)—continued.

Diagram showing fingerings for notes: R A, B $\flat$ tr, R, B $\flat$ tr, B $\flat$ tr, G $\sharp$ , R A, B $\flat$ tr, A, B $\flat$ tr, R, B $\flat$ tr, G $\sharp$ , R A, B $\flat$ tr, R, B $\flat$ tr, G $\sharp$ , R A, B $\flat$ tr, R, B $\flat$ tr, G $\sharp$ , R A, B $\flat$ tr. Includes a trill key symbol (-e $\flat$ ) and a note F.

Diagram showing fingerings for notes: R, F $\sharp$ , F, R, E, F $\sharp$ , R, G $\sharp$ , F $\sharp$ , R, G $\sharp$ , B $\flat$ tr, G $\sharp$ , F $\sharp$ . Includes text: "Press 'C $\sharp$ ' opening with left thigh, obtaining leverage between the thigh and the little finger as for F $\sharp$  below" and "With bell resting on knee, reach up with R. H. thumb to activate the 'B $\flat$ ' trill key. Access limited".

Diagram showing fingerings for notes: R, F $\sharp$ , R, G $\sharp$ , R, G $\sharp$ , R, E, R, E, R, G $\sharp$ . Includes text: "Press the 'C $\sharp$ ' opening against the left knee obtaining leverage with L.H./R.H. little finger as for F $\sharp$  below" and "(lip down)".

Diagram showing fingerings for notes: R, E, B $\flat$ tr, G $\sharp$ , R, F, R, F $\sharp$ , R, F, R, G $\sharp$ , R, F $\sharp$ , R, B $\flat$ tr, R.H. thumb. Includes text: "Played with R. H. thumb".

Diagram showing fingerings for notes: R, G $\sharp$ , R, G $\sharp$ , R, G $\sharp$ , R, C $\sharp$ , R, F $\sharp$ , R, G $\sharp$ , R, G $\sharp$ , R, G $\sharp$ , R, B $\flat$ tr, R, B $\flat$ tr, R, G $\sharp$ . Includes text: "-a", "-e $\flat$ ", "-a", "-e $\flat$ ", "-e $\flat$ ", "-a", "-e $\flat$ ", "-e $\flat$ ".

Sopranos in B $\flat$  and A (and E $\flat$  soprano)—continued.

The image displays five systems of guitar tablature for soprano saxophone. Each system consists of a five-line staff with various fret numbers and notes indicated by letters (R, E $\flat$ , C $\sharp$ , G $\sharp$ , F, E) and dots. The diagrams are arranged in a grid-like fashion across the systems. Some diagrams include the text "R.H. ring only" next to the ring finger position (the second line from the top). The tablature is organized into five systems, each containing multiple diagrams. The first system has 12 diagrams, the second has 12, the third has 10, the fourth has 10, and the fifth has 12. The diagrams show various chord voicings and melodic lines across the fretboard.

Sopranos in B $\flat$  and A (and E $\flat$  soprano)—continued.

The tablature is organized into five systems, each with six-line staves. The notation includes various fret positions and techniques:

- System 1:** Starts with a treble clef and a key signature of one sharp (F#). It contains 10 measures of music. Fret positions include R, E $\flat$ , F $\sharp$ , and G $\sharp$ . Dynamic markings include  $\underline{p}$  and  $\underline{f}$ .
- System 2:** Continues with 10 measures. Fret positions include R, E $\flat$ , F $\sharp$ , G $\sharp$ , and B $\flat$  tr. Dynamic markings include  $\underline{p}$  and  $\underline{f}$ .
- System 3:** Continues with 10 measures. Fret positions include R, G $\sharp$ , F, and E $\flat$ . Dynamic markings include  $\underline{p}$  and  $\underline{f}$ .
- System 4:** Continues with 10 measures. Fret positions include R, E $\flat$ , F $\sharp$ , G $\sharp$ , and B $\flat$  tr. Dynamic markings include  $\underline{p}$  and  $\underline{f}$ .
- System 5:** Continues with 10 measures. Fret positions include R, A, B $\flat$  tr, and F. Dynamic markings include  $\underline{p}$  and  $\underline{f}$ .

Sopranos in B $\flat$  and A (and E $\flat$  soprano)—continued.

The musical score consists of five systems, each representing a line of music for the soprano. Each system contains several measures of music, with chord diagrams and dynamic markings.

- System 1:**
  - Measure 1:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 2:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 3:  $\text{A}$  (Dynamic:  $\text{p}$ )
  - Measure 4:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 5:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 6:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 7:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 8:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 9:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 10:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 11:  $\text{R}$  (Dynamic:  $\text{p}$ )
- System 2:**
  - Measure 1:  $\text{B}^\flat\text{tr}$  (Dynamic:  $\text{p}$ )
  - Measure 2:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 3:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 4:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 5:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 6:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 7:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 8:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 9:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 10:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 11:  $\text{A}$  (Dynamic:  $\text{p}$ )
  - Measure 12:  $\text{R}$  (Dynamic:  $\text{p}$ )
- System 3:**
  - Measure 1:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 2:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 3:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 4:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 5:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 6:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 7:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 8:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 9:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 10:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 11:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 12:  $\text{R A}$  (Dynamic:  $\text{p}$ )
- System 4:**
  - Measure 1:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 2:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 3:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 4:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 5:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 6:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 7:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 8:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 9:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 10:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 11:  $\text{R A}$  (Dynamic:  $\text{p}$ )
  - Measure 12:  $\text{R}$  (Dynamic:  $\text{p}$ )
- System 5:**
  - Measure 1:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 2:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 3:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 4:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 5:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 6:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 7:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 8:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 9:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 10:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 11:  $\text{R}$  (Dynamic:  $\text{p}$ )
  - Measure 12:  $\text{R}$  (Dynamic:  $\text{p}$ )

Sopranos in B $\flat$  and A (and E $\flat$  soprano)—continued.

limit for E $\flat$  Soprano



Sopranos in B $\flat$  and A (and E $\flat$  soprano)—continued.

A musical staff with a treble clef and a dashed line above it. It contains ten measures of music with various accidentals and dynamics. Below the staff are vertical diagrams of fingerings for each note, with labels: R, G $\sharp$ , E $\flat$ , B $\flat$ tr, F $\sharp$ , and G $\sharp$ .

Supplemental Fingerings for E $\flat$  Soprano

A musical staff with a treble clef and a dashed line above it. It contains ten measures of music with various accidentals and dynamics. Below the staff are vertical diagrams of fingerings for each note, with labels: C $\sharp$ , E $\flat$ , G $\sharp$ , E $\flat$ (C $\sharp$ ), F, and E $\flat$ .

A musical staff with a treble clef and a dashed line above it. It contains ten measures of music with various accidentals and dynamics. Below the staff are vertical diagrams of fingerings for each note, with labels: G $\sharp$ , B $\flat$ tr, C $\sharp$ , A, G $\sharp$ , B $\flat$ tr, C $\sharp$ , G $\sharp$ , B $\flat$ tr, E $\flat$ , C $\sharp$ , and E $\flat$ . A bracket labeled "Ring only" is shown under the last two notes.

A musical staff with a treble clef and a dashed line above it. It contains ten measures of music with various accidentals and dynamics. Below the staff are vertical diagrams of fingerings for each note, with labels: E $\flat$ , C $\sharp$ , E $\flat$ , C $\sharp$ , E $\flat$ , G $\sharp$ , E $\flat$ , G $\sharp$ , E $\flat$ , C $\sharp$ , B $\flat$ tr, and E $\flat$ .

A musical staff with a treble clef and a dashed line above it. It contains two measures of music with various accidentals and dynamics. Below the staff are vertical diagrams of fingerings for each note, with labels: E $\flat$ , C $\sharp$ , G $\sharp$ , and F $\sharp$ .

Supplemental Fingerings for A Soprano

A musical staff with a treble clef and a dashed line above it. It contains five measures of music with various accidentals and dynamics. Below the staff are vertical diagrams of fingerings for each note, with labels: G $\sharp$ , E $\flat$ , G $\sharp$ , and G $\sharp$ .

*B $\flat$  bass clarinet fingering chart.*

\* \* \* \*

Control the low "e" opening by pressing at a point just above the left calf

Control the "f" opening with right calf

\* \* \* \*

Control the "f#" opening with left calf

Control the "f#" opening with left calf

\* \* \* \*

Control the "g#" opening with left knee

Control the "a" opening with right knee

(lip down)

\* \* \* \*

Control the "a" opening with R.H. second finger

Control the "b" opening by placing R.H. thumb on b $\flat$  lever, obtaining leverage between thumb and R.H. third finger

\* \* \* \*

Control the air space below the R.H. second finger

Control the "c#" opening with the L.H. little finger

B $\flat$  bass clarinet fingering chart—continued.

The image displays five systems of musical notation for a B $\flat$  bass clarinet. Each system consists of a staff with a treble clef and key signatures of one sharp (F $\sharp$ ), one sharp and one flat (F $\sharp$  C $\flat$ ), and two sharps (F $\sharp$  C $\flat$  G $\sharp$ ). Below the notes are diagrams of the instrument's keys, represented as a vertical column of eight circles. Filled circles indicate which keys are to be pressed, while open circles indicate keys to remain open. Various fingering techniques and dynamic markings are noted throughout the chart.

**System 1:** Notes include G $\sharp$ , A $\flat$ , B $\flat$ , C $\sharp$ , D $\flat$ , E $\flat$ , F $\sharp$ , and G $\sharp$ . A note with a sharp sign and a downward-pointing arrow is also present. A text instruction reads: "Control air space with L.H. third finger".

**System 2:** Notes include G $\sharp$ , A $\flat$ , B $\flat$ , C $\sharp$ , D $\flat$ , E $\flat$ , F $\sharp$ , and G $\sharp$ . Dynamic markings include *pp* and *F*.

**System 3:** Notes include G $\sharp$ , A $\flat$ , B $\flat$ , C $\sharp$ , D $\flat$ , E $\flat$ , F $\sharp$ , and G $\sharp$ . Dynamic markings include *pp*. Right-hand (R) fingering is indicated for certain notes.

**System 4:** Notes include G $\sharp$ , A $\flat$ , B $\flat$ , C $\sharp$ , D $\flat$ , E $\flat$ , F $\sharp$ , and G $\sharp$ . Right-hand (R) fingering is indicated for certain notes. A note with a sharp sign and a downward-pointing arrow is also present.

**System 5:** Notes include G $\sharp$ , A $\flat$ , B $\flat$ , C $\sharp$ , D $\flat$ , E $\flat$ , F $\sharp$ , and G $\sharp$ . Trills (tr) and tonguing (t) are indicated for B $\flat$  and B $\natural$ . Dynamic markings include *F*.

B $\flat$  bass clarinet fingering chart—continued.

Fingering diagrams for the first row of notes, including B $\flat$  tr, G $\sharp$ , and R A combinations.

Fingering diagrams for the second row of notes, including R A, B $\flat$  tr, and combinations with E and F.

Fingering diagrams for the third row of notes. Technical notes include: "Control 'c $\sharp$ ' opening by obtaining leverage against the left calf" and "Control the 'c $\sharp$ ' opening by obtaining leverage against the left calf".

Fingering diagrams for the fourth row of notes. Technical notes include: "Control the 'd $\sharp$ ' opening by obtaining leverage against the left knee" and "Control 'e' opening by pressing against right knee, or with R.H. third finger".

(lip up)

Fingering diagrams for the fifth row of notes. Technical notes include: "Control the 'b $\sharp$ ' lever with R.H. third finger. Additional accuracy may be obtained by placing the R.H. thumb on the 'b $\sharp$ ' pad".

B $\flat$  bass clarinet fingering chart—continued.

Control the air space below the R.H. second finger

Control the air space above the "g $\sharp$ " opening with one of the R.H. fingers, or with the L.H. "g $\sharp$ " lever

Control air space with L.H. third finger

B♭ bass clarinet fingering chart—continued.

**- D**                      **D**                      **+ D**                      **# D**

This system shows four fingering options for the notes D, D, +D, and #D. Each fingering is represented by a vertical column of circles on a five-line staff, with 'R' for right hand and 'L' for left hand. Fingerings include combinations of 1, 2, 3, 4, and 5 fingers, as well as trills (tr) and specific key combinations like G#.

**- # D**                      **# D**                      **+ # D**

This system shows three fingering options for the notes -#D, #D, and + #D. The diagrams use circles on a staff to indicate finger placement, with 'R' and 'L' labels. Fingerings include combinations of 1, 2, 3, 4, and 5 fingers, and trills.

**# D**                      **- D**                      **D**                      **+ D**

This system shows four fingering options for the notes #D, -D, D, and +D. The diagrams use circles on a staff to indicate finger placement, with 'R' and 'L' labels. Fingerings include combinations of 1, 2, 3, 4, and 5 fingers, and trills.

**# D**                      **- D**                      **D**                      **+ D**

This system shows four fingering options for the notes #D, -D, D, and +D. The diagrams use circles on a staff to indicate finger placement, with 'R' and 'L' labels. Fingerings include combinations of 1, 2, 3, 4, and 5 fingers, and trills.

**# D**                      **- # D**                      **# D**                      **+ # D**                      **# D**                      **- D**

This system shows six fingering options for the notes #D, -#D, #D, + #D, #D, and -D. The diagrams use circles on a staff to indicate finger placement, with 'R' and 'L' labels. Fingerings include combinations of 1, 2, 3, 4, and 5 fingers, and trills.

B♭ bass clarinet fingering chart—continued.

The chart is organized into six horizontal sections, each with a key signature symbol above the staff and a corresponding fingering diagram below. The notes and fingerings are as follows:

- Section 1:** Notes G# (R), G# (R), F (E, F), F (F), (G#) (R), G# (R), F (E, F), F (F), G# (R), G# (R), G# (R).
- Section 2:** Notes B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R), B♭ (R).
- Section 3:** Notes G# (R), G# (R), G# (R), B♭ tr, (R) G#, G#, G#, F, F, G#, G#, R, R, F, F, B♭ tr.
- Section 4:** Notes G# (R), G# (R), B♭ tr, G# (R), B♭ tr, B♭ tr, A, A, B♭ tr, C#, R, A, R, A, R.
- Section 5:** Notes A (R), A (R), R, B♭ tr, A, R, B♭ tr, R, R, R, R, R, R, B♭ tr, B♭ tr, R, R.

B $\flat$  bass clarinet fingering chart—continued.

The chart shows the following notes and fingerings:

- B $\flat$ :** R (index), L (thumb)
- B:** R (index), L (thumb, pinky)
- C:** R (index), L (thumb)
- C#:** R (index), L (thumb, pinky)
- D:** R (index), L (thumb)
- E $\flat$ :** R (index), L (thumb, pinky)
- E:** R (index), L (thumb, pinky)
- F:** R (index), L (thumb, pinky)
- F#:** R (index), L (thumb, pinky)

It should also be noted that the charts have been developed with pitch as a primary consideration rather than ease of finger movement. The reader should refer to the quarter tone chart presented in Appendix B when greater facility is desired.

END NOTE

1. Ralph Strouph, "All Fine Clarinetists Use the Same Facing," *The Clarinet* (vol. 2, no. 4 [August 1975]), 11. The "facing" is the opening at the tip of the mouthpiece.



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## Multiple Sonorities

The acoustical phenomenon for producing two or more simultaneous pitches on woodwind instruments is reported to have been first described by Antonio Ferranini of the Conservatory of San Pietro a Majella of Naples, according to a book by T. Pace entitled *Ancie battenti* (Florence: Casa Edition Carlo Cya, 1943).<sup>1</sup> Accounts exist of early nonnotated multiphonic uses in jazz performances, particularly those by Eric Dolphy, and they have unquestionably been attained, if only accidentally, by most beginning students' first attempts with the upper register. They are called for ("undertones") in the clarinet part to Cage's *Concert for Piano and Orchestra* (1957–58) and are first used under more rigid control in William O. Smith's *Five Pieces for Flute and Clarinet* (1961). This was followed by John Eaton's *Concert Music for Solo Clarinet* (1961), written for Smith, and by Donald Scavarda's *Matrix for Solo Clarinetist* (1962), John Morgan, clarinetist. Since these beginnings, and with the help of Bruno Bartolozzi's pioneering *New Sounds for Woodwind* (1967; 2d ed. 1982), the list of works employing multiphonics has *grown* enormously. In the United States, this is owing in large part to the activities in the late 1960s of a number of composer-clarinetists, among them Smith, Burton Beerman, Ron Caravan, F. Gerard Errante, Dorrance Stalvey, and Paul Zonn. Few would disagree that multiple sonorities have now become established practice.

### PRINCIPLES OF PRODUCTION

The matter of how multiphonics work is quite simple. Fingerings for all fundamental pitches have the capability of producing, with lip/jaw manipulations, upper partials according to the standard overtone series. In the case of the clarinet, which acts acoustically as a stopped pipe, only the odd-numbered partials are available. Example 3.1a presents the theoretical overtone series for the fundamental A' fingering; the filled-in notes in parentheses are the partials in the standard overtone series that the clarinet does not produce.

Example 3.1: (a) the theoretical overtone series, (b) resulting multiple sonority, (c) actual overtone pitches produced (singly) on the clarinet.

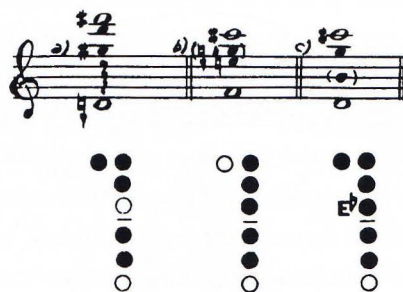


Pitch content, however, is not as easily predicted as it might appear. The fingering for  $A'$ , for example, simultaneously produces the pitches presented in Example 3.1b—the filled-in notes are the less prominent pitches. The pitches that result by themselves, i.e., with the  $A'$  fundamental but not as a multiple sonority, are presented in Example 3.1c. There are a number of explanations for the pitch differences, the first being that the clarinet is naturally “out of tune” in the upper partials, the reason that fingerings are altered (“cross fingerings”) for the normal top register. Another explanation is that the lip/jaw adjustments required to produce the split sonority generally also lower the upper partials (Example 3.1b). Many multiple sonorities also produce difference and summation tones which are not accountable to the overtone series (Examples 3.2b and 3.2c). It is difficult, therefore, to make the notation absolutely precise. However, more and more players are finding that, when similar mouthpiece/reed setups are used, there is a basic agreement as to the results obtained. The upper range is limited by the strength of the reed and the acoustical properties of the mouthpiece.

With additional venting above the node, basic fingerings can be modified in a number of ways. By venting the left-hand third finger (Example 3.2a), the fundamental (of Example 3.1b) is changed to a flat  $D'$ , a flat  $A''$  via the left-hand fingering (sounds G-sharp<sup>'''</sup>) is introduced, the C-sharp<sup>'''</sup> becomes  $D''$ , the F-sharp<sup>'''</sup> is retained but with intensity diminished, and interference, or beating, occurs between the G-sharp<sup>'''</sup> and the F-sharp<sup>'''</sup> (a jagged line is used throughout the text to indicate beats or rough sounds). If the thumb is lifted instead of the third finger (Example 3.2b), the fundamental changes to  $F''$ , the high  $E'''$  is retained, the C-sharp<sup>'''</sup> becomes more prominent, a resultant tone (the flat G-natural) appears, and much faster beats (almost consonant) occur between the sharp  $E'''$  and the C-sharp<sup>'''</sup>. The fingering in Example 3.2c alters the pitches in similar fashion, including a resultant tone (the  $B''$  in parentheses).

A number of other modifications and combinations of modifications might also be applied to this and any other basic fingering with similar results, making the potential for multiphonic sonorities on the clarinet enormous—as many as three harmonic possibilities for the 373,248 possible fingering combinations (not

Example 3.2: Multiphonic modifications to the basic A' fingering.



including half holes) available on the clarinet. The task on the following charts, therefore, has been to set down combinations that seem to work with greatest reliability. Many have been taken from the present repertory.

It might be noted at this point that multiphonics really cannot be equated with chords. The reason for this is that the pitches characteristically appear at varying degrees of intensity, ranging from most prominent, indicated in whole notes, to almost inaudible or even implied, the filled-in pitches. In an attempt to clarify the situation, Lawrence Singer has suggested a graphic system of notation wherein each pitch is color-coded to indicate timbre and rated on an intensity level from one to six.<sup>2</sup> Although the problems involved with individual differences would be compounded, this system unquestionably provides a more precise means of notation, one that more closely represents the multiphonic as a complex “sonority” rather than as a harmonic structure of quasi-equal pitches.

The technique for obtaining multiple sonorities is basically identical to that for any other pitch. Higher and louder requires more jaw pressure on the reed at points farther down (toward the bell). Jaw movements cause the lower teeth to roll beneath the lower lip, the lip remaining basically stationary on the reed. The position of the facial configuration, the basic embouchure set, also remains stationary. For maximum resonance and proper tone center, the throat is relaxed. Theoretically, therefore, there is an “ideal” lip pressure/position for each note on the clarinet according to the intonation, register, and dynamic requirements. After years of playing, these “positions” become more or less second nature. For multiphonics, because they involve more than one pitch, the embouchure position is whatever compromise might be necessary in order to get the result desired. Just as for normal playing, the difficulty comes with making these positions second nature. Mouthpieces and reeds should be selected which include multiphonic capabilities, but, beyond that, no special equipment should be necessary.<sup>3</sup> Equipment that produces multiphonics generally also works well for “normal” playing.

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## MULTIPHONIC TYPES

The type of response that various fingerings produce is far from uniform. Some of the sonorities are full and rich, some produce beats and are rough and raucous,

others will only respond at the softest dynamics, some produce two tones only, others four or five pitches, some emphasize the highest partials of the overtone series, and so forth. Even with the illustrations presented in Examples 3.1 and 3.2, the response is not uniform, with 3.1b being the least easily produced, 3.2a fairly reliable, 3.2b better at softer levels, and 3.2c full and rather solid. The following charts, therefore, present clarinet multiphonics in six basic categories according to the type of sound that the fingerings are capable of producing.

*Category 1* (Example 3.3). These are the most versatile of the six types. They can be played at all dynamic levels; the pitches, with practice (and a good reed), can be attacked simultaneously; moderately short (staccato) durations are possible; and there is sufficient flexibility that they can be initiated from the sustained upper and lower pitches. The harmonic content is rich and full. It should be noted, however, that the sonorities were developed primarily for the B $\flat$  clarinet. The response may be slightly better for this instrument than for the A or E $\flat$  clarinet.

*Category 2* (Example 3.4). These have a quieter, slightly more resistant quality; the initial production must be made more carefully and at softer (p) dynamic levels. Although most will produce a simultaneous attack, often the upper pitches must be allowed to “accumulate” more or less on their own time. However, once the sonority has been attained, a moderately loud (mf to f) crescendo is generally possible. All of the soprano clarinet fingerings can be approached by either of the outer pitches; the exceptions are bass clarinet numbers one, four, five, six, and eight.

*Category 3* (Example 3.5). These are distinguished by an even tighter and even more resistant quality than those in Category 2. They can generally be attacked accurately, but, unlike Category 2, will provide only the slightest crescendo; their quality, therefore, is limited to extremely soft (approximately pp to mp) throughout. All the sonorities can be approached from either of the outer pitches, with the exception of bass clarinet numbers one and two. Category 3 is perhaps the most prevalent of the multiphonic types and, given the soft dynamic limitation, are produced quite reliably.

*Category 4* (Example 3.6). These multiphonics are similar to those in the first

Example 3.3: Tom Cleman, *For Clarinet and Piano* (1975, ms).

The musical score for Example 3.3 is written for a clarinet and piano. It consists of three staves. The top staff is for the clarinet, the middle for the piano right hand, and the bottom for the piano left hand. The key signature has one sharp (F#) and the time signature is 4/4. The clarinet part starts with a series of rests, followed by a dynamic marking of *sf*. The piano accompaniment consists of chords in the right hand and single notes in the left hand. The clarinet part then moves to a series of multiphonics, marked with *sf* and *ff*, and concludes with a dynamic marking of *ff*. The piano accompaniment ends with a final chord marked 7 7. The score includes performance instructions: *smorz.* and *accel.* above the clarinet part.

Example 3.4: Ronald Caravan, *Excursions for A Clarinet* (1974). Copyright © 1976 by Seesaw Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.

The musical notation for Example 3.4 shows a melodic line on a treble clef staff with a key signature of one flat (B-flat). The piece is in 2/4 time. The notation includes dynamics markings of *mf* and a crescendo hairpin. There are three fingerings indicated below the staff, each represented by a vertical column of seven circles corresponding to the fingers of the right hand (thumb to pinky).  
 Fingering 1: Circle 1 (thumb) is black, Circle 2 (index) is black, Circle 3 (middle) is black, Circle 4 (ring) is black, Circle 5 (pinky) is black, Circle 6 (thumb) is black, Circle 7 (index) is black. Labeled with E $\flat$  and G $\sharp$ .  
 Fingering 2: Circle 1 (thumb) is black, Circle 2 (index) is black, Circle 3 (middle) is black, Circle 4 (ring) is black, Circle 5 (pinky) is black, Circle 6 (thumb) is white, Circle 7 (index) is black. Labeled with E $\flat$  and G $\sharp$ .  
 Fingering 3: Circle 1 (thumb) is black, Circle 2 (index) is black, Circle 3 (middle) is black, Circle 4 (ring) is black, Circle 5 (pinky) is black, Circle 6 (thumb) is black, Circle 7 (index) is white. Labeled with C $\sharp$  and F $\sharp$ .

Example 3.5: William O. Smith, *Variants for Solo Clarinet* (1963). Copyright © 1967 by Universal Edition (London), Ltd. Permission granted by Theodore Presser Co., Presser Pl., Bryn Mawr, PA 19010.

The musical notation for Example 3.5 shows a melodic line on a treble clef staff with a key signature of one flat (B-flat). The piece is in 2/4 time. The notation includes dynamics markings of *mf* and a crescendo hairpin. There are three fingerings indicated below the staff, each represented by a vertical column of seven circles corresponding to the fingers of the right hand (thumb to pinky).  
 Fingering 1: Circle 1 (thumb) is black, Circle 2 (index) is black, Circle 3 (middle) is black, Circle 4 (ring) is white, Circle 5 (pinky) is white, Circle 6 (thumb) is white, Circle 7 (index) is white. Labeled with R and E $\flat$ .  
 Fingering 2: Circle 1 (thumb) is black, Circle 2 (index) is white, Circle 3 (middle) is black, Circle 4 (ring) is black, Circle 5 (pinky) is black, Circle 6 (thumb) is black, Circle 7 (index) is black. Labeled with R and G $\sharp$ .  
 Fingering 3: Circle 1 (thumb) is black, Circle 2 (index) is white, Circle 3 (middle) is black, Circle 4 (ring) is white, Circle 5 (pinky) is white, Circle 6 (thumb) is white, Circle 7 (index) is white. Labeled with R and G $\sharp$ .

1) key vibrato  
 (trill by adding key indicated in small notes)

category in that dynamics are generally flexible (basically loud); the quality is full and resonant. The distinguishing feature is that sufficient interference is set up between the various pitch components to cause audible beats.<sup>4</sup> Owing to these pulsating characteristics, this type generally does not sustain to the upper pitch. The speed of the beats can vary considerably from sonority to sonority. On the bass clarinet, a number of fingerings produce slightly beating effects, but none that compares to those found with the soprano instruments. The category has therefore been omitted from the bass clarinet chart. Nearly identical results can be obtained, incidentally, by humming approximately a major or minor second above or below a given pitch (called for in the second movement of Smith's *Variants*).

*Category 5* (Example 3.7). The quality of these sonorities is similar to that of the third category. However, when played with extreme care, and again, only at the softest dynamic levels, it is possible to obtain two pitches only,<sup>5</sup> as opposed to the more common three or more. It is often advisable, as with Category 3, to ob-

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Example 3.6: Edward Diemante, *Mirrors V for Clarinet and Tape* (1974). Copyright © 1976 by Bowdoin College Music Press, Brunswick, ME 04011. Used by permission of the publisher.

Example 3.7: Paul Zonn, *Revolutions for Solo Clarinet* (1969). Copyright © 1971 by Media Press, Inc., Box 895, Champaign, IL 61820. Used by permission of the publisher.

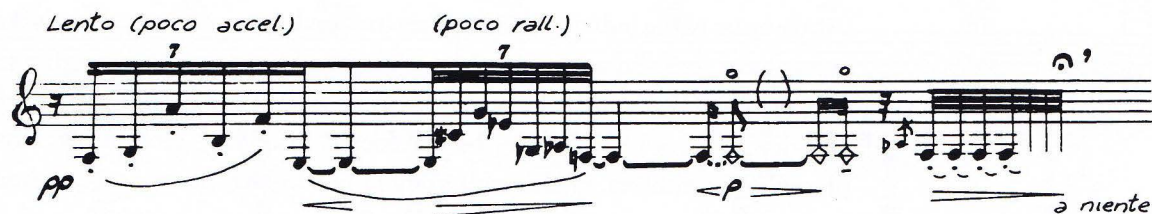
tain the lower pitch first; as this is maintained, the upper is then gradually allowed to appear. All the sonorities listed will isolate the higher pitch as well as the lower as in the Zonn example. Note that this example uses a half hole for the second sonority.

*Category 6* (Example 3.8). Grouped here are sonorities that, unlike those in previous categories, are produced with increased and often forced (in the highest partials) pressure on the reed. In the chart, the upper partials have been notated according to the overtone series, the brackets indicating that the particular partial obtained is more or less unpredictable, depending upon the strength and characteristics of the reed. The number of partials generally possible is in parentheses. Although often characteristically shrill in the higher partials, they can generally also be maintained at softer (and less strident) dynamic levels. Some of the lower partials will sustain only softer dynamics. Many of the examples in this category use normal low register fingerings, such as that in the Goehr example. The upper pitches are not specified. In the Xenakis example, the composer asks for four “regions,” the first three produced in normal fashion, the fourth with teeth on reed. The notation is as it sounds and is obviously approximate for the upper pitches.

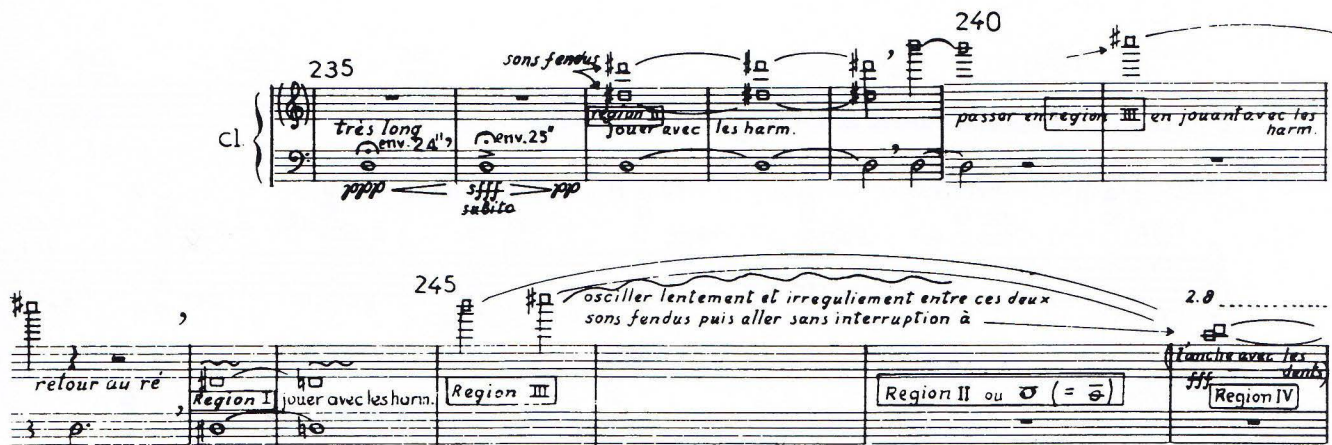
It is also important to note that some type of multiple sonority can be produced on virtually every normal (and nonnormal) fingering on the clarinet, the major limitation being that of loudness. With the Boulez example (Example 3.9), the overtone pitches above the normal fingering for D-flat<sup>2</sup> are B-flat<sup>3</sup>, E-flat<sup>4</sup>, G<sup>5</sup>, and B-flat<sup>6</sup>. Each can be sustained, singly, with the D-flat<sup>2</sup>—with G<sup>5</sup> perhaps the most reliable—but only at the softest dynamic (as notated).

Example 3.8: Two or more upper partials.

(a) Alexander Goehr, "Paraphrase" on the Dramatic Madrigal "Il combattimento di Tancredi e Clorinda" by Claudio Monteverdi (1969). Copyright © 1969 by Schott & Co., Ltd., 48 Great Marlborough St., London W1V 2BN, England. Used by permission of the publisher.



(b) Iannis Xenakis, *Anaktoria* (1969). Copyright © 1971 by Musique Contemporaine, Paris. Used by permission of the composer.



Example 3.9: Pierre Boulez, *Domains* (1968). Copyright © 1970 by Universal Edition (London), Ltd. Permission to reprint granted by Theodore Presser Co., Presser Pl., Bryn Mawr, PA 19010.



Multiple  
Sonorities

## MULTIPHONIC POSSIBILITIES

The following charts for B-flat soprano and bass clarinet are arranged according to the above categories. Most of the B-flat soprano fingerings are also applicable to the E-flat soprano and A clarinets (noting perhaps a slight deterioration in reliability); on the soprano chart, where exceptions occur, the indications “-e” and “-a” are again employed, as on the monophonic charts. *These indications are not a component of the fingering.* Many of the bass clarinet fingerings are also suitable for the E-flat contralto and the E-flat and B-flat contrabass; however, sufficient differences warrant preparation of separate charts. This has been judged beyond the scope of the present project. A few multiphonic possibilities for E-flat contrabass are provided in Appendix C.

Because of the individual differences involved, precise microtonal pitch assignments have not been attempted. Instead, a plus or minus is often used to indicate that the pitch tends to be higher or lower than that indicated by the traditional notation. Pitches of what may be considered secondary prominence have been placed in parentheses. Pitches of third- and fourth-level prominence, although often present, have not been indicated. In Category 6, the variable upper partials have been placed in brackets. Pitches notated are those produced, on the instrument, not concert pitch. These examples should be considered representative, not comprehensive.

### B-flat soprano (E-flat soprano and A soprano) multiphonics.

Category 1 (all dynamics, flexible).

The image displays two staves of musical notation for B-flat soprano multiphonics, Category 1. Each note on the staff is accompanied by a fingering diagram consisting of a vertical column of circles representing finger positions on the instrument. The notes and their corresponding fingerings are as follows:

- Staff 1, Measure 1: B-flat (fingering: F#)
- Staff 1, Measure 2: E-flat (fingering: E, F)
- Staff 1, Measure 3: G (fingering: G)
- Staff 1, Measure 4: A (fingering: G#)
- Staff 1, Measure 5: B-flat (fingering: G#)
- Staff 1, Measure 6: C (fingering: G#)
- Staff 1, Measure 7: D (fingering: G#)
- Staff 1, Measure 8: E-flat (fingering: G#)
- Staff 2, Measure 1: F (fingering: G#)
- Staff 2, Measure 2: G (fingering: G#)
- Staff 2, Measure 3: A (fingering: G#, C#)
- Staff 2, Measure 4: B-flat (fingering: G#, C#)
- Staff 2, Measure 5: C (fingering: G#, C#)
- Staff 2, Measure 6: D (fingering: G#, C#)
- Staff 2, Measure 7: E-flat (fingering: G#, C#)
- Staff 2, Measure 8: F (fingering: B



B-flat soprano (E-flat soprano and A soprano) multiphonics—continued.

Category 2 (soft attacks, crescendo to mf-f, more resistant).

Category 2 (soft attacks, crescendo to mf-f, more resistant) consists of three rows of musical notation and fingerings. Each row contains eight measures. The notation includes dynamic markings such as  $-p$ ,  $p$ ,  $mf$ ,  $f$ , and  $ff$ , along with accents and breath marks. The fingerings are represented by vertical diagrams with circles for fingers and letters for notes.

**Row 1:** Fingerings include R, B $\flat$  tr, F, E, and C $\sharp$ .

**Row 2:** Fingerings include G $\sharp$ , E $\flat$ , F $\sharp$ , G $\sharp$ , F, G $\sharp$ , C $\sharp$ , and B $\flat$  tr.

**Row 3:** Fingerings include A, B $\flat$  tr, F $\sharp$ , G $\sharp$ , C $\sharp$ , E $\flat$ , G $\sharp$ , and F.

Category 3 (quiet little, or no crescendo).

Category 3 (quiet little, or no crescendo) consists of one row of musical notation and fingerings. It contains eight measures with dynamic markings such as  $-p$ ,  $p$ ,  $mf$ ,  $f$ , and  $ff$ , along with accents and breath marks. The fingerings are represented by vertical diagrams with circles for fingers and letters for notes.

Fingerings include R, C $\sharp$ , F $\sharp$ , E, E, E, G $\sharp$ , F, and F.

B-flat soprano (E-flat soprano and A soprano) multiphonics—continued.

First system of musical notation and fingering diagrams. The staff shows notes with various accidentals and dynamics. Below are seven diagrams, each with a vertical column of six circles representing strings. The first diagram has a solid dot on the top circle labeled 'R'. The second has solid dots on the top and bottom circles, with 'F#' below the bottom circle. The third has solid dots on the top and second circles, with 'C#' below the second circle. The fourth has solid dots on the top and bottom circles, with 'F#' below the bottom circle. The fifth has a solid dot on the top circle labeled 'R'. The sixth has a solid dot on the top circle labeled 'R'. The seventh has solid dots on the top and second circles, with 'E♭' below the second circle. The eighth has solid dots on the top and second circles, with 'C#' below the second circle.

Second system of musical notation and fingering diagrams. The staff shows notes with various accidentals and dynamics. Below are seven diagrams. The first has solid dots on the top and second circles, with 'E♭' below the second circle and 'C#' below the top circle. The second has solid dots on the top and second circles, with 'E♭' below the second circle and 'C#' below the top circle. The third has solid dots on the top and second circles, with 'E♭' below the second circle and 'F#' below the bottom circle. The fourth has solid dots on the top and second circles, with 'E♭' below the second circle and 'F#' below the bottom circle. The fifth has a solid dot on the top circle labeled 'R'. The sixth has a solid dot on the top circle labeled 'R'. The seventh has a solid dot on the top circle labeled 'R'. Below the diagrams are the labels '-e♭' and '-e♭'.

Third system of musical notation and fingering diagrams. The staff shows notes with various accidentals and dynamics. Below are seven diagrams. The first has solid dots on the top and second circles, with 'G#' below the second circle. The second has solid dots on the top and second circles, with 'G#' below the second circle. The third has solid dots on the top and second circles, with 'E' below the second circle. The fourth has solid dots on the top and second circles, with 'R' above the top circle and 'C#' below the second circle. The fifth has a solid dot on the top circle labeled 'R'. The sixth has a solid dot on the top circle labeled 'R'. The seventh has solid dots on the top and second circles, with 'R' above the top circle and 'G#' below the second circle. The eighth has solid dots on the top and second circles, with 'R' above the top circle and 'G#' below the second circle. Below the diagrams is the label '-e♭'.

Category 4 (loud, with beats).

Fourth system of musical notation and fingering diagrams. The staff shows notes with various accidentals and dynamics. Below are seven diagrams. The first has solid dots on the top and second circles, with 'E' below the top circle and 'G#' below the second circle. The second has solid dots on the top and second circles, with 'R' above the top circle and 'G#' below the second circle. The third has solid dots on the top and second circles, with 'R' above the top circle. The fourth has solid dots on the top and second circles, with 'R' above the top circle. The fifth has solid dots on the top and second circles, with 'F' below the bottom circle. The sixth has solid dots on the top and second circles, with '(G#)' below the bottom circle. The seventh has solid dots on the top and second circles, with 'E' below the top circle and 'G#' below the second circle. The eighth has solid dots on the top and second circles, with 'G#' below the second circle and 'C#' below the top circle. Below the diagrams is the label 'or'.

B-flat soprano (E-flat soprano and A soprano) multiphonics—continued.

*Category 5 (dyads, soft).*

Diagram 1: Notes G# and C#; Fingerings: R (G#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 2: Notes G# and C#; Fingerings: R (G#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 3: Notes G# and C#; Fingerings: R (G#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 4: Notes F and G#; Fingerings: R (F), 1 (G#), 2 (G#), 3 (G#), 4 (G#), 5 (G#); Label: -a

Diagram 5: Notes F and A; Fingerings: R (F), 1 (A), 2 (A), 3 (A), 4 (A), 5 (A); Label: -a

Diagram 6: Notes F# and G#; Fingerings: R (F#), 1 (G#), 2 (G#), 3 (G#), 4 (G#), 5 (G#); Label: -eb

Diagram 7: Notes Bb| and G#; Fingerings: R (Bb|), 1 (G#), 2 (G#), 3 (G#), 4 (G#), 5 (G#); Label: -eb
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Diagram 8: Notes R and E; Fingerings: R (R), 1 (E), 2 (E), 3 (E), 4 (E), 5 (E); Label: -eb

Diagram 9: Notes G# and C#; Fingerings: R (G#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 10: Notes F# and C#; Fingerings: R (F#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 11: Notes G# and C#; Fingerings: R (G#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 12: Notes G# and C#; Fingerings: R (G#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 13: Notes F# and C#; Fingerings: R (F#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 14: Notes G# and C#; Fingerings: R (G#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 15: Notes F and G#; Fingerings: R (F), 1 (G#), 2 (G#), 3 (G#), 4 (G#), 5 (G#); Label: -eb

*Category 6 (variable in upper partials, shrill, two or more partials possible).*

Diagram 16: Notes Bb| and Bb|; Fingerings: R (Bb|), 1 (Bb|), 2 (Bb|), 3 (Bb|), 4 (Bb|), 5 (Bb|); Label: -eb
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Diagram 17: Notes Bb| and C#; Fingerings: R (Bb|), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb
|  |

|  |

Diagram 18: Notes G# and C#; Fingerings: R (G#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 19: Notes E and C#; Fingerings: R (E), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 20: Notes C# and C#; Fingerings: R (C#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 21: Notes Eb and C#; Fingerings: R (Eb), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 22: Notes Eb and C#; Fingerings: R (Eb), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 23: Notes R and C#; Fingerings: R (R), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 24: Notes F# and C#; Fingerings: R (F#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 25: Notes F# and C#; Fingerings: R (F#), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 26: Notes R and C#; Fingerings: R (R), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 27: Notes R and G#; Fingerings: R (R), 1 (G#), 2 (G#), 3 (G#), 4 (G#), 5 (G#); Label: -eb

Diagram 28: Notes R and G#; Fingerings: R (R), 1 (G#), 2 (G#), 3 (G#), 4 (G#), 5 (G#); Label: -eb

Diagram 29: Notes R and A; Fingerings: R (R), 1 (A), 2 (A), 3 (A), 4 (A), 5 (A); Label: -eb

Diagram 30: Notes F and C#; Fingerings: R (F), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

Diagram 31: Notes F and C#; Fingerings: R (F), 1 (C#), 2 (C#), 3 (C#), 4 (C#), 5 (C#); Label: -eb

B-flat soprano (E-flat soprano and A soprano) multiphonics—continued.

Musical notation for B-flat soprano multiphonics, showing notes with fingerings (2), (3), and (4). Below the staff are eight diagrams of fingerings on the instrument's keys, labeled with notes: G#, E, E, F, G#, F, G#, and F.

Bass clarinet multiphonics.

Note: Category 4 is not applicable to bass clarinet.

Category 1 (all dynamics, flexible).

Musical notation for bass clarinet Category 1 multiphonics, showing notes with dynamic markings (8<sup>v</sup>). Below the staff are eight diagrams of fingerings on the instrument's keys, labeled with notes: F, E<sup>b</sup>, F, G#, E<sup>b</sup>, G#, B<sup>b</sup>tr, F<sup>#</sup>, and E<sup>b</sup>.

Category 2 (soft attacks, crescendo to mf–f, more resistant).

Musical notation for bass clarinet Category 2 multiphonics, showing notes with dynamic markings (8<sup>v</sup>). Below the staff are seven diagrams of fingerings on the instrument's keys, labeled with notes: E<sup>b</sup>, E<sup>b</sup>, C#, B<sup>b</sup>tr, B<sup>b</sup>tr, G#, and G#.

Musical notation for bass clarinet Category 1 multiphonics, showing notes with dynamic markings (8<sup>v</sup>). Below the staff are eight diagrams of fingerings on the instrument's keys, labeled with notes: F or G#, F<sup>#</sup>, G#, F<sup>#</sup>, G#, G#, F<sup>#</sup>, and G# or E.

Bass clarinet multiphonics—continued.

Category 3 (quiet, little or no crescendo).

Category 3 consists of eight measures of music. Each measure contains a single note with an 8v marking above it. The notes are: G#4, A4, Bb4, B4, C5, C#5, D5, and D#5. Below each note is a fingering diagram showing the right hand (R) and the bass clarinet keys. The diagrams show various combinations of keys being pressed, such as F#4, E4, G#4, and Eb4.

Category 5 (dyads, soft).

Category 5 consists of eight measures of music. Each measure contains a dyad (two notes) with various accidentals. The notes are: G#4-A4, A4-Bb4, Bb4-B4, B4-C5, C5-C#5, C#5-D5, D5-D#5, and D#5-E5. Below each dyad is a fingering diagram showing the right hand (R) and the bass clarinet keys. The diagrams show various combinations of keys being pressed, such as Eb4, F#4, F, and G#4.

Category 6 (variable in upper partials, shrill, two or more partials possible).

Category 6 consists of eight measures of music. Each measure contains a single note with various accidentals. The notes are: G#4, A4, Bb4, B4, C5, C#5, D5, and D#5. Below each note is a fingering diagram showing the right hand (R) and the bass clarinet keys. The diagrams show various combinations of keys being pressed, such as Bb tr, Bb, C#, F, and F#.

partials, shrill, two or more partials possible).

This section continues the notation for Category 6, showing eight measures of music. Each measure contains a single note with an 8v marking above it. The notes are: G#4, A4, Bb4, B4, C5, C#5, D5, and D#5. Below each note is a fingering diagram showing the right hand (R) and the bass clarinet keys. The diagrams show various combinations of keys being pressed, such as F, F#, G#4, and C#5.

Bass clarinet multiphonics—continued.

The image shows a musical staff with a treble clef and a key signature of one sharp (F#). The notation consists of a series of notes, each with an '8v' marking above it. The notes are: B $\flat$  (trill), B $\flat$  (trill), G $\sharp$ , R, R, R, R, C $\sharp$ , R, C $\sharp$ . Fingerings are indicated as (2), (3), and (3) for the first three notes, and (3) for the last three notes. Below the staff are eight fingering diagrams, each showing a vertical column of seven circles representing the keys of the bass clarinet. Filled circles indicate which keys are pressed for each note.

MULTIPHONIC SEQUENCES

Multiphonic sequences can work well as long as sufficient time is provided to allow the sonorities to sound. Extremely fast changes should be considered as essentially nonidiomatic. The Plain example (3.10) mixes types 1, 2, and 4 from the above categories.

MULTIPHONIC TRILLS AND TREMOLOS

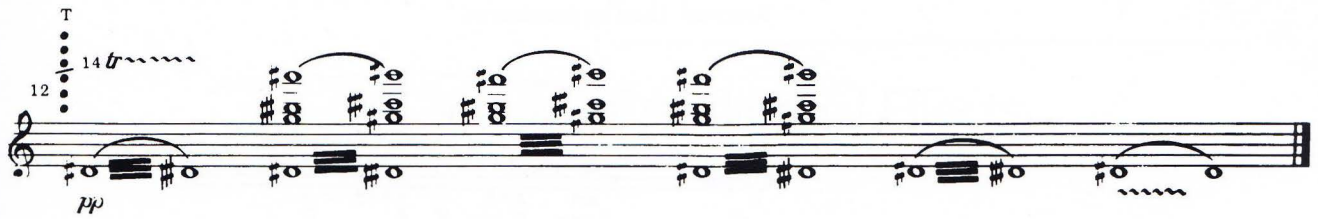
There are literally hundreds of possibilities for trills, tremolos, and key vibratos with multiphonic sonorities. The Heininen example (3.11) illustrates a quarter tone trill which begins with the fundamental alone, moves to the full sonority, drops out the fundamental, and ends as it began. The last event is a normally fin-

Example 3.10: *Gerald Plain, Showers of Blessings for Clarinet and Tape* (1970).

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Sonorities  
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The image shows a musical staff with a treble clef and a key signature of one sharp (F#). The notation consists of a series of notes, each with an 'sf(pp)' marking below it. Above the staff is the instruction 'LIGHT c.15'' with an arrow pointing right. Below the staff are six fingering diagrams, each showing a vertical column of seven circles representing the keys of the bass clarinet. Filled circles indicate which keys are pressed for each note. The notes are: B $\flat$ , B $\flat$ , B $\flat$ , B $\flat$ , B $\flat$ , B $\flat$ . The last note is followed by a wavy line indicating a tremolo.

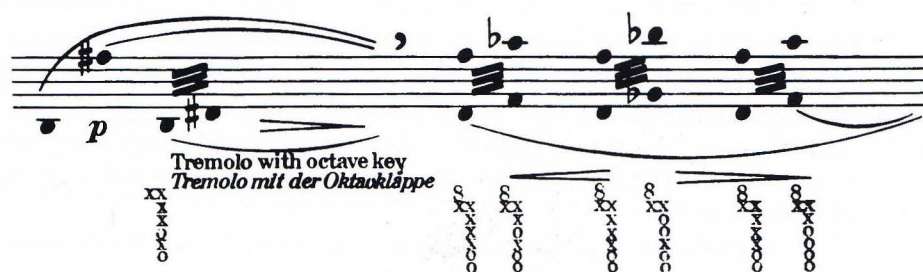
Example 3.11: Paavo Heininen, *Discantus II . . . sonatino for clarinetto solo in tre tempi . . .* (1969). Copyright © 1974 by Musik Fazer, Post Box 260, 00101 Helsinki 10, Finland. Used by permission of the publisher.



gered key vibrato, termed “pedal key effect” with “keys not involved with the fingering of the note”; the choice of which key to use is left to the performer. Keys 12 and 14 are side E-flat and r.h. G-sharp respectively.

The preparation of separate charts for trills and tremolos is beyond the scope of the project.<sup>6</sup> However, many possibilities can be derived by combining fingerings on the various charts or simply by experimenting with likely tone hole ventings. The larger the interval involved, especially with the upper pitches that will most likely change partials in the harmonic series, the more clumsy the execution. The following Smith illustration works nicely:

Example 3.12: William O. Smith, *Variants for Solo Clarinet* (1963). Copyright © 1967 by Universal Edition (London), Ltd. Used by permission of the publisher.

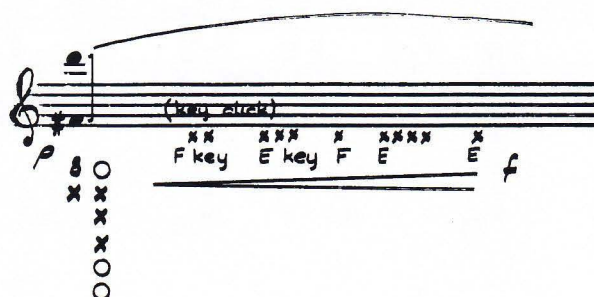


## MULTIPHONIC KEY VIBRATOS

When keys or fingers that are sufficiently distant from the tone-vent of the specified note(s) are added, the result can be changes in color rather than pitch. Here again, there are many borderline situations where the distinction between microtonal trills and resonance fingerings (or key vibratos) becomes pedantic. A good example, providing changes in resonance only, is found in William O. Smith’s *Mosaic* (1964). Here the F-sharp<sup>9</sup> opening and the opening for the D<sup>9</sup> are far enough from

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Example 3.13: William O. Smith, *Mosaic for Clarinet and Piano* (1964). Copyright © 1972 by MJQ Music, Inc., 200 West 57th St., New York, NY 10019. All Rights Reserved. Used by permission.



the F and E openings, which are on the lower portion of the instrument, that the change in pitch goes essentially unnoticed.

#### ENDNOTES

1. Lawrence Singer, "Multiphonic Possibilities of the Clarinet," *The American Music Teacher*, 24 (January 1975), 17.
2. Lawrence Singer, "Woodwind Development; A Monophonic and Multiphonic Point of View," *Woodwind World* 14 (June 1975), 14.
3. Readers interested in pursuing the matter of reeds and mouthpieces and what makes them work might consult Phillip Rehfeldt, *Making and Adjusting Single Reeds*, 2d ed., MillCreekPublications (P.O. Box 556, Mentone, CA 92359), 1991.
4. Additional examples with faster beats can also be found in some of the sonorities listed in other categories. Helmholtz has theorized that beats above about thirty per second become consonant, and with multiphonics, the distinction between consonant and dissonant is often difficult.
5. In many cases, even a slight crescendo will introduce additional pitches, and conversely some of the fingerings found in other categories will single out just two pitches when played softly.
6. A work which emphasizes trills and tremolos is Jerry Farmer, *Multiphonics and Other Contemporary Clarinet Techniques*, SHALL-u-mo (P.O. Box 2824, Rochester, NY 14626), 1981.



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## Catalog of Additional Effects

Chapter 4 lists additional devices, excluding multiphonics, microtones, and timbral variations, which also have contributed to the “common practice” of recent years. These include glissando and portamento, pitch bends, vibrato, smorzato, flutter tongue, teeth-on-reed, slap tongue, throat tremolo, vocal sounds, breath and air sounds, playing on the mouthpiece alone, placing the mouthpiece on the lower half of the instrument, muting, key slaps and rattles, hand and finger pops, lip buzzing, blowing air across the barrel and upper joint, and circular breathing. A number of entertaining and useful items, such as John Cage’s well-known “boat whistle,”<sup>1</sup> John Morgan’s performances with the bell (resonite, one hopes) dipped in a pail of water, various lip smacks (or “kissing” effects), reed snaps with finger, mouthpiece sucks, and miscellaneous percussive effects such as produced by ringing a suspended mouthpiece cap on the bell, or by rattling the barrel inside the bell, have not been included because they are largely self-explanatory. The potential in this respect is, of course, enormous.

### GLISSANDO AND PORTAMENTO

Although the terms are often used interchangeably, it is important, as well as technically correct, to distinguish between glissando and portamento: the glissando is a rapid, usually diatonic, finger movement, like running a finger up and down the keyboard of a piano; the portamento is a continuous sound, such as that produced by sliding up and down the fingerboard of a stringed instrument.<sup>2</sup> On the clarinet, therefore, the glissando is, technically, simply a nonspecified (usually diatonic) finger run, such as a “fall off” in a jazz context.

Portamento is accomplished by adjusting lip pressure, as well as the shape of the oral cavity, in such a way as to produce a pitch somewhat below the normal

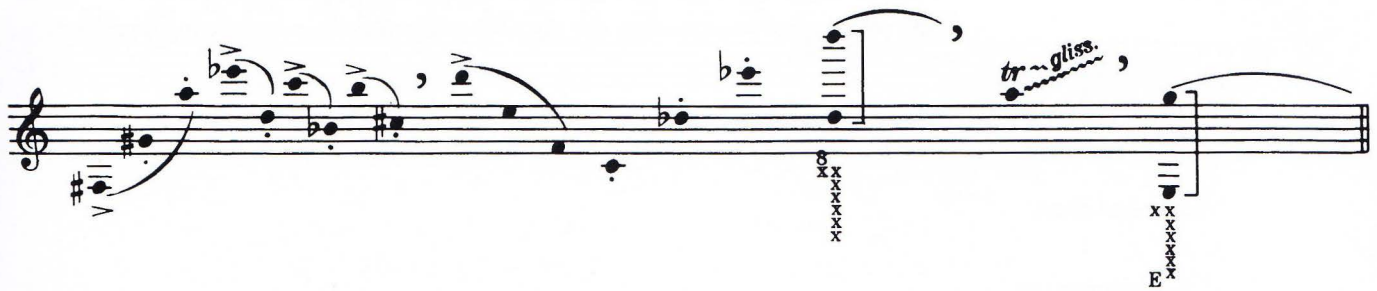
pitch. As the fingers move up and down, in scalewise fashion, this amount below the pitch is carefully maintained by the embouchure. The result is the same smooth, sliding effect that is available on stringed instruments or the trombone. Coordination between the lip and fingers must be carefully controlled, and the technique takes some practice. Beginning players, incidentally, sometimes have a problem with sustaining the “lipped-down” pitch, which, of course, must be learned before portamento is possible.

Unlike the glissando, therefore, the portamento requires that the pitches be capable of downward adjustments with the facial configuration alone. The usual distance necessary for lipping down is at least that of a minor second, with a somewhat larger interval being more comfortably coordinated.

Because not all pitches have the capability of sufficient bending, a genuine portamento is available only in certain areas on the clarinet, primarily the upper register.<sup>3</sup> The “lip-bend” chart provided in the next section (“Pitch Bends”), by giving the approximate amount that pitches can be lowered, also delineates, for each of the instruments of the clarinet family, the areas in which portamento is possible. It does not work smoothly in the low register, the reason that the well-known “glissando” at the opening of Gershwin’s *Rhapsody in Blue* always begins quasi-diatonically, moving to a genuine portamento only when it reaches the early second register, the area between B and D-sharp”. The altissimo register, above G<sup>'''</sup> on soprano clarinet, is also difficult because, using normal fingerings, the space between the partials is smaller. The glissando (actually portamento) in Plain’s *Showers of Blessings* (1970), Example 4.1a, is difficult for this reason. However, in this case the effect can be accomplished by using the l.h. G-sharp and A keys instead of the normal fingering for B<sup>'''</sup>. The Smith example (Example 4.1b) illustrates, using the various side keys on the clarinet, a trilled glissando/portamento.

Example 4.1: Portamento (glissando).  
 (a) Gerald Plain, *Showers of Blessings* (1970, ms).

(b) William O. Smith, *Variants for Solo Clarinet* (1963). Copyright © 1967 by Universal Edition (London), Ltd. Used by permission of the publisher.



### PITCH BENDS

As noted above, pitches can be altered somewhat on the clarinet without changing fingerings, a type of portamento commonly referred to as “lip” or “pitch” bends. The pitch bend in the Cochran excerpt (Example 4.2), for example, can be executed without changes in fingering. As noted in the previous section, the execution is by variation in jaw pressure on the reed and the position of the oral cavity. The amount that a pitch can be adjusted depends on the register in which it is located. Generally, only slight upward alterations are possible—the reason that the clarinet sometimes has problems with flatness in ensemble situations where the pitch has risen—with tone quality becoming more and more pinched as the reed is brought closer to the tip of the mouthpiece. However, by lessening the pressure, given a firm embouchure, pitches can always be lowered, sometimes by rather large intervals.

Example 4.2: Paul Cochran, *Drone/Fantasy for Clarinet and Piano* (1974). Copyright © 1976 by Seesaw Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.



Additional  
Effects

The following lip-bend chart gives the approximate distances possible for each member of the clarinet family. The areas that will readily provide an extended portamento, i.e., allowing at least the interval of a minor second, are also indicated. However, the top region should not necessarily be considered an “upper limit,” simply a more difficult area. It should be noted that in the altissimo regions (C-

sharp<sup>m</sup> and above), where pitches can be lipped down considerable distances, the effect has a tendency to break at certain points as various partials of the overtone series are traversed. For this reason, a continuously smooth upward motion from the pitches indicated is often not possible without the accompanying finger action.

*Lip-bend chart.*

The chart consists of four staves of music, each representing a different instrument or voice part. The notes are written on a treble clef staff with a key signature of one flat (B♭).

- Staff 1: E<sup>b</sup> soprano**
  - Interval: Quarter step lower (from G<sup>♯</sup> to G)
  - Interval: Minor second lower (from G to F)
  - Portamento area: A long horizontal line spanning the final two measures of the staff.
- Staff 2: B<sup>b</sup> and A Sopranos**
  - Interval: Quarter step lower (from G<sup>♯</sup> to G)
  - Interval: Quarter step lower (from F to E)
  - Interval: Minor second lower (from E to D)
  - Interval: Quarter step lower (from D to C)
  - Portamento area: A long horizontal line spanning the final two measures of the staff.
- Staff 3: E<sup>b</sup> Contralto**
  - Interval: Quarter step lower (from G<sup>♯</sup> to G)
  - Interval: Quarter step lower (from F to E)
  - Interval: Minor second lower (from E to D)
  - Interval: Quarter step lower (from D to C)
  - Portamento area: A long horizontal line spanning the final two measures of the staff.

Lip-bend chart—continued.

B<sup>b</sup> Bass

Quarter step lower

None

Quarter step lower

Quarter step lower

Minor second lower

Quarter step lower

Portamento area

E<sup>b</sup> Contrabass

Quarter step lower

None

Quarter step lower

B<sup>b</sup> Contrabass 3

Portamento area

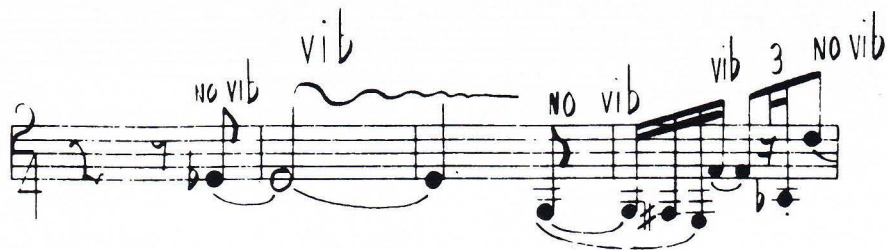
None

Quarter step lower

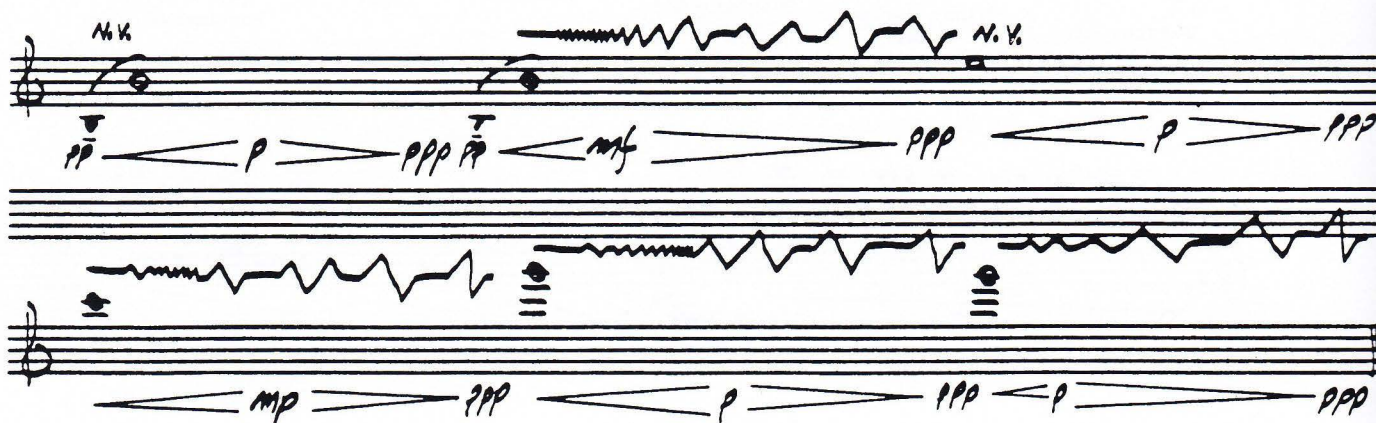
Minor second lower

Example 4.3: Vibrato.

(a) Burton Beerman, *Sensations for Clarinet and Tape* (1969). Copyright © 1976 by Media Press, Box 895, Champaign, IL 61820. Used by permission of the publisher.



(b) Jim Fox, *Exposure for B♭ clarinet or bass clarinet* (1989). Copyright © 1990 by MillCreekPublications, P.O. Box 556, Men-  
tone, CA 92359. Used by permission of the publisher.



MEASURED VIBRATO

Vibrato is a pulsating effect in the tone. It involves minor pitch fluctuations which are achieved on the clarinet either by adjustments of jaw pressure on the reed or by fluctuations in air pressure past the reed. The former, commonly referred to as “lip” vibrato, is capable of more extreme modifications (see lip-bend chart). It is often accompanied by slight timbral differences, the tone becoming more pinched as more pressure is placed on the reed. Depth and speed are controlled by jaw movement.

Vibrato is used for normal playing on the flute, oboe, saxophone, and bassoon as a natural part of the tone, but, for unknown reasons, except for jazz, traditionally not on clarinet. Although there can be carryover, the “wind” type is generally used for flute, oboe, and bassoon, the jaw type for saxophone and clarinet (when used). Although it is not difficult to produce, the wind type is not as smoothly accomplished on single-reed instruments. With normal, nonjazz playing, vibrato is generally slight (many players, for example, feel that the fluctuation should sel-

Additional  
Effects

dom go above the actual pitch). A number of works in the new repertory use vibrato as a special device, often with the notation providing a rough idea of the character of the inflection (Example 4.3a). The Fox example (Example 4.3b) is from a study in measured vibrato.

## S M O R Z A T O

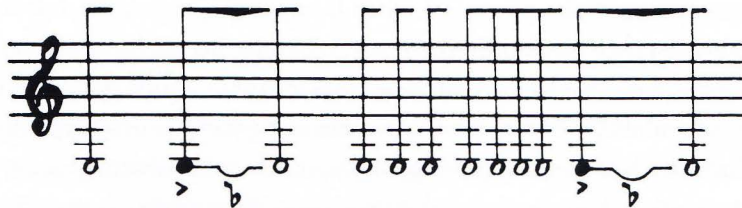
Smorzato (meaning “damped,” or “muffled”) is a term used by Bartolozzi<sup>4</sup> to indicate an abrupt, jerking type of single-stroke vibrato, produced on the clarinet by momentarily pulling the jaw away from the reed. The result is a sudden increase in volume, followed by a return to a former dynamic level. The Bartolozzi and Widdoes examples (4.4) illustrate.

## F L U T T E R T O N G U E

Introduced by Strauss in *Don Quixote* (1897), flutter tonguing is applicable to all members of the woodwind family of instruments. For the clarinet, it is produced either by rolling the tongue on the upper palate, as if pronouncing d-r-r-r, or, since many clarinetists experience difficulties with the mouthpiece obstructing such movement, by an uvular undulation in the throat facilitated by raising the back of the tongue slightly in the mouth. The result of the latter is nearly identical to the

Example 4.4: Smorzato.

(a) Bruno Bartolozzi, *Concertazioni a quattro* (1968). Copyright © 1970 by Edizioni Suvini Zerboni, Via Quintiliano, 40, 20138 Milan, Italy. Used by permission of the publisher.



(b) Lawrence Widdoes, *From a Time of Snow* (1970). Copyright © 1972 by Bowdoin College Music Press, Brunswick, ME 04011. Used by permission of the publisher.



Additional  
Effects

Example 4.5: David Maslanka, *Three Pieces for Clarinet and Piano* (1975). Copyright © 1975 by David Maslanka. Used by permission of the composer.


(♩ = 160 - 168)  
 flutter (as loud and raunchy as possible)

(flutter)

rolling-tongue method, but the pronunciation is more like g-r-r-r. The effect is possible throughout the normal playing range to approximately high B or C<sup>'''</sup>, and, because greater air pressure is required, it is generally not as well suited to soft dynamics as to louder levels. The Maslanka example (Example 4.5) (“buzz saw effect”) illustrates.

#### T E E T H - O N - R E E D

Placing the teeth lightly on the reed, instead of against the lower lip as in normal playing, can produce a thin, high-pitched, whistling sound in the range approximately from F-sharp<sup>'''</sup> to C<sup>'''</sup>. Pitch is largely unpredictable, but changes throughout the range indicated can be made by altering the pressure on the reed or by sliding the teeth over its surface. Both methods result in a kind of rough portamento sound, with the latter often changing partials in a way similar to that produced by lightly moving a finger up and down the vibrating string of a violin. The mouthpiece can also be inverted with equally variable results. This effect is called for a number of times in Donald Scavarda’s *Matrix for Clarinetist* (1962), one of the first pieces of its type to explore nontraditional effects (including multiphonics; see Appendix F). Finger movements while playing in this manner can cause random changes in harmonic partials, but do not affect pitch in the same manner as with normal playing. Dynamics are variable.

Helmut Lachenmann has used the notation  to indicate teeth-on-reed, and, in his *Dal Niente* (1970), calls for a glissando (portamento) executed in this manner. The Childs example (Example 4.6) uses an approximate notation for the same effect.

Teeth-on-reed is often also used to get the altissimo register, i.e., above C<sup>'''</sup>. Accuracy is shaky here, however, and experimentation is usually required to find

Additional  
Effects



Example 4.6: Barney Childs, *Trio for Clarinet, 'Cello, and Piano* (1973).


Copyright © 1973 by Barney Childs. Reprinted by permission of Basheva Music, 23149 Oakbridge Ln., Newhall, CA 91321.

different harmonics, MUST sound above  
 Tone quality to be a high, disembodied whistle, NOT just very high regular timbre.

stop a moment after 'cello arco harmonic


the exact spot on the reed which gets the pitch required. This technique usually requires more pressure than the whistling sound presented above.

### SLAP TONGUE

Slap tongue is an old-time jazz effect, executed by placing a comparatively large portion of tongue on the reed's tip and suddenly releasing, often accompanied by a drop in jaw pressure, simultaneously with the initiation of the air stream—literally slapping the reed on the mouthpiece. The result is a sort of dead “thud.” Tiberiu Olah uses it (Example 4.7a), notated with large wedge shapes, to distinguish the third entrance of a fugal subject. Later in the same work the notation  is used to indicate a type of toneless slap tongue. The technique also works well on bass clarinet, particularly in the low register. The Ward-Steinman example (Example 4.7b), also illustrating key clicks on the pitches indicated, ends with a type of breath-only playing accompanied by slap tongue, called “ghost” tonguing.

Additional  
Effects

### THROAT TREMOLO

Throat tremolo is an effect used by Martino in *B, a, b, b, it, t* (1966), as well as in Example 4.8, to indicate a fast, reiterated series of breath “ha” articulations, notated . There may also be an accompanying kind of “catch” in the throat.

Example 4.7: Slap Tongue.

(a) Tiberiu Olah, *Sonata pour clarinette seule* (1963). Copyright © 1970 by Contemporaine, Paris. Reprinted by permission of Editions Salabert, 22, Rue Chauchat, 75009 Paris, France.

(♩ = 380-400)

stacc. mf p dolce mf p dolce mf p dolce

mf p dolce mf mf p f slap tongue

mp espressivo mp mp mp

molto risoluto stacc. slap stacc. slap ff ff

(b) David Ward-Steinman, *Etude on the Name of Barney Childs* (1989). Copyright © 1990 by MillCreekPublications, P.O. Box 556, Mentone, CA 92359. Used by permission of the publisher.

pesante Allargando poco a poco

f key clicks: V (clix) ff "Ghost" tonguing (slap tongue)

Example 4.8: Donald Martino, *Strata* for bass clarinet in B-flat (1966).

Copyright © 1967 by Apogee Press, Inc., World Library Publications, Inc., 5040 N. Ravenswood, Chicago, IL 60640. Used by permission of the publisher.

Example 4.9: Vocal sounds.

(a) William O. Smith, *Variants for Solo Clarinet* (1963). Copyright © 1967 by Universal Edition (London) Ltd. Permission to reprint granted by Theodore Presser Co., Presser Place, Bryn Mawr, PA 19010.

(b) Eric Mandat, *Folksongs* (III) (1986). Copyright © 1986 by Cirrus Music, P.O. Box 61, Carbondale, IL 62903. Used by permission of the publisher.

The image shows a handwritten musical score for guitar. At the top left, the tempo is marked as  $\text{♩} = 60$ . Above the first staff, there are chord diagrams for  $A^{\circ}$ ,  $B^{\circ}$ ,  $A^{\circ}$ ,  $B^{\circ}$ , and  $A^{\circ}$ . A handwritten asterisk (\*) is placed above the first  $B^{\circ}$  chord. The first staff begins with the instruction "sempre legato" and a dynamic marking of  $f$ . A box highlights the first six measures of the melody. A long horizontal line with an arrow at the end is labeled "8''". Below this staff is a dynamic curve that starts at  $f$  and tapers to  $p$ . The second staff is labeled "hum (in B<sup>b</sup>)" and has a tempo of  $\text{♩} = 60$ . It contains a melodic line with dynamic markings  $mp$ ,  $mf$ , and  $n$ . A horizontal line above it is labeled "6''" and has a question mark (?) at its end. A dynamic curve below it starts at  $mp$  and tapers to  $n$ . The third staff has a dynamic marking of  $mp$  and contains notes  $b^{\flat}$ ,  $b^{\flat}$ , and  $\#$ . A horizontal line above it is labeled "6''" and has a question mark (?) at its end. A dynamic curve below it starts at  $mp$ , rises to  $f$ , and then tapers to  $n$ . At the bottom, a handwritten note explains the asterisk: "\* = Side B<sup>b</sup> key should be played with r.h. thumb (also side B<sup>\#</sup> key later)".

### VOCAL SOUNDS (HUM AND PLAY)








Additional  
Effects

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The production of humming sounds while playing in an otherwise normal manner is possible throughout the normal playing range of the instrument. Although producing precise pitches, as in the illustration presented, generally requires considerable practice, the technique required for this effect is not difficult as long as the throat muscles are relaxed. When intervals are close together, difference tones and beating effects are a natural by-product, the latter used throughout the second movement of Smith's *Variants* (Example 4.9a). The Mandat example (Example 4.9b) uses humming under an ostinato pattern.

## BREATH OR AIR SOUNDS

This effect is accomplished by blowing through the instrument, but with an embouchure pressure insufficient for the production of a normal tone (also sometimes referred to as “toneless playing”). The result is the breathy, sizzling, “white noise” sound of the air itself as it passes beyond the reed. Pitch differentiation is discernible when accompanied by finger movement, but, naturally, only at the very softest dynamic levels. Although slight differences are noticed with second-register fingerings, the technique is best suited to fundamental fingerings (E' through B-flat').

Extensive use of this technique can be found in Helmut Lachenmann's *Dal Niente* (Example 4.10a). In this illustration,  indicates fingered but pitchless playing;  means inhale; , exhale;  is a multiphonic, the fingering (from Bartolozzi's *New Sounds for Woodwind*) a suggestion only;  indicates a closed oral cavity, and  an open one; , as the score indicates, is a request to blow on the reed with the instrument held a short distance from the mouth. Two works which use all manner of special effects (quarter tones, flutter tongue, glissando, hissing sounds, inhale and exhale alternations, tongue clicks on the roof of the mouth, color fingerings, muting, bird “peeps,” vibrato effects, mouthpiece sucks, singing and playing, amplification, as well as staging, costumes, and specified movements) are Stockhausen's *Eva's Spiegel* and *Suzani* from *Montag* from his opera *Licht*. Example 4.10b demonstrates, for basset horn, breath sounds (“colored noise”). The sounding pitches, as opposed to the fingered pitches, are in parentheses. The effect is used in a simpler but equally effective context in Olly Wilson's *Echoes for Clarinet and Tape* (Example 4.10c). With all three works, the suggestion/requirement is that the clarinet be amplified.

## MOUTHPIECE ALONE

A number of new works call for sounds produced by the mouthpiece alone or the sound of mouthpiece with the barrel attached. The pitch produced will vary somewhat depending on the equipment employed. The range possible is, therefore, approximate, roughly from a slightly high D<sup>'''</sup>, or even D-sharp<sup>''</sup> (pitch on B-flat soprano, or A clarinet which uses, basically, the same mouthpiece), extending, portamento fashion, via decreased jaw pressure, to approximately an octave lower. Further downward extension, to around B<sup>''</sup>, can be accomplished by cupping the hand around the end of the mouthpiece.

The Serocki example (Example 4.11a) combines mouthpiece alone with glissando (portamento) and flutter tongue. Another, less common, application is called for in Szalonek's *Improvisations Sonoristiques* (1968), which, using the graphic symbology presented in Example 4.11b, indicates that the player should suck through the reverse end of the mouthpiece while carefully pressing the reed with his/her finger. The result is a variable, high-pitched, squeaking sound which

Example 4.10: Air Sounds.

(a) Helmut Lachenmann, *Dal Niente (Interier III)* for a Solo Clarinet-Player (1970). Copyright © 1974 by Musikverlag Hans Gerig, Drususgasse 7-11, Cologne, Germany. Used by permission of the publisher.

(b) Karlheinz Stockhausen, *Susani* für Bassetthorn (1984). Copyright © 1991 by StockhausenVerlag, 5067 Kürten, Germany. Used by permission of the publisher.

(c) Olly Wilson, *Echoes for Clarinet and Tape* (1974, printed version available from Margun Music, 167 Dudley Road, Newton Centre, MA 02159).

“breaks in” at various partials according to the amount of pressure placed on the reed. The indication is to play loudly into the sounding board of the piano.

In a similar fashion, when the barrel remains attached to the mouthpiece, as called for in the clarinet part to Cage’s *Concert for Piano and Orchestra* (1957–58), the upper range is in the vicinity of G-sharp<sup>'''</sup>, the lower, approximately D<sup>''</sup>. With decreased jaw pressure, hand cupped over the end (as before), or finger inserted in bore, as called for in the Maslanka example (Example 4.11c), the lower limit is again around B<sup>''</sup>.

An additional possibility is a sound obtained by sealing the end of the mouthpiece with the hand and sucking the air out of the inside. This draws the reed against the facing, causing a soft popping sound upon its release as sufficient air is allowed to gradually reenter the mouthpiece interior. Periodicity depends upon the elasticity of the reed as well as the quality of its “seal” on the mouthpiece table. Nearly the same effect can be obtained by immediately releasing the hand from the end of the mouthpiece.

Example 4.11: Mouthpiece alone.

(a) Kazimierz Serocki, *Swinging Music for Clarinet, Trombone, Cello (or Double Bass), and Piano* (1970). Copyright © 1971 by Moeck Verlag, D 31 Celle, Germany. Used by permission of the publisher.

The image displays three staves of musical notation for a clarinet part. The first staff begins with a square box containing the letter 'L'. It features a series of eighth-note triplets, each marked with an accent (>) and a '3' below it. The second staff continues with similar triplet patterns, including some notes with a 'pizz.' (>) marking and a '3' below. The third staff starts with a circled '3' above a triplet, followed by a sequence of notes marked with '2', '3', and '4' above them, and concludes with a final triplet marked with a '2' above it.

(b) Witold Szalonek, *Improvisations Sonoristiques for Clarinet, Trombone, Cello, and Piano* (1968). Copyright © 1971 by PWM-Edition, Krakowskie Przedmiescie 7, Warsaw, Poland. Used by permission of the publisher.

Example 4.11.

(c) David Maslanka, *Woodwind Quintet* (1984). Copyright © 1984 by David Maslanka. Used by permission of the composer.

*mouthpiece and barrel only; range vary pitch with finger in barrel.*

*(b = ca 60) (written at sounding pitch)*

*always solo*

*very quick slide*

*f sempre - always a forced tone*

*slide over full beat*

*adjust to precise unison with flute*

*slow slide*

*very slow rise*

*not quite D4*

Additional Effects

**MOUTHPIECE ON LOWER HALF OF INSTRUMENT**

Also prevalent has been the construction of hybrid instruments by adapting the sound generator (mouthpiece and reed) to various types of other acoustical chambers, such as hoses, tubes, and even other instruments.<sup>5</sup> An interesting use of such an adaptation is found in F. Gerard Errante's *Souvenirs de Nice* (1975), in which the mouthpiece is placed into the lower half of the A clarinet (Example



4.12a)—professional clarinetists almost universally carry A as well as B-flat instruments—somewhat later in the work, this clarinet is also played simultaneously with the normal B-flat instrument, the reeds being controlled by both sides of the clarinet embouchure. The notation is at concert pitch: ♭ is a quarter-step flat, ♯ a quarter-step sharp, and ### three quarter-steps sharp.

A fingering chart, also using the A instrument, and again at concert pitch, is provided in Example 4.12b. When the B-flat clarinet is used, the result is roughly the same sequence, pitched a quarter-step higher. It might be noted that on either instrument the mouthpiece normally just barely fits into the socket of the lower portion. Special mouthpieces, with slightly narrower outside diameters, would allow for more flexibility in tuning, and, of course, with sanding, can easily be prepared.

The Smith example (Example 4.12c), for “demi-clarinet” (mouthpiece on the lower half of the B $\flat$  instrument), offers an alternative notation. The letters indicate normal right-hand fingerings on the clarinet (this example uses the chromatic fingerings); the pitches are those that result, transposed for the B $\flat$  clarinet.

Example 4.12: Mouthpiece on lower half of instrument.

(a) F. Gerard Errante, *Souvenirs de Nice for Unaccompanied Clarinets and Piano* (1975). Copyright © 1975 by F. Gerard Errante. Used by permission of the composer.

The image shows a musical score for a "Prepared A clarinet" in treble clef. The notation includes various dynamics such as *mp*, *ff*, and *vib.*, along with performance instructions like "at croak: 2'05\"", "let piano resonate", and "Continue by improvising in". Handwritten fingering diagrams are placed above and below the notes, showing finger positions on the keys. The score is written on two staves.

(b) Fingering possibilities (using A clarinet; B-flat pitches are approximately a quartertone higher, concert pitch).

The image displays a fingering chart for the A clarinet. It consists of two rows of musical notation. The first row shows notes from E to G# with fingering diagrams below them. The second row shows notes from F# to B# with fingering diagrams below them. Some notes have multiple fingering options indicated by different symbols (solid circles for fingers, open circles for thumb). The notes in the second row are labeled with letters and accidentals: F#, E, (F), G#, B $\flat$ , G#, B $\flat$ , B $\flat$ , B $\flat$  ring only, E, and B $\flat$ .

(c) William O. Smith, "64" for Demi-clarinete (1989). Copyright © 1990 by William O. Smith. Used by permission of Mill-Creek Publications, P.O. Box 556, Mentone, CA 92359.

STACC. . . . . 1

*p* E F F# G G# A A# B C Bb A# G F E

### M U T E S

Perhaps the most common muted effect is the type illustrated in the first Laneri example (Example 4.13a). A mute, made of cork (or other substances), is inserted into the bell; with all vents sealed, this completely blocks the air flow. The possibility of producing the fundamental is, of course, nonexistent; however, by fingering B<sup>♭</sup>, i.e., the fundamental with the register key vented, and accompanied by minor adjustments in jaw pressure/position, the pitches beginning at the second partial of the overtone series produce a veiled, muted sound.

The pitch of the overtones will vary according to the length of the acoustical chamber. The series in Example 4.13a is obtained with a 41 mm diameter cork, inserted approximately 29 mm into the bell. If the bell is sealed off at the end, by pressing it against either a crossed leg or a conveniently situated pillow, thus increasing the resonating length, approximately the same series again results, but beginning at C<sup>♭</sup> instead of C-sharp. Similarly, a cork with a 23 mm diameter, in-

Example 4.13: Muted effects.

(a) Roberto Laneri, *Exorcismi #1 for Clarinet, Viola, Trombone, Voice, Percussion* (ca. 1975). Copyright © 1976 by Seesaw Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.

cl *cl* *v.la* *perc.*

simple harmonics to use → change to mute #2 for (no pause - attacca)

drum (slowly walk back to stand in the circle)

turn stands to the inward position

(b) Roberto Laneri, *Exorcismi* #1. Copyright © 1976 by Seesaw Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.

(mute # 2 always)

(c) Karlheinz Stockhausen, *Susani* für Bassetthorn (1984). Copyright © 1991 by StockhausenVerlag, 5067 Kürten, Germany. Used by permission of the publisher.

served roughly to the point that the bell connects, produces nearly the same intervals transposed a whole step higher. Other possibilities, using different-sized corks or such sliding devices as wool instrument swabs, are numerous.<sup>6</sup>

The second Laneri example (Example 4.13b) uses a second mute that allows a certain amount of air to escape either through a hole drilled in the center or through grooves provided along the sides. The result is that the fundamental can be produced, but lowered in pitch according to the accumulated size of the openings, in this case an E-flat'. Although still noticeably muted, the upper partials are not as well damped as with the effect described above, but the overtone series that results is surprisingly similar to the series presented in Example 4.13a (D" is substituted for the former C-sharp"). This type of mute also often enhances the response of multiphonics. The Stockhausen example (Example 4.13c) calls for a special air-permeable, star-shaped mute (2.5 cm thick, 9.5 cm in diameter from point to point) inserted in the bell of the basset horn. The notation ↓ indicates slightly lower due to the mute; sounding pitches are in parentheses.

On woodwind instruments, every tone hole is basically a "bell" for the closed opening directly above. It is important to emphasize, therefore, that, unlike mutes

(d) William O. Smith, "64" for Demi-clarinet (1989). Copyright © 1990 by William O. Smith. Used by permission of MillCreekPublications, P.O. Box 556, Mentone, CA 92359.

8.  $\frac{1}{2}+$  = PARTLY MUTED

for brass and stringed instruments, mutes on woodwind instruments affect only the fingerings closest to the position of the mute. It is not appropriate, therefore, to think in terms of an evenly muted scale on the clarinet. As an illustration, when the 41 mm diameter mute mentioned above is used in conjunction with the low F' fingering (rather than B'), the result is a slightly flat fundamental F' with an overtone series similar to the second type of mute with the hole drilled in it. By the time G' (or D' in the second register) is attained, the mute has, for all practical purposes, lost its effectiveness. Although using the principles of the primitive (harmonic) flute, muted scale passages can be worked out, at this time the muted potential for the clarinet is fairly well limited to the overtone series determined by the characteristics of the mute employed.

The Smith example (Example 4.13d), for "demi-clarinet," calls for a small bathroom plunger, held over the clarinet bell with the left hand, for muted effects which also involve multiphonics. The  $\circ$  and  $\dagger$  symbols indicate open and closed.

An early example of muting is found in Berlioz's *Lélio, ou Le retour à la vie monodrama* (sequel to the *Symphonie fantastique*), 1831. The entire clarinet is to be enclosed in a linen or leather "envelope."

## KEY SLAPS AND RATTLES

This category involves basically two types: random rattles and noises produced mainly by the sounds of the mechanism, and key noises which are intended also to produce, softly, the acoustic pitch of the fingering. The Sydeman example (Example 4.14a) illustrates rattles and noises using the bass clarinet mechanism. Example 4.14b, in addition to presenting a number of other effects involving breath-only fingerings, provides an example of acoustic sounds produced by the action of the fingers and pads slapping on tone holes without breath.

The quality of key noises is not consistent throughout the instrument. Such variables as the tension of the springs, the size and hardness of the pads, and the

Additional  
Effects

Example 4.14: Key slaps and rattles.

(a) William Sydean, *Clarinet Duo*, third movement (for bass clarinets) (1973). Copyright © 1976 by Seesaw Music Corp., 177 East 87th St., New York, NY 10028. Used by permission of the publisher.

(Dance like)  $\text{♩} = 72$

(b) David Amram, *Quintet for Winds* (1968). Copyright © 1971 by C. F. Peters Corporation, 373 Park Ave. So., New York, NY 10016. Used by permission of the publisher.

Variation VI,  $\text{♩} = 56$   
slap keys 3

blow air through instr. slap

too too wee-ooo-wee-ooo

flutter tongue, air only

overall state of repair of the mechanism, make a precise response highly unpredictable; players usually need to experiment in order to find the keys with the greatest potential. Of course, for normal playing, the key noise should be as quiet as possible! The acoustic sounds work best in the fundamental register.

## H A N D P O P S

This effect is produced with the mouthpiece detached from the instrument, by hitting the barrel across its opening with either the palm of the hand, or, as in the Serocki example (Example 4.15), with the fingers. With the latter method, the sound tends to be slightly softer. Soft acoustic pitches, such as in Example 4.14b (above), can also be produced in this manner, but obviously only on the top half of the instrument. The pitch is, of course, higher when the barrel is also removed.

Additional  
Effects

Example 4.15: Kazimierz Serocki, *Swinging Music* (1970). Copyright © 1971 by Moeck Verlag, D 31 Celle, Germany. Used by permission of the publisher.

♩ = ca. 184

$\frac{4}{4}(\frac{2}{2})$  ||  $\overbrace{\hspace{2cm}}^4$  |  $\text{con dita}$   $\text{PPP}$  |  $\underset{3}{\text{y y}} \text{z}$  -  $\underset{3}{\text{y y}} \text{z}$  |  $\overbrace{\hspace{2cm}}^2$  |  $\text{y z}$   $\underset{3}{\text{y y}} \text{z}$  |

### L I P B U Z Z I N G

This effect also uses the instrument with the mouthpiece detached, and is played by buzzing into the barrel as is normal for brass instruments. Cage calls for this effect in the *Concert for Piano and Orchestra* as notated (indeterminately) in Example 4.16a. On the soprano clarinet, the lowest possibility, with very loose lip buzzing, is approximately D-sharp' (fingered like low E'). In the range beginning with low E', a quasi-scale is possible using normal fingerings to approximately A". The principle of production (and sound, to a certain degree) is similar to that of the sixteenth-century cornetto. Example 4.16b uses this technique exclusively. Normal fingerings are at normal clarinet pitch, although precise pitch can vary somewhat from instrument to instrument. It may seem simple; however, the technique requires some practice to get the pitches and dynamics accurately. Buzzing on the top joint, with the barrel removed, is another possibility, producing pitches in the "clarino" register.

Example 4.16: Lip buzzing.

(a) John Cage, *Solo for Clarinet in B-flat*, from the *Concert for Piano and Orchestra* (1957-59). Copyright © 1960 by Henmar Press Inc., 373 Park Ave. So., New York, NY 10016. Reprint permission granted by the publisher.

TPT.  
EMBOUCHURE  
WITHOUT  
MOUTHPIECE

T  
↑

Additional  
Effects

(b) Eric Mandat, *Etude(s) for Barney* (1990). Copyright © 1990 by MillCreekPublications, P.O. Box 556, Mentone, CA 92359. Used by permission of the publisher.

Very slowly,  
longingly

remove mouthpiece  
and barrel lips  
on barrel

less lip  
pressure

#### AIR ACROSS BARREL

This effect is produced by holding the edge of the barrel, attached to the instrument, just beneath the lower lip, and blowing across the opening as if it were a flute. The result, illustrated in Example 4.17a, is a breathy, barely audible series of fingered pitches (bearing little resemblance to the characteristic tone of the flute) in the range from F' to E''' (concert pitch using B $\flat$  clarinet).

A variation of this effect (Example 4.17b), using a flute embouchure on the first joint of the instrument, barrel removed, actually does produce a flute-type tone (or perhaps more accurately a shakuhachi-type tone). Pitch bendings are also possible. The left-hand fingerings produce, on B-flat soprano clarinet, pitches that are approximately a major tenth higher; the right-hand fingerings are microtonal. Special fingerings can, of course, also be devised. The range is from approximately concert G'' to E'''. Clarinetists who also play the flute should be warned that al-

Example 4.17: Air across barrel / first joint.

(a) Kazimierz Serocki, *Swinging Music* (1970). Copyright © 1971 by Moeck Verlag, D 31 Celle, Germany. Reprint permission granted by the publisher.

**B**

(b) Eric Mandat, *Folk Songs* (1982). Copyright © 1986 by Cirrus Music, P.O. Box 61, Carbondale, IL 62903. Used by permission of the publisher.

$\text{♩} = 60, \text{ ma}$   
*molto rubato*

Sounding pitch (in B<sup>b</sup>)

fingering pitch (in B<sup>b</sup>)

with vibrato

fast, intense vibrato

*sfz* > *mf* < *f*

*f* < *mf* < *f*

slower vibrato

*p sub.*

*piu mosso*

normal vibrato

no vibrato (p.)

*PPP*

*f*

*ff* > *mp*

Example 4.18: Eric Mandat, *The Jungle* (1989). Copyright © 1989 by Cirrus Music, P.O. Box 61, Carbondale, IL 62903. Used by permission of the publisher.

(♩ = 76)  
*meno mosso*

*p* sempre legato

repeat ad lib.

accel. poco a poco

repeat ad lib.

repeat ad lib.

*allarg.*

*a tempo*

*ad lib.*

*a tempo*

(ord.)

*ad lib.*

*ad lib.*

*ad lib.*


*ad lib.*

*mf* < *pp*



though the principle of production is the same, the embouchure feeling is quite different.

## C I R C U L A R B R E A T H I N G

Circular breathing on wind instruments is the ancient practice of producing a continuous sound by using the cheeks as an air sac, much as with a bagpipe, inhaling through the nose and forcing air from the mouth and throat through the instrument. Instruments with smaller, more resistant, openings in the mouthpiece or reed setup—oboes and bassoons, for example—have an easier time with circular breathing because the smaller opening allows more time for the inhale before all air is expended. The setup must be capable of briefly sustaining a tone with air support from the cheeks alone. Closer mouthpiece facings are perhaps preferable. On the soprano clarinet, the technique works fairly well in the low register. Circular breathing in the upper register, to approximately C<sup>7</sup>, although a few players have mastered it, probably should be considered “advanced.” A way of camouflaging the glitch that often accompanies the breath is to breathe during finger movements. Circular breathing on articulated passages (or during multiphonics) is enormously difficult, but not impossible (Example 4.18). Examples of works calling for circular breathing over extended periods are Daniel Goode’s *Circular Thoughts for Solo Clarinet* (1973–74) and Gino Forlin’s *Behind Sly Arc* (1989).<sup>7</sup> James Dillon’s *Crossing Over for Clarinet in B $\flat$*  (1978, ca. 1983, Edition Peters, London) uses the symbol  to indicate circular breathing in passages requiring a continuous sound. The technique is also becoming more and more prevalent on bass clarinet.

## E N D N O T E S

1. John Cage, *Solo for Clarinet in B-Flat*, the orchestral parts of the *Concerto for Piano and Orchestra* (Henmar Press [c/o Edition Peters, 373 Park Avenue South, New York, NY 10016], 1957–58), 126. The fingering is the same as that for low F<sup>7</sup> or E<sup>7</sup> with the r.h. middle finger removed.
2. Willi Apel, *Harvard Dictionary of Music* (2d ed.; Cambridge: Harvard University Press, 1969), 348, 689.
3. Owing to the greater size and more complex mechanism required, the B-flat contrabass omits several keys found on the other clarinets. This accounts for its comparatively limited altissimo register. Because the normal playing range does not allow lip bends beyond the semitone, portamento is not applicable to this instrument.
4. Bruno Bartolozzi, *New Sounds for Woodwind* (1st ed.; London: Oxford University Press, 1967), 22.
5. Denis Smalley, in *Gradual for Tape and Solo Clarinetist*, calls for a “tromophone in B-flat,” which is a trombone with a clarinet or saxophone mouthpiece attached.
6. An interesting variation used by William O. Smith is one in which the instrument, fingering low E<sup>7</sup>, is played into a normal household sponge. This actually raises the pitch somewhat.
7. Available from Theodore Presser, Bryn Mawr, Pa., and MillCreekPublications (*Etudes for the Twenty-First-Century Clarinetist*), Mentone, Calif., respectively.

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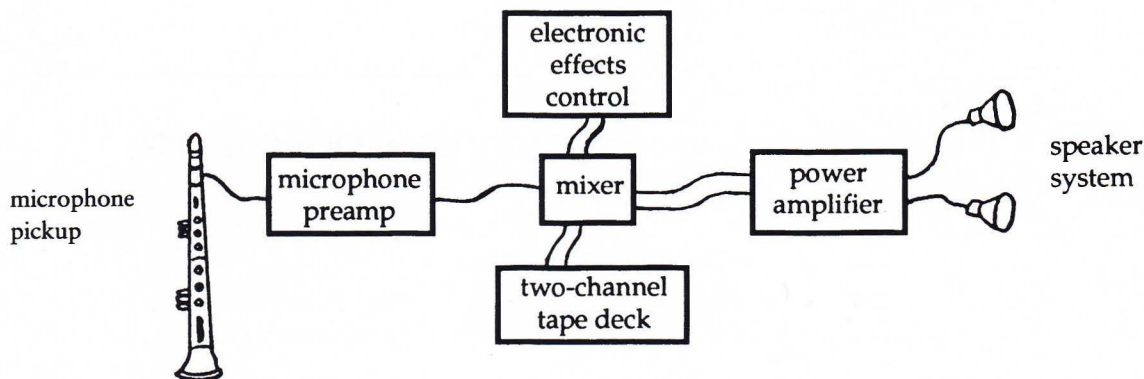
## Electronic Applications

A discussion of new timbral resources for the clarinet would be incomplete without consideration of the additional dimensions provided by the electronic medium. Beginning in the early 1960s with such works as William O. Smith's *Duo for Clarinet and Tape* (1960), Charles Whittenberg's *Study for Clarinet and Tape* (1961), and Morris Knight's *Refractions for Clarinet and Tape* (1962), a number of works have appeared for clarinet which call for the application of some type of electronics. These range from fairly simple types of "enhancement" setups, particularly where amplification is suggested for works involving prerecorded tapes, to works which combine synthesizers, such as Ron Pellegrino's *S & H Explorations* (1972) or *Phil's Float* (1974); Morton Subotnick's *Passages of the Beast* (1978) which uses specially rented "ghost" electronics; and such works as Jonathan Kramer's *Renaissance* (1974) or David Keberle's *Incantation* (1982), which combine arrays of special devices, often with highly trained technicians to operate them in performance. The appearance of pitch followers and MIDI (Musical Instrument Digital Interface) applications, including the "wind controller" in the mid-1980s, has also engendered a new category of compositions involving instruments with actual control of synthesized sounds. Visual media (film, video, synchronized slides, and so forth) can enhance, to varying degrees, the concert hall environment.<sup>1</sup>

A suggestion for a basic amplification system, one that would be suitable for the majority of the works in the present repertory, including those for clarinet and prerecorded tape, is illustrated in Example 5.1. It consists of some type of microphone pickup, a microphone preamplifier, optional auxiliary electronic devices, a mixer for combining tape playback and/or other sound sources, a two-channel tape playback, a two-channel amplifier, and a suitable speaker system.

These components, naturally, will vary according to the specific requirements of the works to be performed. For example, a control center for electronic devices

Example 5.1: Basic amplification system.



is not needed unless continual shifting from one device to another is called for; or a “stereo” amplification system would be necessary only when a two-channel tape is involved. In these cases, perhaps a self-contained unit, such as a standard guitar amp, would be suitable. Elliott Schwartz, on the other hand, also provides a quadraphonic tape (as well as the more common two-channel type) for his *Extended Clarinet* (1974); for his more recent *Mirrors for Barney and Arney* (1989), in which the performer makes his or her own tape, it is possible to use a monophonic setup. The possibilities for electronic amplification are numerous, with high-quality systems commonly exceeding by many times the cost of the clarinet itself.

## M I C R O P H O N E S

Microphones suitable for clarinet amplification are of two basic types, each with its own advantages and limitations: those that are attached directly to the instrument, and the more common “air” types. Among the types attached directly to the instrument are those that work on the principle of a transducer placed within the barrel or mouthpiece. A pickup such as that produced by Barcus-Berry uses a piezoelectric device made of a special nonhardening adhesive which attaches to the bottom of the reed. DEG Music Products provides a special barrel with a pickup inserted. Reduced problems with feedback,<sup>2</sup> good isolation in multiple microphone situations, and improved response when used with pitch followers or other special effects are some of the advantages. The disadvantage is a fairly low fidelity of the clarinet’s sound. In situations where better fidelity is desired, the standard “air” type of microphone is probably the best choice. Devices are available (or can be devised) which attach to the instrument, holding a small microphone a short distance above the tone holes. Height and placement should be dictated in achieving a smooth response throughout the range of the clarinet. “Wireless” transmitter/receiver systems can free the clarinetist from the equipment. In the right envi-

ronment, such systems are accurate and free from drop-outs, but they may represent another set of possibilities for technical difficulty (radio frequency interference, low batteries, and so forth). The highest fidelity and most secure connection between microphone and preamplifier is the low-impedance "balanced line." This three-wire system allows for maximum immunity from noise as well as long cable lengths without loss in fidelity. If an "unbalanced" (two wire) connection is used, keep cable lengths to a minimum (< four meters). A direct box or an in-line transformer may be used to balance the unbalanced signal for longer cable lengths or to interface with a balanced preamplifier.

## P R E A M P L I F I E R S

A preamplifier is a unit that amplifies the signal of a low-level source to a point where it can be further amplified without affecting the signal-to-noise ratio. Microphone preamps are available either as part of the mixer, as separate units, or as elements integrated into the design of auxiliary effects devices. Source (microphone or pickup) and input (preamplifier) impedance, as well as signal levels to and from the preamplifier, should be a consideration. Preamplifiers which are used with the above-mentioned pickups are usually inappropriate for use with conventional microphones.

## M I X E R S

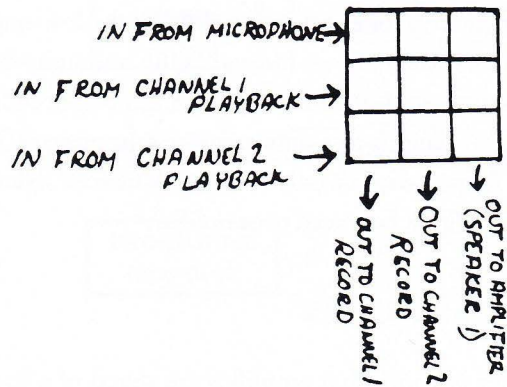
A mixer has adjustable inputs for mike (low-level) and line (high-level) connections, terminating in a varying number of common outputs. With it, the clarinet can be combined with other sources (prepared tape, other instruments, auxiliary devices, and so forth) through the same amplifier and speaker system. Many mixers also provide equalization circuits for altering the tone quality of input modules, and auxiliary buses for routing signals to auxiliary devices or for monitoring. Cost and quality of mixers is dictated by the number and type (balanced or unbalanced) of inputs and outputs, the type and quality of equalization on each input, and the number of auxiliary buses and returns. The mixer required for Jonathan Kramer's *Renascence* is matrixed in such a way that three inputs can be channeled through any one of three outputs as illustrated in Example 5.2a. The outputs go either to a speaker or into a two-channel delay system using reel-to-reel tape decks (record and play) spaced a specified distance apart (Example 5.2b).

## A M P L I F I E R S

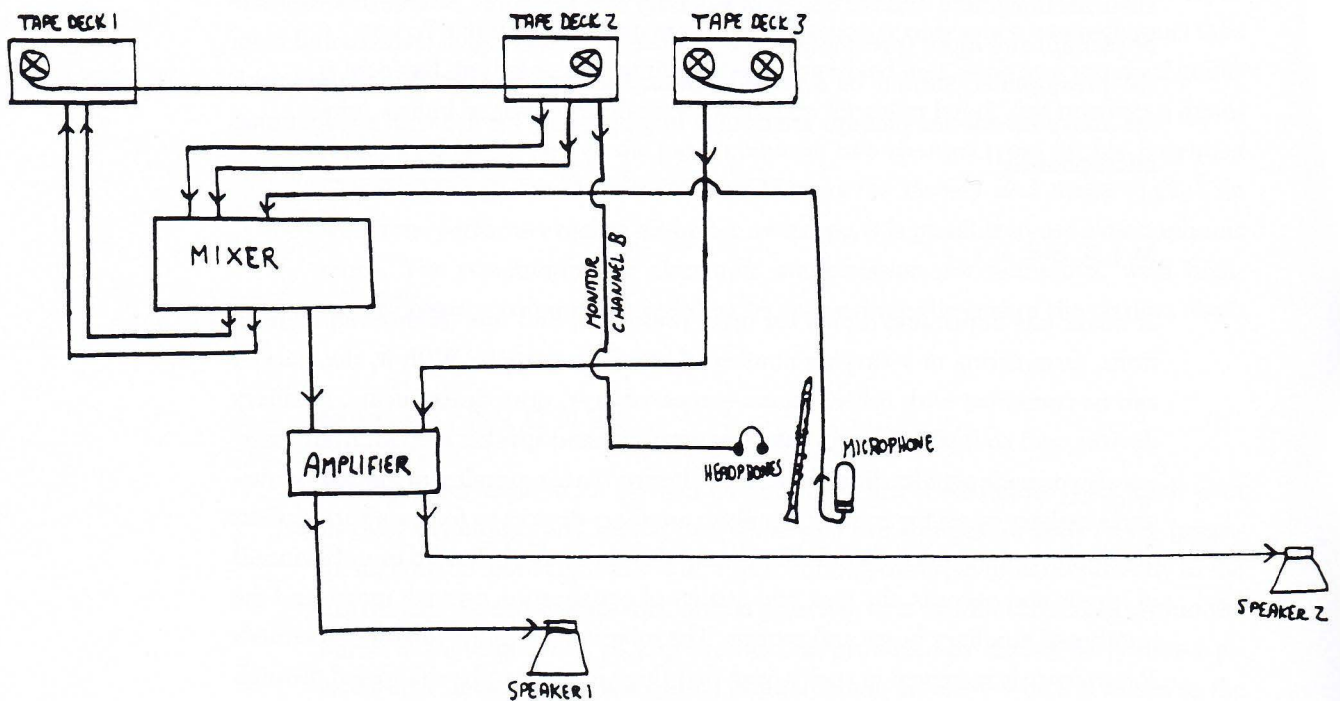
The power amplifier may be either of the integrated design, which combines a preamp with the amplifier, or a single amplifying unit. For the majority of the present literature, it should provide two channels. The power output required can vary considerably, depending upon the size and efficiency of the speaker system

Example 5.2: Mixers.

(a) Jonathan Kramer, *Renaissance* (1974, ms).



(b) Delay system.



and the acoustical characteristics of the performance area. In order to avoid unnecessary distortion, maximum power should be from 6 to 10 dB higher than the working level desired, with a minimum requirement seldom falling below 30 rms watts of power per channel. Harmonic distortion should not be higher than 1 percent, hum and noise no less than 40 dB below the maximum power output of the system. Since equalization changes frequency response, distortion can result unless care is taken that the amplifier has sufficient power to also drive the equalized product.

## S P E A K E R S

Owing largely to the consideration of mobility, performers usually settle for whatever speaker system may be available. However, tonal characteristics can vary considerably with different types and qualities of speakers, and, when possible, care should be exercised in their selection. As with all types of music performance, sound quality, amplified or not, is a very basic ingredient.

Speaker types, of course, can depend upon the particulars of the performance. Where simple amplification is desired, a speaker designed especially for instruments (guitars, electronic organs, and so forth) may be suitable, especially when considerable volume is desired. Instrument speakers are generally more durably constructed, designed to take loud dynamic levels and special effects without distortion or actual damage to the speaker diaphragm. Where the clarinet is to be combined with prepared tape or other line sources, the acoustical suspension type, such as that used in most high-quality home installations, is perhaps preferable. This type usually provides a better frequency response, resulting in a more realistic and flattering representation, and generally establishes a better balance between the speakers and the live sound. In large auditoriums, larger reinforcement speakers may prove necessary. The danger here is that the system can easily overpower the clarinet.

Speaker size should be compatible with the performance area and the output characteristics of the amplifier. Generally, the smaller the speaker enclosure, the more the bass is attenuated, with the larger systems being more suited for live electronic performance. Care should be taken to see that the impedance of the speaker matches that of the amplifier, commonly 4, 8, or 16 ohms, and that the speaker will accept sufficient power for the situation at hand. Speaker wire gauge and length may influence impedance and frequency response. Best results can be obtained with the use of short lengths of wire designed for high-fidelity audio (not common lamp cord). In order to allow for sufficient "headroom," the amplifier may have a larger power output than that for which the speaker is rated; in such a case, the result of bringing the system to maximum amplification can have a disastrous result on the speaker. Use of a compressor/limiter before the amplifier can remedy the situation. Frequency response should be comparable to that of the amplifier, as well as to other components of the system, with 20 to 20,000 Hz generally considered adequate for high-quality sound reproduction. Intermodulation distortion should be as low as possible. Speakers have been developed with less than 0.5 percent intermodulation distortion. Transient response—the time that it takes for the speaker to attack and decay—is also a consideration.

Speakers should also be set up in such a way that they are "in phase." In most situations, this can be accomplished simply by seeing that the positive and negative connections from the amplifier are connected to the identical terminals on the speaker. Most two-conductor wire provides some manner of identification for such purposes. When the negative and positive terminals are impossible to identify, or when the speakers are for any other reason suspected of being out of phase, the

connections on the speakers can be reversed and the output reevaluated. This is accomplished by walking back and forth in front of the speakers listening for a consistent level. When fed a mono signal, speakers that are out of phase will sound as if there is an empty spot between them.

## T A P E R E C O R D E R S

With the increasing number of works for clarinet and some type of prerecorded tape, the facility for tape playback has become an important component of the player's electronic setup. In the "old days" (through the early 1970s) these were generally cumbersome 15 ips or 7.5 ips two-channel reel-to-reel machines. Today, technology is such that players can use much smaller and often less expensive cassette playbacks with nearly equal results. Higher ratings will, of course, provide more crisp and brilliant results; however, for most purposes, satisfactory results can be obtained with a response in the neighborhood of 30 to 15,000 Hz. A signal-to-noise ratio of less than 58 dB above 5 kHz will generally provide noticeable sibilance, causing listener fatigue over long periods. The total harmonic distortion should not exceed 2.5 percent, and wow and flutter not more than 0.15 percent. It is important for performers to realize that tape transports, from one manufacturer to the next, do not run at uniform speeds. A tape that has been prepared on one machine will often play back at a slightly faster or slower speed, giving higher or lower overall pitch on another machine. Even though it is common for players to carry extra barrels that will play at a variety of pitch levels, situations can easily arise where playing in tune with a familiar tape on an unfamiliar machine is absolutely impossible, making the performer's control over the playback equipment even more imperative. Ideally, tapes should be prepared that will play in tune specifically on the equipment that is to be used for playback. The increase in availability of small, high-quality cassette recorders, many with variable speed control, is, of course, a major advantage.

Digital record/playback formats eliminate many of the problems associated with pitch variation, wow and flutter, noise, and dynamic range. These formats continue to diminish in cost and size while increasing in quality. Such systems now represent a viable alternative.

## E F F E C T S P R O C E S S I N G

What follows is a listing of some of the more common effects that can be used for "processing" the clarinet sound. It should be noted that these devices are found in various formats. Modular voltage controlled synthesizers commonly included spring reverberation, ring modulation, envelope shapers and followers, as well as facilities for mixing; and a number of manufacturers combined certain devices in a variety of "packaged" configurations. Powerful digital multi-effects processors using state-of-the-art electronics can produce these and many more complex effects

with individual parameters controlled via MIDI. Such automation increases the potential for use of effects in live performance. Some prefer the more “decadent” sound of the older types.

*Delay.* A variety of effects can be achieved by combining an audio signal with a delayed signal of itself. Delay time ranges from a few milliseconds (phasing/flanging timbral effect) through doubling/chorusing to perceptible echoes at intervals of several seconds. Delay may be created by magnetic tape, analog, or digital methods. Magnetic tape delay is created by the distance between the record head and playback head(s). It is available using any three-head tape deck and a mixer. However, the delay time(s) may be dictated by fixed-head distances and tape speeds. Special magnetic tape transports with a movable or multiple playback head(s) or variable speed transports allow for a variety of delay times. Shifting these parameters during input has interesting pitch variation effects. A variable gain feedback loop allows the user to tailor the number of repetitions of an echo. Analog delay can deliver accurate fidelity at short delay times and considerable “personality” at longer ones. An integrated low frequency oscillator can modulate the delay time for pitch shifting and phasing effects. A variable feedback loop may cause considerable timbral change. The digital delay extends the delay times and fidelity beyond analog delay. This technology is capable of precise intervals of pitch shifting for tuned chordal effects.

*Reverberation.* Reverberation is the prolongation of sound waves by reflections of varying volumes, frequency response curves, and time intervals as produced by boundaries and other surfaces of the acoustical space or as generated artificially. Although there are others, the two most portable types of artificial reverberation are spring and digital. The first of these is found in many modular voltage-controlled synthesizers and guitar amplifiers. The audio signal is transduced to mechanical energy by means of a moving-coil driver mounted at one end of the spring assembly. Many reflections at different intervals are propagated through the spring. Their sum is transduced to an audio signal and may be mixed with the original signal. Though limited in adjustable parameters, the spring reverb has considerable character. In digital reverberation and signal processing, samples of the audio signal are converted into a series of binary numbers by an analog to digital converter. The samples are stored, manipulated, and output to a digital to analog converter by a processor in real time. Using algorithms with user-definable parameters, the processor creates and combines multiple delay lines which may model a real acoustical space (small room, large hall, stadium, and so forth) or an electronic effect (i.e., plate, spring, gated, or reverse reverb as well as many of the delay and other effects listed in this section). Multi-effects processors are capable of executing several of these models at once.

*Ring Modulation.* The ring or balanced modulator is a device in which the sum and difference of the frequency components of two separate inputs are combined into a single output. Although on some units it is possible to “blend” the original inputs with the modulated sounds, the source material is generally not a



Example 5.3: Victor Saucedo, *Music I. X.* (1975, ms).

RING MODULATOR →

OSC.  
 FREQ 7 [1400 HZ]  
 SHAPE 5  
 LEVEL 7-8 [4 VOLTS]  
 R. Mod. 8-10

♩ = 66

1. *mf* Absolutely no Vibrato

2. *mf* Absolutely no Vibrato

3. *mf* Absolutely No Vibrato

4. *mf* Absolutely No Vibrato

DO NOT TONGUE, BUT PUSH AIR FOR ATTACK

2 3 4 5 6 7 8

prominent part of the modulated product. An example of its use for clarinet is provided in Victor Saucedo's *Music I. X.* (1975), which combines the input of four clarinets with a 1400 Hz sine wave (Example 5.3).

*Frequency Shifters.* These function in the same manner as the ring modulator, except that the result is *either* the sum *or* the difference of the frequency components of the original inputs. This device, when combined with a sine waveform, is used primarily to extend the range of the instrument, upward as well as downward. The result is a parallel motion of live and modulated sound at variable intervals away from the source.

*Octave Dividers.* This device is similar to the frequency shifter. Generally, only octave divisions are possible. Although more limited than the frequency shifter or digital technology, its advantage is one of cost.

*Envelope Modifiers.* With these, amplitude characteristics of the nonmodified clarinet sound are varied according to the attack, sustain, and decay controls of a traditional envelope shaper. On commercially available units, this event is trig-

gered with a foot-operated on and off switch; on the synthesizer, periodicity is generally determined either manually or with separate control voltages. The envelope follower is a more sophisticated device, found on some voltage-controlled synthesizers, with which the enveloped clarinet can produce a control voltage of its own proportional to its amplitude. With the use of side chain insertion, a technique used with variable-gain amplifiers (i.e., compressor/limiters), the clarinet can influence the characteristics of an external signal, or vice versa.

*Filters.* Filters provide selective attenuation of certain areas of the instrument's frequency spectrum. When these are voltage-controlled, the result is a continual shift in timbre, with the extent determined by the characteristics of the external applied voltage. Use with an internal envelope follower and a sample/hold circuit may result in a "dancing" array of seemingly random pitches which respond to the characteristics of the input signal. The fixed-filter bank is a series of continuously arranged narrow band-pass filters, each with its own attenuation capacity. With this type, it is possible to eliminate bandwidths that lie within the spectrum as well as those of the outer extremities. This capability is also available on some voltage-controlled synthesizers.

*Wah-Wah.* This effect, although designed primarily for guitars, also can be applied to the clarinet. It works with a special type of filter that is swept through the amplified sound at a rate controlled by a foot pedal. The result is somewhat analogous to the "wah-wah" sound commonly produced on muted brass instruments. They are available as separate components, and can often be used for normal volume control.

*Distortion.* Again, designed primarily for guitars, the distortion device adds harmonic partials to the instrument's amplified output. The tone quality is often adjustable with volume, tone, and balance controls. Though it may not be a pleasing sound in and of itself, its rich harmonic output may enhance the performance of other effects. The unit is generally operated with an on/off foot switch.

*Tremolo and Vibrato.* Although the terms are often used interchangeably, tremolo technically refers to variations of amplitude, and vibrato to variations of frequency. Since vibrato is the more costly of the two, most of the equipment commonly included with instrument amplifiers is of the tremolo type. They usually provide depth and speed controls and are seldom available as separate components. It might be noted that tremolo can also be simulated with a phasing device.

*Sample and Hold.* This unit is commonly found on voltage-controlled synthesizers. It is a special type of control voltage processor which, when activated by an internal trigger or pulse control, samples the voltage of an input waveshape and holds this voltage until the next sample is triggered. The result is a series of discrete control voltages with characteristics determined by the sampling rate and the waveshape of the input voltage. This is used as a voltage control source by other voltage-controlled modules. Sample and hold is a primary device used in Ron Pellegrino's impressive *S & H Explorations for B-flat Clarinet and Arp 2600 Synthesizer* (1972).

## PITCH FOLLOWERS

These devices allow the clarinet to control frequency and/or amplitude of synthesizers. Pitch-to-voltage converters are used with voltage-controlled synthesizers. The pitch from the clarinet is converted to a corresponding control voltage which may be used to control the frequency of an oscillator or other voltage control inputs. Many of these modules incorporate an envelope follower which will convert the dynamic range to a corresponding control voltage for use with a voltage-controlled amplifier or other voltage control inputs.

Pitch to MIDI interfaces allow the instrument to control synthesizers or input to computer sequencer and notation programs. The MIDI language includes information on pitch, dynamics, pitch bend, and so forth. Accuracy is dependent upon the quality of the input signal. Under the right circumstances, the clarinet can be made as powerful an input device as wind controllers designed for this application. These devices require that careful adjustments be made to such parameters as tuning, sensitivity, dynamics, response time, and pitch bend.

## PERFORMING WITH ELECTRONICS

A major problem with mixing clarinet with tape or "live" electronics is that of arriving at a proper acoustical interaction between the instrument and the electronics. Such factors as the damping effect of the audience on the acoustics of the hall, variations in response with the particular equipment employed, and even all-too-frequent malfunctions in the various components of the electronic setup, contribute to a situation in which better results can almost invariably be obtained by arranging for an assistant to control and trouble-shoot the electronics during the performance. It is seldom that the settings determined "ideally" beforehand will be the settings desired with an audience present. The problem becomes more complex when one considers that it is impossible to anticipate the more refined characteristics of dynamics and equalization for particular halls on prerecorded tapes. Although often necessary, the problem with the clarinetist controlling these matters during the performance, in addition to that of player overload, is that the sound produced to the player on stage, particularly with electronics, is totally different than that which reaches the audience.

A solution is to position the electronic control center with a well-rehearsed technician centered in the audience. Volume and equalization can then be adjusted, continually if necessary, in manners best suited to the character and musical directions of the piece according to the real-time requirements of the acoustical situation. The technician works in partnership with the player in creating the "rightness" of the total sound. The technician, in such a way, can animate, in ways that are compatible with the composer's intentions, an otherwise inanimate component.

## ENDNOTES

1. F. Gerard Errante's *Contemporary Clarinet Repertory for Clarinet and Electronics* (1989; 2d ed., 1993) is an extensive annotated bibliography of published and non-published works in the electronic and multi-media area. MillCreekPublications, P.O. Box 556, Mentone, CA 92359.

2. Feedback, instantly recognized by a loud howl that continues until the gain on the amplifier is reduced, is caused by sympathetic vibrations between the speaker and the microphone, making a narrow-pattern or unidirectionally designed mike imperative for sound reinforcement. With this type, it is possible, through experimentation, to point the mike in directions (other than toward the speakers) that can substantially increase the system's amplifying power. Feedback can also be controlled with the aid of a frequency equalizer.

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William O. Smith

Born in Sacramento, California, in 1926, William O. Smith began playing the clarinet at the age of ten. In his teens, he initiated the dual life that he has followed ever since: leading a jazz orchestra while also performing with the Oakland Symphony; after high school and a year “on the road” traveling with various bands, he attended Juilliard during the day while playing in jazz clubs at night.

Smith studied composition with Darius Milhaud at Mills College in 1946 and with Roger Sessions at the University of California, Berkeley, receiving B.A. and M.A. degrees from that school in 1950 and 1952. He also attended classes at the Paris Conservatory (1952–53) and the Juilliard Institute (1957–58). His awards include a Prix de Paris, the Phelan Award, a Prix de Rome, a Fromm Players Fellowship, a National Academy of Arts and Letters Award, a BMI Jazz Pioneer Award, and two Guggenheims. He has taught at the University of California, Berkeley, the San Francisco Conservatory, and the University of Southern California. Since 1966, he has been the director of the Contemporary Group at the University of Washington.

His association with Dave Brubeck began at Mills College, where he was one of the founders of the Dave Brubeck Octet and responsible for many of the group’s arrangements. His *Schizophrenic Scherzo*, written for the Octet in 1947, was one of the first successful integrations of modern jazz and classical procedures, a style which later became known as “third stream.” His work with Brubeck and others in this direction can be heard on a number of the recordings listed below.

He was also among the earliest performers to experiment, in the early 1960s, with new color resources for the clarinet, this after listening to Severino Gazzeloni’s similar work on the flute. His *Duo for Flute and Clarinet* (1961)<sup>1</sup> used these techniques, the multiple sonorities very likely being the first of their type to be precisely notated. He was also responsible for a number of other works using these sonorities, including John Eaton’s *Concert Music for Solo Clarinet* (recorded on CRISD 296), Gunther Schuller’s *Episodes*, Larry Austin’s *Current for Clarinet and Piano*, William Bergsma’s *Illegible Canons* (recorded on MHS 3533), Pauline

Oliveros' *The Wheel of Fortune*—a theater work based on Smith's astrological chart—and Luigi Nono's *A Floresta* (recorded on Arcophon AC 6811). About *Variants for Solo Clarinet* (1963), Eric Salzman wrote (*New York Herald Tribune*, March 14, 1964): "William Smith's clarinet pieces, played by himself, must be heard to believe—double, even triple stops; pure whistling harmonics; tremolo growls and burbles; ghosts of tones, shrill screams of sounds, weird echoes, whispers and clarinet twitches; the thinnest of thin, pure lines; then veritable avalanches of bubbling, burbling sound. Completely impossible except that it happened."

The following is a list of Smith's compositions involving the clarinet, including a discography of his clarinet works and his jazz performances, and his early "card file" of multiphonics for the clarinet.

## COMPOSITIONS INVOLVING THE CLARINET

- 64: demi-cl (1989, MillCreekPub.)+++++
- Agate*: jazz soloist and jazz orch (1974)
- Alleluia*: chorus and/or instruments (1990)
- Ambiente*: jazz ensemble (1970)
- Anyone*: S, SAA, fl, cl, bsn, perc, 2vn, vla, vc (1948)
- Around the Blues*: 2 cls (1988, Ravenna Editions)
- Asana*: elec cl (1985, Edi-Pan)\*\*\*\*\*
- Aubade*: cl solo (1989)
- Chamber Muse*: cl, perc, dancer (1970)
- Clarinet Duets* (1949, MJQ Music)
- Concerto for Clarinet and Combo* (1957)\*
- Concerto for Clarinet and Small Orchestra* (1985)
- Concerto for Jazz Soloist and Orchestra* (1962)---
- Diversion*: fl, cl, ob, hn, bsn (1986)
- Divertimento for Jazz Combo*: fl, cl, gtr, vib, cb, drs (1956)-----
- Divertimento*: cl, bsn, hn, vn, vc (1955)
- Duo for Clarinet and Cello* (1980)
- Duo for Clarinet and Piano* (1961)
- Duo for Clarinet and Tape* (1957, Edi-Pan)++
- Duo for Flute and Clarinet* (1961)
- Duo for Two Conductors*: fl, cl, bsn, pf, 1 vn, vla, vc (1947)
- East Wind*: wind ensemble (1990)
- Ecco!*: cl and orch (1978, MJQ)
- Elegia*: cl, str orch (1976)
- Elegy for Eric*: jazz combo (1964)\*\*\*
- Emerald City Rag*: 2 cls, bcl (1987)
- Encounter*: cl, trb (1970)
- Epitaph*: cl solo (1977)
- Eternal Truths*: fl/picc, ob/Eng hn, cl/bcl, bsn---
- Explorations for Jazz Combo and Tape* (1963)
- Explorations II for Five Instruments* (1966)
- Eye Music*: cl, trb (1985)
- Fancies*: cl alone (1966, MJQ Music)---
- Five for Milan*: cl, jazz orch (1980)
- Five Fragments for Double Clarinet* (1978, Edi-Pan)++
- Five Inventions*: fl, cl (1987)
- Five Pieces for Clarinet Alone* (1957)-
- Five Pieces for Flute and Clarinet* (1957)\*\*
- Five Studies for Clarinet and Violin* (1964)

*Fragments*: cl solo (1977, Edi-Pan)++++  
*Greetings*: 5 or more cls (1982)++  
*Illuminated Manuscripts*: fl, ob, cl, hn, bsn, computer graphics (1987)  
*In A Minor*: instruments and/or voices (1989)  
*In Memoriam: Roger Sessions*: cl solo (1988, Perspectives)---  
*Incantation*: cl, voices (1979)++  
*International Set*: jazz combo (1965)  
*Interplay*: jazz combo and orch (1964, MJQ Music)  
*Jazz Fantasy*: 2 cls (1986, Ravenna Editions)  
*Jazz Set for Clarinet and Trombone* (1982)  
*Jazz Set for Flute and Clarinet* (1974, MJQ Music)  
*Jazz Set for Solo Clarinet* (1978, Shal-u-mo Editions)\*\*\*\*  
*Jazz Set for Two Clarinets* (1983, Universal Ed.)  
*Jazz Set for Violin and Wind Quintet* (1991)  
*Line Up II*: instruments and voices (1986)  
*Line Up III*: cl ens (1986)  
*Love Your Neighbor*: instruments and/or voices (1990)  
*Meditations*: demi-cl (1990, Edi-Pan)++  
*Mosaic*: cl, pf (1964, MJQ Music)--  
*Mu*: cl and small orch (1978)  
*Music for "Oedipus Rex"*: vn, cl, perc, pf (1948)  
*Music for "Proem"*: cl, tpt, vn, vc (1949)  
*Music for "The Blameless Fool"*: fl, cl, bsn, pf, 2vn, vla, vc (1948)  
*Music for "The Duchess of Malfi"*: fl, cl, tpt, pf (1948)  
*Musing*: 3 cls, 3 dancers (1983, Edi-Pan)++  
*Nine Studies for Solo Clarinet* (1978, Ravenna Editions)  
*One*: SATB, ob, cl, tpt, trb, vn, vc (1975)  
*Oni*: cl, keyboard, perc (w/electronics) (1986)  
*Pan*: cl & echo (1990)++  
*Pente*: cl, str quart (1983)  
*Phils Chart*: cl solo (1989)  
*Piccolo Concerto*: fl/picc, cl, pf, vn, vc (1991)  
*Quadri*: jazz combo, orch (1968, MJQ Music)  
*Quadrodram*: cl, trb, perc, pf (1970)  
*Quartet for Clarinet, Violin, Cello, and Piano* (1958)--  
*Quiet Please*: jazz orch (1982)  
*Quintet for Clarinet and String Quartet* (1950)  
*Random Suite*: cl, tape (1965)  
*Reflection*: cl, voices (1980)  
*Ritual*: 2 cls (1 player) (1989, Edi-Pan)++  
*Roberto*: 2 cls (1972)  
*Schizophrenic Scherzo*: cl, alto sax, tpt, trb (1947)+  
*Serenade for Flute, Clarinet, Trumpet, and Violin* (1947)  
*Serenade*: cl, vn, vc (1989)  
*Seven Haiku*: cl solo (1987, Edi-Pan)\*\*\*\*\*  
*Slow Motion*: elec cl, computer graphics (1987)  
*Soliloquy*: cl & tape machines (1978, Edi-Pan)  
*Solo*: elec cl (1980, Shall-u-mo)++++  
*Sonata for Clarinet and Piano* (1948)  
*Songs for Soprano and Two Clarinets* (1974)  
*Studies for Soprano and Clarinet* (1965)  
*Suite for Clarinet and Violin* (1952, Oxford University Press)-----  
*Suite for Clarinet, Flute, and Trumpet* (1947)  
*Suite from "Four in the Afternoon"*: cl, vn, pf (1951)  
*Tangents*: cl, orch (1965)  
*The Hours Rise Up*: SATB, fl, cl, tpt, vn (1947)  
*Theona*: jazz combo, orch (1975, MJQ Music)  
*Thirteen*: fl, 2 cls, hn, 2 trbs, vc, pf (1982)  
*Three Pieces for an Experimental Film*: fl, cl, bsn (1948)  
*Three*: sop voice, trb, cl, dancer (1975)

William O.  
Smith

*Trio for Clarinet, Violin, and Piano* (1957) –  
*Trio for Clarinet, Violin, and Piano* (1984)  
*Twelve*: cl, str orch (1979)  
*Two Blew Too Blue*: 2 cls (1987)  
*Variants for Clarinet Alone* (1963, Universal Ed.)+++  
*Variations for Three*: 3 cls or 3 basset hns (1988)  
*Webster's Story*: sop voice, cl, trb (1978)

+ Recorded, Fantasy Records: The Dave Brubeck Octet  
++ Recorded, Edi-Pan Records: CD 3023  
+++ Recorded, Composer's Recordings: CRI SD320; and Mark Records: MRS 32645  
++++ Recorded, Edi-Pan Records: PAN 3023  
+++++ Recorded, Mark Records: MES 38084 (F. Gerard Errante)  
+++++ Recorded, Twenty-First Century Etudes, vol. 1: Advance Recordings FGC 33  
(Phillip Rehfeldt)  
– Recorded, Contemporary Records: M6010; and *Five Pieces* (Paul Drusher) Mark Records: MRS 32641  
– – Recorded, Composer's Recordings: CRI SD320  
– – – Recorded, New World Records: 209  
– – – – Recorded, Crystal Records: 5257  
– – – – – Recorded, Perspectives of New Music, vol. 23, no. 2  
– – – – – Recorded, Contemporary Records: C6001, S7015  
\* Recorded, Contemporary Records: M3536  
\*\* Recorded, Orion Master Recordings: ORS 84474 (Karl Kraber)  
\*\*\* Recorded, Cambridge Records: CRS 2820  
\*\*\*\* Recorded, Mark Records: MRS 32645  
\*\*\*\*\* Recorded, Capstone: CPS 8604 (F. Gerard Errante)  
\*\*\*\*\* Recorded, Edi-Pan S20–57 (David Keberle)

## ADDITIONAL RECORDINGS

### Compositions

*Contemporary Composers Series: William O. Smith, Vol. 1* (Contemporary: C60001, S7015)  
*Contemporary Composers Series: William O. Smith, Vol. 2* (Contemporary: M6010, S8010)  
*Winds from the Northwest* (*Straws* for fl and bsn) (Crystal: 351)

### Performances

William Bergsma, *Illegible Canons* (Musical Heritage Society: MHS 3533)  
John Cage, *Atlas Eclipticalis* (Mode: 316)  
John Eaton, *Concert Music* (Composers Recordings, Inc.: CRI SD296)  
Gail Kubik, *Sonatina* (Contemporary: 8013)  
Luigi Nono, *A Floresta* (Arcophon: AC 6811)

### Jazz Performances

*Americans in Europe, Vol. 1* (Impulse: 36, 1965)  
*Blue Rondo* (The Dave Brubeck Quartet, Concord: CJ-317, 1987)  
*Moscow Night* (The Dave Brubeck Quartet, Concord: CJ-357-C, 1988)  
*New Wine* (The Dave Brubeck Quartet, Music Masters: 5051–2, 1990)  
*Blue Rondo* (The Dave Brubeck Quartet, Concord: CJ-317, 1987)  
*Brubeck a la Mode* (Fantasy: 3301, 8047, 1960)  
*Colours* (Edi-Pan: NPG 807, 1978)  
*Concord on a Summer Night* (The Dave Brubeck Quartet, Concord: CJ-198, 1985)  
*Dave Brubeck Octet* (Cireco: 3239, 4020, 4004, 1951)  
*Folk Jazz: Bill Smith Quartet* (Contemporary: M359, S7591, 1961)  
*For Iola* (The Dave Brubeck Quartet, Concord: CJ-259, 1986)



*Journey Without Maps* (Keen: 1902100-S, 1979)  
*Moscow Night* (The Dave Brubeck Quartet, Concord: CJ-357-C, 1988)  
*Music to Listen to Red Norvo By* (Contemporary: M3536, 1956)  
*Near Myth: Brubeck and Smith* (Fantasy: 3319, 1961)  
*New Dimensions* (Epic, 1964)  
*New Wine* (The Dave Brubeck Quartet, Music Masters: 5051-2, 1990)  
*Reflections* (The Dave Brubeck Quartet, Concord: CJ-299, 1987)  
*Sonorities* (Edi-Pan: NPG 801, 1977)  
*The American Jazz Ensemble in Rome* (RCA Victor: 2557, 1962)  
*The Beat Generation* (Smith Compositions) (RCA Victor: PML 10300, 1963)  
*The Riddle* (Columbia: CL 1454, 1959)

## SMITH MULTIPHONICS

The following is a copy of the multiphonic card file prepared by William O. Smith beginning in early 1960, shortly after he had first heard such sonorities performed on the flute (in Berio's *Sequenza*, performed by Severino Gazzelloni). It is the earliest such listing for the clarinet. Mr. Smith has provided the following comment:<sup>2</sup>

I've never been sure how many of the multiphonics I've found were practical for other clarinet players. For some reason the multiphonics over a low E seem very difficult for others to play and I've sometimes wondered if my jazz background (especially throat control in the use of glissandi, etc.) has given me a set of peculiar characteristics (especially in terms of throat flexibility) that are not typical of those clarinetists trained only in the classical tradition. I've found that a new and not-too-hard reed facilitates the production of multiphonics, in general, and those which contain high notes, in particular. The mouthpiece I use has a slightly more open lay than most classical players use, but is quite a bit narrower than I would use if I were playing jazz exclusively.

The organization is chromatic, according to the lowest pitch. A = very easy to produce; B = easy to produce; C = possible to produce; D = difficult to produce.

## ENDNOTES

1. First performed by Smith, with flutist Fritz Kraber, at the Academia Santa Cecilia in Rome in January 1961.
2. Letter to the author, January 1976.

William O.  
Smith

1) Reedy  
2) p-f  
3) C-D



1) Rough, beats  
2) p-f  
3) C

1) Rough, beats  
2) p-f  
3) B

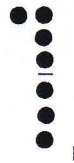
Slurs & gliss. good between  
all of the following notes  
above low E.

1) Rough, beats  
2) p-f  
3) B

1) Rough, beats  
2) p-f  
3) B

1) Somewhat rough  
2) pp-p  
3) D

1) Reedy  
2) p-f  
3) C-D



1) Rough, beats  
2) p-f  
3) B

1) Rough, beats  
2) p-mf  
3) C

1) Rough, beats  
2) p-f  
3) B

1) Rough, beats  
2) p-f  
3) B

1) Rough  
2) p  
3) C

1) Rough  
2) p-mf  
3) C

F

1) Reedy  
2) p-f  
3) C

F#

1) Very rough,  
squawky, beats  
2) f  
3) C

1) Rough  
2) p-f  
3) B

1) Rough, beats  
2) p-mp  
3) C

1) Pure  
2) mp-f  
3) C

1) Rough, squawky,  
beats  
2) mp-f  
3) C

1) Rough, beats  
2) p-f  
3) B

1) Rough  
2) p-f  
3) B

1) Rough  
2) p-mf  
3) B

1) Rough  
2) mf  
3) B

1) Pure, reedy  
2) p-f  
3) B-C

G#

1) Reedy, squawky, beats  
2) p-f  
3) B



1) Reedy, squawky, beats  
2) p-f  
3) A



1) Rough, beats  
2) p-f  
3) B



1) Somewhat rough  
2) p-mp  
3) C



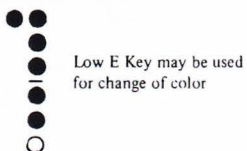
1) Rather pure  
2) pp-mf  
3) B-C



1) Reedy  
2) p-f  
3) A



1) Squawky, beats  
2) pp-f  
3) B



1) Rough  
2) p-f  
3) A



1) Rough  
2) pp-f  
3) B-C



1) Rough  
2) p-f  
3) B



1) Reedy  
2) p-f  
3) B-C



1) Amplified, nasty, rich  
2) p-ff  
3)



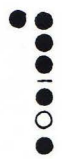
1) Nasty  
2) p-f  
3) C



1) Reedy, rough  
2) p-f  
3) A



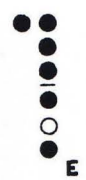
1) Reedy  
2) p-f  
3) A



1) Reedy, amplified  
2) p-f  
3) A



ed 1) Amplified  
2) p-mf  
3) B



1) Rough, beats  
2) p-f  
3) B



1) Reedy  
2) p-mf  
3) B-C



1) Reedy  
2) p-mf  
3) B



1) Reedy  
2) p-f  
3) A



1) Reedy  
2) p-f  
3) A



1) Somewhat rough  
2) p-f  
3) B



1) Reedy  
2) p-mf  
3) B



1) Clear  
2) p-mf  
3) B

E

1) Reedy  
2) p-mf  
3) C

E

1) Reedy  
2) p-f  
3) B

E

1) Beats  
2) p-f  
3) B-C

E

1) Rich, strong beats  
2) p-f  
3) B

E

1) Rich, velvety  
2) p  
3) A

C#  
E

1) Flutelike, rich  
2) p  
3) A

C#  
F

1) Reedy, pure  
2) p-f  
3) A

G#

1) Rough, beats  
2) p-f  
3) B

E

1) Strong beats  
2) p-f  
3) A

G#

1) Somewhat rough  
2) p-f  
3) A

E

1) Rich, velvety  
2) p-mp  
3) A

C#  
E

1) Somewhat rough  
2) mp-f  
3) A



1) Clear  
2) p-mf  
3) A



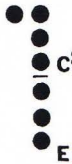
1) Complex, velvety  
2) p-f  
3) B



1) Rough, beats  
2) p-f  
3) B



1) Complex, smooth  
2) p-mp  
3) B

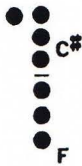


1) Clear  
2) p  
3) B



Nice slur to E $\flat$ ,  
first example p. 101

1) Clear  
2) mp  
3) B-C



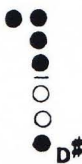
1) Rather pure  
2) p-f  
3) B



1) Clear  
2) p-mf  
3) B



1) Reedy  
2) p  
3) B



1) Rather pure  
2) mp  
3) B



1) Clear  
2) p-mf  
3) A



1) Reedy  
2) p-f  
3) C



1) Clear, velvety  
2) p-mf  
3) B



1) Breathy  
2) pp  
3) B



1) Pure, hollow  
2) p-mf  
3) A



1) Rather clear  
2) p-mf  
3) B



1) Rough, beats  
2) p-f  
3) B



1) Clear  
2) p  
3) B



1) Clear  
2) p-mf  
3) B



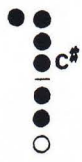
1) Pure  
2) pp-mp  
3) A



1) Rather pure  
2) p-mf  
3) A



1) Rather clear  
2) p-f  
3) B



1) Clear  
2) p  
3) B

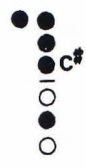




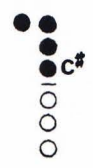
1) Clear, bright  
2) p-mf  
3) B-C



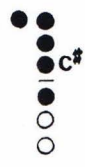
1) Pure  
2) p-mp  
3) B



1) Pure  
2) p  
3) B-C



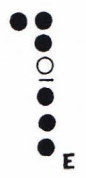
1) Pure  
2) p-mf  
3) B



1) Pure, bright  
2) p-f  
3) B



1) Clear  
2) p  
3) C



1) Fuzzy  
2) pp-mp  
3) B



1) Fuzzy  
2) pp-p  
3) B



1) Pure  
2) p  
3) B



1) Strong beats, coarse  
2) p-f  
3) B



1) Fog horn  
2) p-f  
3) A



1) Fog horn  
2) p-ff  
3) A



For higher D, see next example

1) Somewhat pure  
2) pp-p  
3) B

1) Clear  
2) pp-p  
3) B

R

1) Clear  
2) p-mp  
3) B

1) Somewhat rough  
2) p-mf  
3) C

1) Very windy  
2) pp  
3) B

B

1) Slight beats  
2) p-mp  
3) B-C

1) Beats  
2) p-f  
3) C-D

1) Windy, distant  
2) pp-p  
3) B-D

D#

1) Rather pure  
2) p-mf  
3) B

1) Echo  
2) p-mf  
3) B

1) Rough, beats  
2) p-f  
3) B

1) Clear, bright  
2) p-mf  
3) B-C

1) Foghorn  
2) p-ff  
3) A



1) Fog horn  
2) p-ff  
3) A



Nice slur to A  
by closing hole

1) Pure  
2) p  
3) B



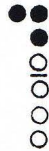
1) Fog horn  
2) p-ff  
3) A



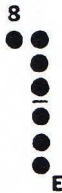
1) Fog horn  
2) p-ff  
3) A



1) Somewhat rough  
2) p-mf  
3) B



1) Full, smooth  
2) p-f  
3) C



1) Rather pure  
2) p-mf  
3) B



1) Pure  
2) p  
3) B



1) Clear  
2) p-mf  
3) A



1) Pure  
2) p-f  
3) B



1) Clear (fog horn)  
2) p-mf  
3) A



1) Veiled  
2) p-mf  
3) A

1) Fuzzy  
2) pp-mp  
3) B

1) Fuzzy  
2) p-mp  
3) B

1) Flutelike, windy  
2) p  
3) B

1) Flutelike, rich  
2) p  
3) A

1) Reedy  
2) p-ff  
3) B

Like muted version  
of previous sonority

1) Strong beats  
2) p-f  
3) B

1) Clear (slight beats  
occur when loud)  
2) p-f  
3) B

1) Beats (stronger when  
louder)  
2) p-mf  
3) B

1) Flutelike, beats  
2) p-mp  
3) A

1) Flutelike  
2) p  
3) A

1) Flutelike  
2) p-f  
3) A

1) Flutelike  
2) p-f  
3) A



1) Pure  
2) p  
3) B



1) Rich  
2) p-mp  
3) A



1) Clear  
2) p  
3) B



1) Clear  
2) p-f  
3) B



1) Somewhat rough  
2) p-mp  
3) C



1) Beats  
2) p-mp  
3) B

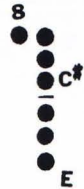


1) Clear  
2) p-mf  
3) B



1) Rich  
2) p-mf  
3) B

Louder than mf the low D $\sharp$  disappears



1) Beats when loud  
2) p-f  
3) B



1) Windy  
2) p-mf  
3) B



1) Pure  
2) pp-mp  
3) B





1) Beats  
2) p-f  
3) B

1) Pure  
2) p-mp  
3) B

1) Pure  
2) p-mp  
3) B

1) Flutelike  
2) p-f  
3) A

1) Pure  
2) p  
3) B

1) Flutelike  
2) p-f  
3) A

1) Pure  
2) p-mp  
3) C

1) Flutelike (rough)  
2) p-mf  
3) A

1) Clear  
2) p-f  
3) A

1) Flutelike  
2) p-mf  
3) A

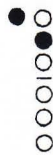
1) Flutelike, complex  
2) p-f  
3) A

1) Pure  
2) p-mf  
3) B

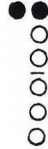
1) Pure (slight beats)  
2) p-mp  
3) B



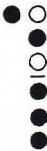
1) Pure  
2) p-mp  
3) B



1) Somewhat shrill  
2) mp  
3) C



1) Rather pure  
2) mf  
3) C



1) Velvety  
2) pp  
3) B-C



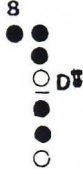
1) Velvety  
2) pp-f  
3) A+



1) Velvety  
2) p  
3) A



1) Velvety  
2) pp-f  
3) A



1) Beats  
2) p-mp  
3) B



1) Flutelike  
2) pp-p  
3) A



1) Beats  
2) p-f  
3) A



1) Airy  
2) p-f  
3) B





1) Pure  
2) p-mf  
3) B

8

G#

1) Beats  
2) p-f  
3) B

8

G#

1) Windy  
2) p-f  
3) B

8

G#

1) Pure  
2) p-mp  
3) A

8

A

1) Clear  
2) p-mf  
3) B

8

A

1) Pure  
2) p  
3) C

8

A

1) Pure  
2) p-f  
3) A

8

F#

1) Somewhat rough  
2) p-mf  
3) B

8

F#

1) Velvety  
2) p-mf  
3) A

8

F#

1) Pure  
2) p-mp  
3) A

8

E

1) Pure  
2) p-mp  
3) A

8

E

1) Flutelike, windy  
2) p-mp  
3) A

8

E

1) Pure  
2) p-mp  
3) A

1) Pure  
2) p-mp  
3) B

1) Strong beats  
2) p-f  
3) A

1) Pure  
2) p-f  
3) C

1) Beats  
2) p-f  
3) A

1) Flutelike (beats)  
2) p-f  
3) B

1) Flutelike  
2) p-mf  
3) A

1) Flutelike  
2) p-mf  
3) A

1) Flutelike  
2) p-f  
3) A

1) Pure  
2) p-mp  
3) B

1) Pure  
2) p-mf  
3) B

1) Pure  
2) p-f  
3) B

1) Rather pure  
2) p  
3) C



1) Pure  
2) p-mf  
3) B



1) Clear  
2) p-mp  
3) B



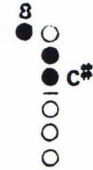
1) Clear  
2) p  
3) B



1) Bright  
2) p-mf  
3) B



1) Clear  
2) p-mp  
3) A



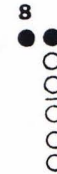
1) Rather pure  
2) p-f  
3) B



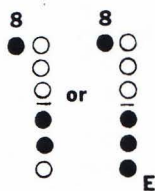
1) Breathy  
2) pp-p  
3) B



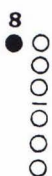
1) Flutelike, windy  
2) p-mp  
3) A



1) Velvety  
2) p-mf  
3) A



1) Flutelike, windy  
2) p-mp  
3) A



1) Strong beats  
2) p-f  
3) A



1) Beats  
2) p-f  
3) B



1) Breathy  
2) p  
3) B



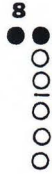
1) Breathy  
2) p-f  
3) B



1) Flutelike  
2) p-f  
3) A



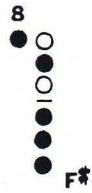
1) Pure  
2) p-f  
3) B



1) Clear  
2) p-mf  
3) B



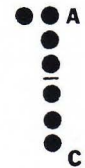
1) Clear  
2) p-mf  
3) B



1) Clear  
2) p-mf  
3) B



[sic]



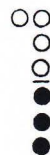
1) Clear  
2) p  
3) B



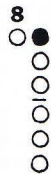
1) Breathy  
2) p-mf  
3) C



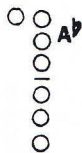
1) Clear  
2) p-mp  
3) C-B



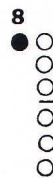
1) Flutelike  
2) p-mp  
3) A



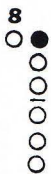
1) Beats  
2) p-f  
3) B-C



1) Pure  
2) p-mp  
3) B



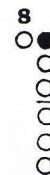
1) Pure  
2) p  
3) B



1) Bright  
2) p  
3) B



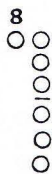
1) Bright  
2) p-f  
3) B-C



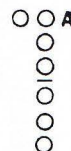
1) Bright  
2) p-mf  
3) B



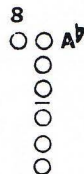
1) Flutelike  
2) p-mp  
3) A



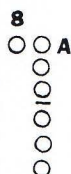
1) Bright  
2) mp  
3) B-C



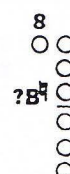
1) Flutelike  
2) p-mp  
3) A



1) Bright  
2) mf  
3) C



1) Clear  
2) p  
3) B-C



1) Rich, full  
2) p-ff  
3) B



1) Pure  
2) p-f  
3) B

1) Clear  
2) p-mf  
3) B

1) Clear  
2) p-mf  
3) C

1) Rich  
2) p-f  
3) C

1) Pure  
2) p  
3) B



1) Clear  
2) p  
3) B

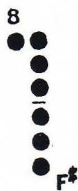


1) Clear  
2) p-mp  
3) B



1) Pure  
2) p-mp  
3) C

1) Clear  
2) mp  
3) C



1) Clear  
2) p  
3) B



1) Pure  
2) p  
3) C

1) Clear  
2) p  
3) B

8

G#

1) Clear  
2) p  
3) B

8

G#

1) Pure  
2) p  
3) B

8

G#

1) Clear  
2) mp  
3) B

8

G#

1) Clear  
2) p  
3) B

8

G#

1) Clear  
2) p  
3) B

8

G#

1) Clear  
2) p  
3) B-C

8

G#

1) Clear  
2) p  
3) C

8

C#

1) Silvery  
2) pp-p  
3) B

8

G#

1) Clear  
2) p  
3) B

8

G#

## Eric Mandat's Quarter Tone Fingerings

The chart which follows contains the fingerings that Eric Mandat uses in his microtonal compositions, works which require considerable finger dexterity and practice. It should be emphasized that instruments are not designed with microtones in mind, and that even with instruments by the same manufacturer, no two clarinet setups are exactly alike. Players commonly modify fingerings to suit individual requirements. Note that there are a number of situations where, using the standard thirteen-key system popular in the United States, fingerings are not available. Color changes between the various fingerings should be considered idiomatic.

The chart displays three staves of musical notation, each containing seven notes with handwritten fingerings. The notes and their fingerings are as follows:

- Staff 1: E (1-2-3-4), F# (1-2-3-4), F (1-2-3-4), G# (1-2-3-4), G (1-2-3-4), A (1-2-3-4)
- Staff 2: B# (1-2-3-4), B (1-2-3-4), C# (1-2-3-4), C (1-2-3-4), D (1-2-3-4), D# (1-2-3-4), E (1-2-3-4)
- Staff 3: F# (1-2-3-4), F (1-2-3-4), G# (1-2-3-4), G (1-2-3-4), A (1-2-3-4), B# (1-2-3-4), B (1-2-3-4)



Handwritten musical notation for three staves. The first staff contains notes: #0, #0, d0, #0, d0, #0, d0. The second staff contains notes: #0, #0, d0, #0, d0, #0, #0. The third staff is labeled 'Ova' and contains notes: do, #0, d0, #0, d0, #0. Each note has a vertical line with dots below it, and some have additional markings like 'R', 'F#', 'A', 'G#', 'F#', 'A'.

1.) = side keys to be played by r.h. thumb

## E-flat Contrabass Addenda

This section provides altissimo fingering suggestions, lip-bend possibilities, and selected multiphonics for the E-flat contrabass clarinet. The filled-in notes on the altissimo chart indicate the extent that the pitch given can be bent with the embouchure alone. Low-register lip-bend possibilities are provided following the altissimo fingerings. The multiphonics are listed according to the categories presented in Chapter 3. The reader is also referred to Terje Lerstad's altissimo fingering chart in *The Clarinet* vol. 18, no. 3 (May-June 1991), 30, which extends the range to high F<sup>\*\*\*\*</sup>, high G<sup>\*\*\*\*</sup> for the B $\flat$  contrabass.

Low-register lip bends:

$\frac{1}{2}$  tone      none       $\frac{1}{2}$  tone

Category 1:

Category 2:

Category 3:

Category 4:

Category 5:

Category 6:

Category 7:

## Altississimo Fingerings

This appendix contains fingerings for the extreme high register of the soprano clarinet. However, the inclusion of this material should not be misinterpreted as a carte blanche endorsement: the sound is thin, the production painful (to the lower lip), the attainment insecure and sometimes embarrassing, and the intonation shaky.

It should also be noted that precise fingerings are not of primary importance. The partials of the overtone series are so close together that a number of fingering combinations will work, and most players have their own favorites. The major problem is to find a reed that will produce these pitches before the pressure of the lower lip causes it to seal the end of the mouthpiece, resulting in no sound at all. Some mouthpieces produce this register better than others, and teeth on reed is, of course, another possibility when the passage allows sufficient time to make the embouchure change. High notes generally require more embouchure pressure at a point farther down on the reed. Reeds that work well in this area often do so at the sacrifice of a full response in the lower registers. Elsa Ludewig-Verdehr's "Altissimo Register Fingerings for the Clarinet" in *NACWPI Journal* 83 (Winter 1982-83), 4-16, is an important source for additional fingerings.

The diagram shows five notes on a soprano clarinet staff, each with a fingering chart below it. The notes are marked with a clef and a sharp sign above the staff, and a dashed line above the staff labeled '8<sup>v</sup>'. The notes are: F#4, G4, A4, B4, and C5. The fingering charts use circles to represent finger positions: an open circle for the thumb (R) and filled circles for fingers 1-5. The notes are: F#4 (R, 1, 2, 3, 4, 5), G4 (R, 1, 2, 3, 4, 5), A4 (R, 1, 2, 3, 4, 5), B4 (R, 1, 2, 3, 4, 5), and C5 (R, 1, 2, 3, 4, 5). The notes are: F#4, G4, A4, B4, and C5.

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## Difference Tones

Difference or “under” tones appear in certain registers when two or more sustained pitches are played together at moderate to loud dynamic levels. The following observations have been made using two B-flat clarinets. Difference tones are hardly detectable in the range beneath G-sharp<sup>1</sup>. Intervals in the range from G-sharp<sup>1</sup> to D<sup>2</sup>, however, result in a rather soft effect; in the range from E<sup>2</sup> to A<sup>2</sup>, slightly louder; and so forth, as the diagram indicates, through high G<sup>3</sup>. Within the areas delineated, the intervals from the minor third to the major sixth above seem to produce the strongest difference tones; the minor second results in beats; and with the major second and seventh the result, although present, is decidedly softer. Precise pitch can, of course, be determined by subtracting the frequency values of the lower pitches from the higher. Summation tones are not as prominent.



## *Matrix for Clarinetist*—Donald Scavarda

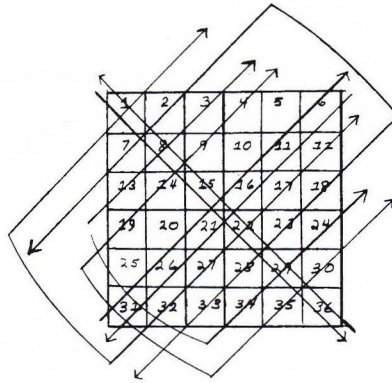
At approximately the same time that William O. Smith was beginning to develop fingerings for multiple sonorities in Rome, Donald Scavarda, working independently as a member of the ONCE group in Ann Arbor, Michigan, was also beginning to explore these types of sounds. *Matrix for Clarinetist* (1962) was worked out with the help of clarinetist John Morgan and, with Smith's work, is among the earliest examples to explore new sounds. It is reproduced here in full with the permission of the composer. The work is also printed as a "wall hanging." The performance instructions are as follows:

*Matrix for Clarinetist* is intended for performance with a clarinet in "A." The minimum requirement constituting a performance is the inclusion of all 36 squares at least once, though they need not appear in immediate succession, since repetitions are possible.

The performer may begin anywhere in the Matrix and read in rows, columns, or diagonals (hereafter these will be synonymous with "module 6" which is the maximum number of squares in any row, column, or diagonal), in any order of each of these, or alternate between rows, columns, and diagonals. It is also possible to permute the order within a row, column, or diagonal, providing the module 6 is always completed, in a straight line and in one direction only. (Rows may be read left to right or reverse and columns top to bottom or reverse.) See chart below for reading diagonals. Any row may be added with any other row or rows, and any column with any other column, or any row with any column, the sum resulting in a new order of 6; for example, adding the two top rows results in the following sequence: 1,7, (8); 2, 8, (10); 3,9, (12); 4, 10, (14); etc. The numbers in parentheses are those resulting from addition of the rows.

A row, column, or diagonal (or permutations within them) may also be multiplied by any square lying outside that particular module, again resulting in a new order of 6; for example, multiplying the second row from the top by square no. 13, produces the following sequence: 13, 7, (19); 13, 8, (32); 13, 9, (9); etc. Similarly, it is possible to multiply a row, column, or diagonal by any other row, column, or diagonal. Whenever a number is arrived at, through addition or multiplication, which is larger than the field 36, then 36 must be subtracted from that number until one within the field is reached.

The performer is free to employ as many and as varied of the available operations as he chooses, since the total duration of *Matrix*, beyond the simple requirement that all squares be included, is to be determined by the performer.



Special fingerings through the assistance of John Morgan.

### SYMBOLOLOGY

↕↕ mean overtone and undertone clusters, the diamond-shaped head indicating the note to be fingered. The exact boundaries of these clusters are indeterminate and may vary slightly from one performance to another. The special fingerings required for producing these clusters are given in the score.

△ indicates a fingered harmonic, the actual pitch or pitches to be produced being notated in parenthesis.

S indicates a silence. The durations of all written silences are to be determined by the performer, who must make a distinction between these silences and those which occur from mechanical and technical preparations for succeeding sounds. In the event that two written silences coincide, it is to be treated as one.

“Full Breath” is defined as the greatest amount that can be taken in by the performer without any unnatural or discernible preparation. It also implies that no unspecified break is to occur in the sound being produced (i.e. no extra breaths). There will be specified silences between tones in a square but all must be controlled within the duration of a full breath. Full breath represents the maximum duration for any square; that is, in *no* square is more than 1 full breath to be taken. ½ breath and ¼ breath are relative portions thereof.

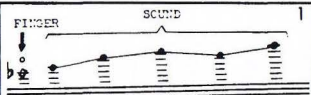
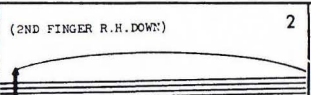
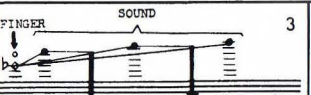
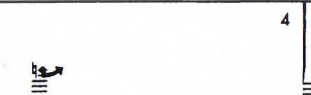
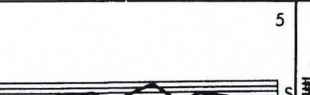

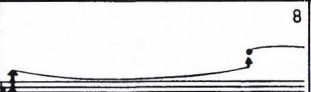
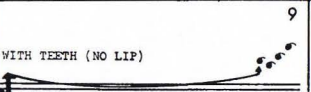
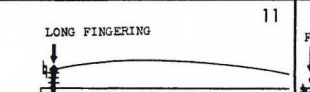
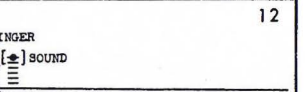
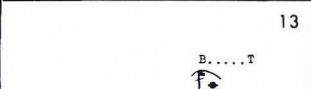
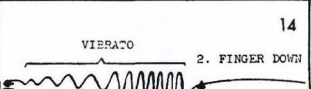

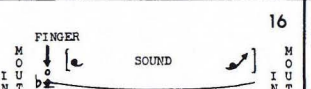
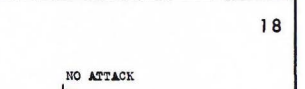
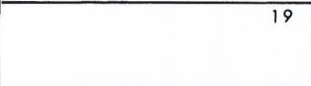
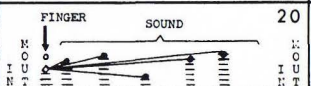
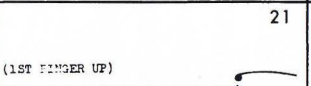
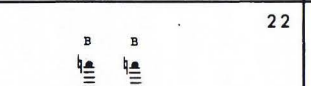

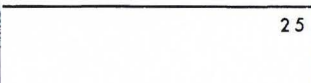
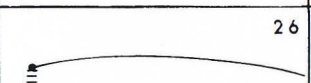
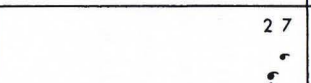
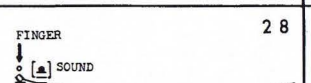
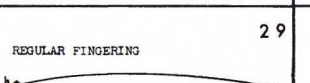
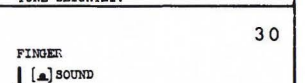
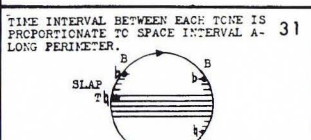
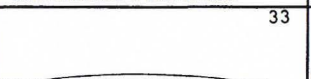
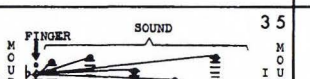
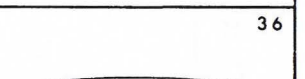
The 2 extreme horizontal lines of the staff indicate the boundaries of amplitude. That is, from the bottom line to the top line represents a continuum from “Barely Audible” to “Loud.”

The symbols < > are used in reference to duration and mean literally “Not Greater Than \_\_\_ Nor Less than \_\_\_.”

*Invert Mouthpiece* simply means turning the mouthpiece upside down.

B means breath (attack or release).

T means tongue (attack or release).

 <p>APPROXIMATE THE PATTERN OF DRAWING. PERFORMER DETERMINES AMPLITUDE AND DURATION OF EACH HARMONIC, AND WHETHER EQUAL OR UNEQUAL. TOTAL DURATION: 1 FULL BREATH.</p>	<p>(2ND FINGER R.H. DOWN)</p>  <p>OBTAIN UNDERTONE (e<sup>1</sup>) AND SUSTAIN THROUGHOUT, GRADUALLY ADDING FINGERS MARKED WITH SLASH. DURATION: 1 FULL BREATH.</p>	 <p>PRODUCE AGGREGATE OF HARMONICS AND UNDERTONE CLUSTERS IN ANY ORDER. PERFORMER DETERMINES AMPLITUDE AND DURATION OF EACH. REPETITIONS ARE PERMISSIBLE. TOTAL DURATION: 1 FULL BREATH.</p>	 <p>SHEAR.</p> <p>DURATION: &lt;0:20&gt;0:10</p>	 <p>PERFORMER DETERMINES AMPLITUDE. DURATION: 1 FULL BREATH.</p>	
 <p>SHEAR SLOWLY.</p>	 <p>MAINTAIN SAME FINGERING THROUGHOUT. AT CULMINATION OF OVERTONE CLUSTER PRODUCE SINGLE TONE OF INDETERMINATE PITCH AND SUSTAIN. TOTAL DURATION: 1 FULL BREATH.</p>	<p>WITH TEETH (NO LIP)</p>  <p>MAINTAIN SAME FINGERING THROUGHOUT. AT CULMINATION OF OVERTONE CLUSTER PRODUCE SEVERAL e (SINGLE TONES OF INDETERMINATE PITCH AND DURATION WHICH OCCUR NATURALLY) AS FAST AS POSSIBLE. TOTAL DURATION: 1 FULL BREATH.</p>	<p>BLOW SPIT THROUGH REED</p> <p>DURATION: 1 FULL BREATH</p>	<p>LONG FINGERING</p>  <p>GRADUALLY INCREASE AMPLITUDE. DURATION: 1/4 TO 1/2 BREATH.</p>	 <p>DURATION: AS LONG AS POSSIBLE WITHOUT BREATH INTERRUPTION.</p>
 <p>B...T</p>	<p>VIBRATO</p>  <p>2. FINGER DOWN</p> <p>MAKE TRANSITION FROM VIBRATO TO UNDERTONE CLUSTER AS SMOOTH AS POSSIBLE. DURATION: 1 FULL BREATH.</p>	<p>T, B</p> 	 <p>SOUND VERY HIGH HARMONIC AS LOUDLY AS POSSIBLE, GLISSANDO AT RELEASE. DURATION: 1 FULL BREATH.</p>	<p>BLOW INTO INSTRUMENT PRODUCING BREATH NOISE AT MAXIMUM AMPLITUDE. OPEN TONE SOUNDS RANDOMLY. DURATION: 1 FULL BREATH.</p>	<p>NO ATTACK</p>  <p>DURATION: &lt;0:04&gt;0:02</p>
 <p>SLIDE FINGERS RANDOMLY AROUND NOTES. PERFORMER DETERMINES AMPLITUDE AND DURATION.</p>	 <p>PRODUCE AGGREGATE OF HARMONICS IN ANY ORDER. PERFORMER DETERMINES AMPLITUDE AND DURATION (EQUAL OR UNEQUAL) OF EACH. REPETITIONS PERMISSIBLE.</p>	<p>(1ST FINGER UP)</p>  <p>MAINTAIN SAME FINGERING THROUGHOUT. AT CULMINATION OF OVERTONE CLUSTER PRODUCE SINGLE TONE OF INDETERMINATE PITCH AND SUSTAIN. TOTAL DURATION: 1 FULL BREATH.</p>	<p>B B</p>  <p>DURATION: 1/4 BREATH OR LESS</p>	<p>SLAP KEYS</p>  <p>MAXIMUM AMPLITUDE. DURATION: 1/2 BREATH. GRADUALLY SLAP KEYS REPEATEDLY TO FLATTEN TONE SLIGHTLY.</p>	
 <p>SHEAR</p>	 <p>DURATION: 1/2 TO 1 FULL BREATH.</p>	 <p>MAINTAIN SAME FINGERING THROUGHOUT. AT CULMINATION OF OVERTONE CLUSTER PRODUCE 2 e (SINGLE TONES OF INDETERMINATE PITCH AND DURATION WHICH OCCUR NATURALLY) AT ANY SPEED. TOTAL DURATION: 1 FULL BREATH.</p>	 <p>AMPLITUDE: AS SOFT AS POSSIBLE. DURATION: AS LONG AS POSSIBLE WITHOUT BREATH INTERRUPTION.</p>	<p>REGULAR FINGERING</p>  <p>PERFORMER MAY VARY AMPLITUDE FREELY. DURATION: 1 FULL BREATH.</p>	 <p>DURATION: AS LONG AS POSSIBLE WITHOUT BREATH INTERRUPTION.</p>
<p>TIME INTERVAL BETWEEN EACH TONE IS PROPORTIONATE TO SPACE INTERVAL ALONG PERIMETER.</p>  <p>BEGIN ANYWHERE ON CIRCLE. FOLLOW EITHER DIRECTION. AMPLITUDE (LOUD TO SOFT) AND DURATION (SHORT TO VERY SHORT) ARE RELATIVE TO NOTE SIZE.</p>	<p>BREATH NOISE GRADUALLY DIMINISHES (LOUD TO BARELY AUDIBLE) ALLOWING FINGERED TONE TO EMERGE. DURATION: 1 FULL BREATH.</p>	<p>FINGER (1. FINGER UP)</p>  <p>PERFORMER DETERMINES AMPLITUDE AND DURATION.</p>	<p>DURATION: &lt;0:10&gt;0:12</p>	 <p>PRODUCE AGGREGATE OF HARMONICS (EACH FOLLOWED BY SHORT SILENCE) IN ANY ORDER. THE DRAWING SUGGESTS AMPLITUDE PATTERN AND DURATIONS. REPETITIONS PERMISSIBLE. TOTAL DURATION: 1 FULL BREATH.</p>	 <p>FINGER (1. FINGER UP)</p> <p>DURATION: 1/2 TO 1 FULL BREATH.</p>



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 Music Bibliography I

Music Bibliography I is a somewhat updated version of the bibliography in the 1977 edition of *New Directions for Clarinet*. An attempt has been made not to duplicate the repertory in the "International Update" (Music Bibliography II) or Appendix A (William O. Smith)—although there is an occasional repetition. Unlike the first edition, addresses for manuscript compositions (ms) are not provided. Such sources as *Dictionary of International Biography*, *Who's Who in Music*, ACA, ASCAP, BMI directories, and the *Directory of Music Faculties in Colleges and Universities, U.S. and Canada* are recommended. Although extensive, the bibliography should be considered representative. F. Gerard Errante's *Contemporary Clarinet Repertoire for Clarinet & Electronics* is an extensive annotated listing of compositions using electronics, and Wiel Rutten's *Repertory Bass Clarinet* is an extensive listing which includes the standard repertory as well. A comprehensive listing under individual composer is available through the computerized OCLC library cataloguing system.

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 Rabe, Folke. *Impromptu for 5 Players*: cl/bcl, trb, vc, pf, perc (1962, Hansen).  
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 ——— *Trio*: vn, cl, cb (1967, Seesaw).  
 ——— *Trio*: bsn, bcl, pf (1968, Okra).  
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 Tautenhahn, Gunther. *Emotions of a Note, No. 1*: cl, tom-toms, vla (1973, Seesaw).  
 ——— *Woodwind Quintet* (1971–72, Seesaw).  
 Turok, Paul. *Picture No. 99*: ww quint (1974, Seesaw).  
 Veyvoda, Gerald. *Into the Artifice of Eternity*: ww quint, tape (1971, Seesaw).  
 ——— *Through the Looking Glass*: mezzo sop voice, ww quint, tape (1972, Seesaw).  
 Vieru, Anatol. *Crible d'Eratosthene*: cl, vn, vla, vc, pf (1969, Salabert).  
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 ——— *Fragments from Sappho*: sop voice, fl, cl, pf (1962, 1965, E. B. Marks).  
 Westergaard, Peter. *Quartet*: vn, vib, cl, vc, (1961, Ars Viva).  
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## Music Bibliography II—International Update

It is now possible to call up an extensive bibliography of recent works for clarinet using online systems such as the computerized OCLC (Online Computer Library Center). However, the number of entries would be overwhelming. The decision, therefore, has been made to provide, as part of the music bibliography, a section called "International Update," listing, from a variety of perspectives, the repertory that players who have to some degree specialized in new music are performing. What follows is the result of responses from such clarinetists. The format is purposely not standardized, with materials including, variously, current performance repertory, recorded repertory, commissions, miscellaneous "recommendations," own compositions, and combinations of the above. When it was mentioned, information regarding availability, including recordings, is also provided. The matter of whether to include composers' addresses for manuscript (ms) compositions has also been left to individual discretion. Addresses for "lesser-known" sources, those not provided in *Music in Print* or Schwann's *Opus*, are provided at the conclusion. For the most part, the listings exclude works from what may be considered the "standard" repertory. Special features include the complete commissioned works for bass clarinet of Josef Horák and the complete repertory for clarinet of Karlheinz Stockhausen.

VIRGINIA ANDERSON (U.S.A.) studied clarinet with Phillip Rehfeldt at the University of Redlands. She has specialized in the E $\flat$  clarinet, "the Ayatollah of instruments," one of only a few to do so. A former member of Household Trios and the Hartzell Hilton Band, and a member of the Anything Goes Orchestra, she is currently inflicting clarinet lessons on schoolchildren while completing her doctoral thesis on British experimental music for Royal Holloway and Bedford New College, Surrey, England. A number of recent works have been created under her aegis.

### *E♭ Clarinet*

- Barney Childs, *Instant Winners*: E♭cl solo (ms, 1986).  
——— *Leftovers*: 2 E♭cls, 2 vlas, pf, vib (ms, 1988).  
Christopher Hobbs, *Another Part of the Forest*: 2 E♭cl, 2 vlas, pf, vib (ms, 1987).  
——— *Fanfares*: 2 E♭cls (ms, 1987).  
——— *Swiftly to Virginia*: E♭cl, pf (ms, 1981).  
——— *A Turn Around the Old Gothic Swing*: 2 E♭cls, 2 vlas, pf, vib (ms, 1987).  
Angelo Miranda, *For Days of Far-Cast Suns*: E♭cl, pf, perc (ms, 1981).  
Michael Parsons, *Arctic Instrumental Music*: 2 E♭cls, 2 vlas, pf, vib (ms, 1988).  
Sean Roarke, *Purl One*: E♭cl, B♭cl, 2 vlas, pf, vib (ms, 1988).  
Hugn Shrapnel, arr. Michael Newman, *Gatwick*: E♭cl, Acl, 2 vlas, pf, gtr, vib (ms, 1988).  
John White, *Not WUT Again? No Way, Shitface!*: 2 E♭cls, 2 vlas, pf, vib (ms, 1988).  
——— *WUT Again?*: 2 E♭cls, 2 vlas, pf, vib (ms, 1987).

### *Other Clarinets*

- Barney Childs, *Real Music*: 2 cls (ms, 1982).  
——— *Sleep, and then going on*: Acl, perc (Forward Music, 1988).  
Jim Fox, *Sans San Diego*: cl, pf (ms, 1980).  
Dave Hatt, *New and Different Ways of Driving*: bcl, pf (ms, 1980).

BURTON BEERMAN (U.S.A.) is professor of Music and History at Bowling Green State University and director of the university's Electronic Music and Recording Studios. As a composer he has moved in the worlds of both acoustic and computer music and is particularly known for integrating interactive video, electric clarinet, and dance. Performances of his music have taken place in such international arenas as Paris, London, Brussels, Tokyo, Mexico City, New York, Los Angeles, Atlanta, Houston, and Chicago. He is a graduate of Florida State University and the University of Michigan, from which he holds a D.M.A. in composition. He is also a concert clarinetist, working presently with choreographer/dancer Celesta Haraszti with the Electric Arts Duo. A number of his clarinet works are listed as follows.

### *Clarinet and Dancer (Electric Arts Duo)*

- Electric Colors of Spring*: 2 elec cls, dancer (1987, ACA).  
*Evening Songs*: acoustic cl (1990, MillCreek, Twenty-First Century Anthology).  
*Fragments*: WX7 wind controller (1988, ACA).  
*Jassing*: elec cl, computer, dancer (1987, ACA).  
*Masks*: elec cl (1991, ACA).+  
*Moondance*: elec cl and computer-generated tape (1991, ACA).+  
*Night Dances*: solo acoustic cl, solo dancer, and orch (1985, ACA).  
*Shades of*: elec cl, dancer (1988, ACA).  
*Suite*: elec cl and computer-generated tape (1987, ACA).  
*Wind Whispers, Sounds, and Shouts*: elec cl and computer-generated tape (1989, ACA).+

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### *Other Works Involving Clarinet*

- California Moods*: alto sax, cl, pf, dancer (1983, ACA).  
*Chamber Music I*: cl, vn, vc (1983, ACA).  
*Chamber Music II*: bcl, perc (1983, ACA).  
*Colors*: cl, hrp, pf, perc, vn, cb (1968, ACA).  
*Consort and Song*: cl, high voice, pf, perc, vc (1969, ACA).  
*Dance Figures*: cl, pf, tape (1985, ACA).

*Details*: cl, hrp, vn, vla (1968, ACA).  
*Ensemble*: ww quint (1975, ACA).  
*Ensemble II*: solo cl, band (1967, ACA).  
*Moments, 1981*: 2 fls, 2 cls, pf (1981, ACA).  
*Night Calls*: acoustic cl, dancer, and analog tape (1982, ACA).  
*Points*: fl, cl, hrn, perc, vn, vla, cb (1969, ACA).  
*Polygraph I*: acoustic cl, analog tape (1972, ACA).  
*Polygraph III*: acoustic cl, analog tape (1975, ACA).  
*Reflections*: cl, vc, synths, laser beam (1975, ACA).  
*Secret Gardens*: alto sax, ww quint, perc, analog tape (1982, ACA).  
*Sensations*: acoustic cl, analog tape (1969, Media Press).\*  
*Shadows and Figurines*: fl, cl, cb (1977, ACA).  
*Shadows Cast*: cl, perc (1979, ACA).  
*Three By 3*: fl, 2 cls; cl, ob, bsn; alto sax, 2 trbs (1987, ACA).  
*Wind Bouquet*: multiple cl quartets (1987, ACA).

+ Recorded, Burton Beerman, Capstone Records, CD CDS 8607.

\* Recorded, Phillip Rehfeldt, Advance Recordings, FGC15/17S.

EDUARD BRUNNER (Germany) began his musical education in his birthplace, Basel, Switzerland, before studying with Louis Cahuzac at the Paris Conservatoire. Upon graduation, he became principal clarinetist of the Bavarian Radio Symphony Orchestra in Munich. Concert engagements have taken him to all parts of the world, both as soloist and as a member of chamber ensembles, with such colleagues as Gidon Kremer and Alfred Brendel. Among other activities, he has repeatedly been guest artist at music festivals in Lockenhaus, Vienna, Moscow, Warsaw, and Schleswig-Holstein. He has recorded well over a hundred works from the standard as well as the contemporary repertory under Deutsche Grammophon, Phillips, Tudor, Schwann, Orfeo, and other labels. As a major performer of contemporary music, he has been the catalyst for many prominent composers and is responsible for a number of commissions and premieres, including the following.

#### *Commissions and Premieres*

Dieter Acker, *Eichendorf Sonata*: cl, pf (1985, Bote & Bock).+\*  
 ——— *Quintet*: cl, str quart (1973, ms).+  
 Conrad Beck, *Concerto*: cl, orch (1968, Schott).+  
 Frank Michael Beyer, *Quintet*: cl, str quart (1991, Bote & Bock).+\*  
 Augustin Bloch, *Quintet*: cl, str quart (1985, Sonoton).+\*  
 Edison Denisov, *Concerto*: cl, orch (1989, Sikorski).+\* –  
 ——— *Quintet*: cl, str quart (1987).+\*  
 Peter Escher, *Pièce*: solo cl (1959, Kneusslin).+\*  
 Jean Francaix, *Quintet*: cl, str quart (1977, Schott).+\*  
 ——— *Tema con variation*: cl, str quart (1978, Schott).+ – –  
 Sofia Gubaidulina, *Octet*: cl, bsn, hn, str quint, sop voice (1985, Sikorski).+ – – –  
 Gia Kantcheli, *Ein Leben ohne Weihnachten, "Mittagsgebete"*: cl, orch (1991, Sikorski).+  
 Rudolf Kelterborn, *Four Pieces*: cl, pf (1970, Bote & Bock).+  
 ——— *Musik*: cl, str (1966, Bärenreiter).+  
 Peter Kiesewetter, *Solostück* (ms).  
 Helmut Lachenmann, *Accanto*: cl, orch (1980, Breitkof & Härtel).+\* – – – –  
 ——— *Allegro sostenuto*: cl, vc, pf (1989, Breitkof & Härtel).+\* –  
 ——— *Interieur III "dal niente: solo cl"* (1970, Breitkof & Härtel).+\*  
 Wassily Lobanov, *Beschwörung, Op. 52*: cl, pf (1989, Sikorski).+\*  
 ——— *Sonata, Op. 45*: cl, pf (1988, Sikorski).+\* – – – – –  
 Witold Lutoslawski, *Double Concerto*: cl, hrp, orch (1980, Hansen). – – – – –

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D. Manssurian, *Double Concerto*: cl, vc, orch (1992, Sikorski).+  
 Roland Leistner Mayer, *Quintet*: cl, str quart (1981, ms).+  
 Krzysztof Meyer, *Quintet*: cl, str quart (1986, Sonoton).+\*-----  
 Rudolf Moser, *Concerto*: cl, orch (1959, ms).+\*-----  
 Wolfgang Rihm, *Doppelgesang*: vc, cl, chamber orch (1983, Breitkopf & Härtel).+  
 Anton Ruppert, *Solini*: cbcl (1974, ms).+  
 ——— *Susammenhang und Laune*: solo cl (1976, ms).+  
 Hans Stadlmair, *Quintet*: cl, str quart (1989, ms).+\*  
 Isang Yun, *Concerto*: cl, orch (1981, Bote & Bock).+\*-----  
 ——— *Piri*: solo cl (1976, Bote & Bock).+  
 ——— *Quintet*: cl, str quart (1984, Bote & Bock).+  
 ——— *Trio*: cl, vc, hrp (1989, Bote & Bock).+\*-

+Premiere.

\* Commission.

— Recorded: Colegno.

— — Recorded: Calig.

— — — Recorded: DGG.

— — — — Recorded: Wergo.

— — — — — Recorded: Tudor.

— — — — — — Recorded: Schwann.

— — — — — — — Recorded: Sonoton.

— — — — — — — — Recorded: Schweiz. Tonkünstler.

— — — — — — — — — Recorded: Camerata.

#### Other Recordings

L. Berio, *Concerto After a Brahms Sonata; Concertino; Sequenza IX; Lied*: Schwann.

E. Hanisch, *Sonata*; N. Linke, *Fantasia and Zortzico*; W. Hildemann, *Sonata*: Colosseum.

R. Kelterborn, *Konzertmusik*: Bärenreiter.

D. Mericanto, *Double Concerto*: Mericante Society.

M. Mihalovici, *Musique Nocturne*; H. Tomasi, *Concerto*; J. Rivier, *Concerto*; J. Francaix, *Tema con variazioni*: Schwann.

ROSLYN DUNLOP (Australia) studied at the Sydney Conservatorium of Music and graduated with a Bachelor of Music in 1982; her principal teacher was Gabor Reeves. In 1983 she was awarded a scholarship from Michigan State University enabling her to enroll in post-graduate studies and study clarinet with Elsa Ludewig-Verdehr. She also participated in summer schools and masterclasses in the U.S.A. and Europe. Since her return to Australia in 1985, she has presented master classes, lectures, and recitals in universities and conservatoriums in Australia, New Zealand, the U.S.A., and Europe. She is one of the founding members of the ensemble Symeron (flute, clarinet, piano), which specializes in new music. She records regularly for ABC-FM and -AM and 2MBS-FM radio and is currently preparing a CD of recent works for clarinet(s). Addresses for works in manuscript can be obtained by writing c/o the Sydney Conservatorium of Music, where she teaches clarinet.

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#### Solos

Luciano Berio, *Lied* (1983, Universal).

——— *Sequenza IXa* (1980, Universal).

Brenton Broadstock, *Aureole II*: bcl (1983, AMC).+

Pierre Boulez, *Domaines* (1968, Universal).

Chris Dench, *Time*: bcl (1981, UMP).+  
 James Dillon, *Crossing/Over* (1978, Peters).+  
 Yvonne Desportes, *La naissance d'un papillon* (1977, Billaudot).  
 Franco Donatoni, *Clair* (1980, Ricordi).  
 ——— *Soft*: bcl (1989, Ricordi).  
 Robert Douglas, *Azimuth* (1983, ms).  
 Brian Ferneyhough, *Time and Motion Study*: bcl (1971–77, Peters).+  
 Michael Finnissy, *Marrngu*: Ebcl (1982, ms).  
 ——— *Song 12*: bcl (1972–73, Suvini Zerboni).  
 Riccardo Formosa, *Domino*: Ebcl (1983, AMC).+  
 Gerald Glynn, *Whirligig & Gorlywhorl*: A & Bbcl (AMC).+  
 Gerard Grisey, *Charme* (1969, Ricordi).  
 Richard David Hames, *Icon with Simulacra*: Ebcl (1989, AMC).+  
 ——— *Memorabilia* (1984, AMC).  
 Helmut Lachenmann, *Interieur III "dal niente"* (1970, Breitkof & Hartel).+  
 Luca Lombardi, *Essay 2*: bcl (1979, Suvini Zerboni).  
 Donald Martino, *A Set for Clarinet* (1955, McGinnis & Marx).  
 Mark Pollard, *Quattuor figurae*: bcl (1983, AMC).+  
 Henri Pousseur, *Hermes I* (1968, Zerboni).  
 ——— *Madrigal I* (1958, Universal).  
 Shulamit Ran, *For an Actor*: Acl (1978, Th. Presser).  
 Salvatore Sciarrino, *Let Me Die Before I Wake* (1984, Ricordi).  
 Ian Shanahan, *Pastels*: Acl (1984, AMC).  
 Karlheinz Stockhausen, *Amour* (1976, Stockhausen Verlag).  
 ——— *Der Kkleine Harlekin* (1977, Universal).  
 Ton That Tiet, *Bao La* (1977, Transatlantiques).  
 Joji Yuasa, *Clarinet Solitude* (1980, Schott, Japan).

#### Duos

Giorgio Battistelli, *Segreti*: fl, cl (1987, ms).  
 Harrison Birtwistle, *Verses*: cl, pf (Universal).  
 Andre Boucourechliev, *Nocturnes*: cl, pf (Salabert).  
 ——— *Tombeau*: Acl, pf (1971, Leduc).  
 Sylvano Bussotti, *Solo—Passion Salon Sade*, arr. R. Toop: fl, cl (1986, ms).  
 Elliott Carter, *Esprit rude / esprit doux*: fl, cl (1984, Boosey & Hawkes).  
 ——— *Pastoral*: cl, pf (1940, Boosey & Hawkes).  
 Franco Donatoni, *Cinis*: bcl, voice (1988, Ricordi).  
 Anthony Gilbert, *Spell Respell*: cl, pf (1968, Schott, UK).  
 Gerald Glynn, *Music for Clarinet & Piano* (1968, ms).  
 Peter Maxwell Davies, *Hymnos*: cl, pf (1967, Boosey & Hawkes).  
 Arne Mellnas, *Rendez-vous I*: cl, bcl (1979, Reimers).  
 Henri Pousseur, *Variations*: cl, pf (Zerboni).  
 Enrique Raxach, *Careful with That*: bcl, perc (1982, Donemus).  
 Giacinto Scelsi, *Ko lho*: fl, cl (1966, Salabert).  
 ——— *Suite*: fl, cl (1957, Salabert).  
 Peter Sculthorpe, *Songs of Sea and Sky*: cl, pf (1987, Faber).  
 Ian Shanahan, *Cycles of Vega*: Ebcl, perc (1989, AMC).\*  
 ——— *Echoes/Fantasies*: bcl, perc (1984, AMC).  
 Janos Takacs, *Essays In Sound*: cl, pf (1968).  
 Iannis Xenakis, *Charisma*: vc, cl (1971, Music Contemporaine).  
 Isang Yun, *Riul*: cl, pf (1968, Bote & Bock).

#### Trios

Gerard Brophy, *Head*: bcl, picc, pf (1988, ms).  
 Mauro Cardi, *Terza Texture*: bcl, fl, pf (1988, Ricordi).  
 Giulio Castignoli, *Trio II*: fl, bcl, hrp (1986, Zerboni).  
 Chris Dench, *'atsiluth*: bcl, fl, pf (1991, UMP).\*\*

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Franco Donatoni, *Het*: bcl, fl, pf (1990, Ricordi).  
 Ivan Fedele, *Aiscrim*: fl, cl, pf (1983, Zerboni).  
 Mary Finisterer, *Triplice*: bcl, fl, pf (1991, AMC).\*\*  
 Michael Finnissy, *Botany Bay*: voice, fl, cl (1983, ms).  
 Andrew Ford, *Ringing the Changes*: bcl, fl, pf (1990, AMC).  
 Michael Smetanin, *Spray*: bcl, alto fl, pf (1990, AMC).  
 Jan Vriend, *Heterostase*: bcl, fl, pf (1989, Donemus).

#### *Clarinet and Electronics*

Don Banks, *4 x 2 x 1*: bcl, cl, tape (1977-78, AMC).  
 James Dashow, *Effetti Collaterali*: Acl, tape (1978, Edi-Pan).  
 Jennifer Fowler, *Arrows of St. Sebastian*: vc, cl, tape (1981, AMC).  
 Enrique Raxach, *Chimaera*: bcl, tape (1974, Donemus).  
 Steve Reich, *New York Counterpoint* (1983, Boosey & Hawkes).  
 John Rimmer, *Projections at Dawn*: cl, tape (ms).  
 Michael Smetanin, *Ladder of Escape*: bcl, tape (1984, AMC).  
 Phil Trelore, *Night Sounds at Ranthambour*: bcl, tape (1988, AMC).\*  
 Michael Whiticker, *On Slanting Ground*: cl, tape (1988, AMC).\*

\* Commissioned by Roslyn Dunlop.

\*\* Commissioned by Symeron.

+ Recorded, for release in 1992 on "Sounds Australian."

F. GERARD ERRANTE (U.S.A.), a native of New York City, holds a Doctor of Musical Arts degree in clarinet performance from the University of Michigan. Errante has published *A Selective Clarinet Bibliography, Contemporary Repertoire for Clarinet and Electronics*, and several compositions for clarinet, and has contributed numerous articles to a variety of journals. He has recorded for the CRI, Mark Recordings, Capstone Records, AIR Records, Inc. (Japan), and for national radio stations throughout the world. He has performed at many of the major festivals in America and was a prize winner in the International Gaudeamus Competition for Interpreters of Contemporary Music. A former president of ClariNetwork InterNational, Inc., he is currently serving as southeast regional chairman of the International Clarinet Society / ClariNetwork InterNational. On two occasions he served as Artist-in-Residence at the New South Wales State Conservatorium of Music in Sydney, Australia. He performed in Japan in 1989 and 1990 and again in 1991 under the auspices of a grant from the Asian Cultural Council as well as in Canada, Europe, New Zealand, and Hong Kong. A performing artist for Yamaha, currently he is a professor of Music at Norfolk State University, in Virginia, and co-director of the Norfolk Chamber Consort.

#### *Clarinet and Electronic Tape*

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Don Banks, *4 x 2 x 1* (1977-78, Australian Music Centre).  
 Jacob Druckman, *Animus III* (1969, Boosey & Hawkes).  
 Jonathan D. Kramer, *Renascence* (1974, ms).  
 Edward Miller, *Going Home* (1985, American Composers Alliance).  
 James Mobberley, *A Plurality of One* (1982, Magnamusic-Baton, Inc.).  
 David Olan, *Composition for Clarinet and Tape* (1975-76, American Composers Alliance).  
 Steve Reich, *New York Counterpoint* (1985, Boosey & Hawkes).  
 John Rimmer, *Projections at Dawn* (1986, Catena Press).\*



Vladimir Ussachevsky, *Four Studies for Clarinet and EVI* (1980, American Composers Alliance).\* +  
 Martin Wesley-Smith, *For Clarinet and Tape* (1983, Australian Music Centre).\*\*  
 Olly Wilson, *Echoes* (1974, Margun).  
 Scott Wyatt, *Soundets* (1987, ms).

#### *Clarinet and Real-Time Processing*

Jon Appleton, *The Endless Melody* (1986, ms).\* ++  
 Jane Brockman, *Ningana* (1989, ms).\* +  
 ——— *Tenacious Turns* (1991, ms).  
 F. Gerard Errante, *Elegy for Gilda* (1990, ms).+  
 Larry Johnson, *Voyage* (1982, ms).  
 Stephen Montague, *The Eyes of Ambush* (also uses didgeridoo and folk flute) (1973, Ed. Modern).  
 Thea Musgrave, *Narcissus* (1987, Novello).\*\* +  
 Mitsuharu Okazaki, *Hi no oto 4* (1991, ms).\*  
 Bruce Pennycook, *Praescio IV* (1990, ms).  
 Marilyn Shrude, *Drifting over a Red Place* (with slides and dancer) (1982, ms).  
 William O. Smith, *Asana* (1985, Ravenna Eds.).\* ++  
 ——— *Solo* (1980, Ravenna Eds.).+++  
 Ken Steen, *Fragmentary Slate Jackal* (1990, ms).\*  
 Kazuo Uehara, *Katarai II* (1990, ms).\* #

#### *Clarinet and Video*

Roger Greive, *Clarinet Chromatron* (1987, ms).\* ++  
 Ryo Maruyama, *Landscape of Memory* (1990, ms).\*  
 ——— *Shadows* (1991, ms).\*  
 William O. Smith, *Slow Motion* (1987, Ravenna Eds.).\*  
 David Stout, *Acceleration* (1987, ms).\*  
 Kazuo Uehara, *Media Mix* (1991, ms).\*  
 Reynold Weidenaar, *Between the Motion and the Act Falls the Shadow* (1981–91, Magnetic Music Publishers).\*  
 ——— *Love of Line, of Light and Shadow: The Brooklyn Bridge* (1982, Magnetic Music Publishers).\*  
 ——— *Night Flame Ritual* (1983, Magnetic Music Publishers).\* ###  
 ——— *The Stillness* (1985, Magnetic Music Publishers).  
 Martin Wesley-Smith, *Pyramid* (1983, ms).\*

#### *Unaccompanied Clarinet*

Leslie Bassett, *Four Soliloquies* (1976, Th. Presser).  
 F. Gerard Errante, *Another Look at October* (1984, Seesaw).++  
 ——— *Fantasy for Barney* (1990, MillCreek, Twenty-First-Century Etudes anthology).  
 ——— *Souvenirs de Nice* (1975, SHALL-u-mo).+++  
 Keiko Fujiie, *Three Pieces* (1988, Zen-On Music).  
 Masao Honma, *Monologue* (1991, ms).\*  
 Tom Johnson, *Bedtime Stories* (1985, Two-Eighteen Press).  
 Michio Kitazume, *Shadows IV* (1988, Zen-On Music).  
 Eric Mandat, *Tricolor Capers* (1980, Cirrus Music).  
 JoAnn Kuchera-Morin, *Yugen* (1984, ms).  
 Donald Martino, *B,a,b,b,it,t* (1966, Ione).  
 Ryo Maruyama, *Pour Clarinette Solo* (1974, ms).  
 William O. Smith, *Fragments* (1977, Ravenna Eds.).  
 ——— *64* (1989, MillCreek, Twenty-First-Century Etudes anthology).  
 Joan Tower, *Wings* (1981, G. Schirmer).  
 Dana Wilson, *Piece for Clarinet "Alone"* (1972, SHALL-u-mo).+++  
 Joji Yuasa, *Clarinet Solitude* (1980, Schott, Japan).

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### *Clarinet and Piano*

Harold Budd, *In Delius' Sleep* (1974, ms).  
Adolphus Hailstork, *A Simple Caprice* (1987, ms).\* ++  
Sydney Hodkinson, *Dissolution of the Serial* (+ tape) (1967, ms).###  
Masao Honma, *Jakkyo* (1983).  
William Penn, *Nine Songs from the Rubaiyat* (1974, ms).  
Elliott Schwartz, *Reading Session* (1983, ms).  
David Ward-Steinman, *The Tracker* (1976, ms).

\* Written for F. Gerard Errante.

\*\* Arranged for F. Gerard Errante.

+ Recorded, Capstone CD CPS 8607.

++ Recorded, Capstone CPS 8604.

+++ Recorded, Mark Educational Records, MES 38084.

# Recorded, AIR Records, AIR 011.

## Recorded, Capstone CPS 8601.

### Recorded, Composers' Recordings, Inc., CRI SD 292.

GUDNI FRANZSON (Iceland), b. 1961, received a performer's diploma in clarinet and a diploma in theory and composition from the Reykjavik College of Music, where his main teachers were Einar Johannesson and Atli H. Sveinsson. In 1984 he began studies in the Netherlands (George Pieterse, Harry Sparnaay, Walter Boeykens). He has been awarded many grants and prizes for his work, among them the Danish Leonie Sonnings Prize in 1987. He has appeared as soloist in most European countries and the Soviet Union and taken part in festivals such as Reykjavik Arts Festival, Gothenburg Music Week, NOMUS Festival and Young Scandinavian Musician Festivals. He has laid special emphasis on contemporary music, having worked with many composers who have written pieces for him. In 1990 his first CD *What Have They Done to Gudni's Clarinet* was released by ITM (Icelandic Music Information Center) with music by young Icelandic composers. He is one of the founders of the CAPUT Ensemble, which performs only contemporary music. Franzson is also a composer, having done music for several theater productions including music for the National Theater of Iceland.

### *Clarinet Alone (and Tape Accompaniment)*

Luciano Berio, *Lied per Clarinet Solo*.

——— *Sequenza IXa*.

Valentino Bucchi, *Concerto* (1969, Ricordi).

F. Donatoni, *Clair* (1980, Ricordi).

Thorolfur Eiriksson, *Mar*: cl, tape (1987, ITM).+

Rudolf Escher, *Sonata* (1973, Donemus).

Rikhardur H. Fridriksson, *Andar-Clar-comp.* (1991, ITM).

John Maxwell Geddes, *Winter* (1978, Scottish Music Pub.).

Larus H. Grimsson, *The Gossip Column* (1986, Donemus).+

Atli Ingolfsson, *Two Bagatelles* (1986, ITM).+

Zbigniew Karkowski, —M— (1986, ms).

Andre Laporte, *Reflections* (1970, Chester).

Hakon Leifsson, *Flight* (1985, ITM).+

Ingvar Lidholm, *Amicizia* (1980, W. Hansen).

Eduard McGuire, *Prelude 9*: cl, tape delay (1979, ITM).

Miklos Maros, *Monodie* (1974, W. Hansen).

Askill Masson, *Blik* (1979, ITM).

Arne Mellnäs, *Riflessioni*: cl, tape (1981, Reimers).  
 Eiríkur Ö. Pálsson, *Not a Toccata* (1988, ITM).  
 Kristof Penderecki, *Prelude*.  
 Henri Pousseur, *Madrigal I* (1958, Universal Ed.).  
 Leo Samama, *Tabee Mr. Orwell* (1984–85, Donemus).  
 ——— *Tryptique* (1974, Donemus).  
 Hrodmar Sigurbjörnsson, *Music for Clarinet* (1984, ITM).  
 William Sweeny, *Nine Days: Piobaireachd for Clarinet* (1986, Scottish Music Pub.).  
 Haukur Tomasson, *Intermezzo* (1987, ITM).

#### *Clarinet and Piano*

Snorri S. Birgisson, *Cantilena* (1989, ITM).  
 Gudni Franzson, *Sonatina* (1986, ITM).+  
 Jon Nordal, *Ristur* (1985, ITM).  
 Kjartan Olafsson, *Scorpion-Dance* (1986, ITM).+  
 M. Seter, *II. Monodrama* (1970, IMI).  
 Thorkell Sigurbjörnsson, *Four Icelandic Folksongs* (1976, ITM).  
 Atli H. Sveinsson, *Novelette* (1987, ITM).  
 Witold Szalonek, *Elegie* (1989).  
 Jon Thorarinnsson, *Sonata* (1947, ITM).  
 Hilmar Thordarson, *Piece for Clarinet and Piano* (1983, ITM).+  
 Haukur Tomasson, *VII Miniatures* (1985, ITM).

#### *Clarinet in Ensemble Combinations*

Thierry Blondeau, *Quintet for Clarinet and Strings* (1990, ms).  
 Finnur Torfi Stefansson, *Double Concerto with Bassoon and Strings* (1990, ITM).  
 Haukur Tomasson, *Quartets*: vn, vc, pf (1982–89, ITM).

#### *Concertos*

Anders Hillborg, *Lamento* (1982, SMIC).  
 Haukur Tomasson, *Hvörf* (1988, ITM).  
 Jaime M. Zenamon, *Llanura* (1991, ms).

+Recorded, ITM 6-03.

MICHÈLE GINGRAS (U.S.A.), a Canadian by birth, is associate professor of Clarinet at Miami University in Ohio. She has performed as a soloist and given master classes in Canada, France, Australia, Norway, the Republic of China, and throughout the United States. Her recordings include a disc with the Miami Wind Quintet, numerous solo recitals for Radio-Canada, and jazz saxophone solos on records and compact discs in Canada. She holds a M.M. in clarinet performance from Northwestern University (where she was Robert Marcellus' graduate assistant) and a First Prize both in clarinet and in chamber music from the Montreal Music Conservatory where she studied with Rafaël Masella. She has previously served as principal solo clarinet with the Santiago Philharmonic Orchestra in Chile and has published numerous articles in clarinet magazines.

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#### *Solo Clarinet*

Theodore Antoniou, *Three Likes* (1974, Schirmer).  
 John Eaton, *Concert Music* (1961, Shawnee Press).  
 Anders Eliasson, *Disegno* (Norwegian Music Information Center).+

Harry Freedman, *Lines* (1974, Canadian Music Center).\*  
Eric Mandat, *Folk Songs* (1986, Music Dept., Southern Illinois University, Carbondale).  
Tiberiu Olah, *Sonate* (1963, Salabert).

#### *Solo Clarinet with Electronic Processing*

William O. Smith, *Solo for Clarinet with Delay System* (1983, ms).++  
Morton Subotnik, *Passages of the Beast for Solo Clarinet and Electronic Ghost Score*  
(1978, Th. Presser).\*\*  
Norman Symonds, *Quintet for Clarinet and Synthesizers* (1977, Canadian Music  
Center).\*

#### *Clarinet with Piano*

Leslie Mann, *Sonata* (1962, Canadian Music Center).

#### *Clarinet and Tape*

Jane Brockman, *Ningana* (1989, 6310 Green Valley Circle #103, Culver City, CA  
90239).+++  
Edward Miller, *Going Home* (1985, ms).\*\*  
Steve Reich, *New York Counterpoint* (1985, Boosey & Hawkes).\*\*\*  
Scott Wyatt, *Soundets* (1987, School of Music, University of Illinois, Urbana).++++

#### *Clarinet and Percussion*

Larry Sitsky, *Zugerg for Clarinet and 3 Bongos* (1984).

#### *Woodwind Quintet*

Jacques Hétu, *Quintette pour instruments à vent, Op. 13* (1967, Canadian Music Center).

#### *Electronic Wind Instrument (AKAI)*

C. James Sheppard, *Cloudtree* (1989, with synths, ms).  
——— *Smokerings* (1988–90, ms).  
——— *Snowfall* (1988, Music Dept, Miami University, Oxford, Ohio).  
Scott Wyatt, *Four Vignettes* (1989, with tape, ms).++++

+Recorded, Kjell-Inge Stevansson, Artemis 7115.

++Recorded, F. Gerard Errante, SHALL-u-mo EMS 38084.

+++Recorded, F. Gerard Errante, CD Capstone Records CPS 8607.

++++Recorded, Howard Klug, CD Veriatza Records: Collections III.

\* Recorded, James Campbell, Radio Canada International RCI 484.

\*\* Recorded, Ramon Kireilis, OWL-30.

\*\*\* Recorded, Richard Stoltzman, RCA 5944-1.

ALAN HACKER (England) has been particularly associated with Peter Maxwell Davies, Harrison Birtwistle, and Alexander Goehr, with whom he founded several significant music theater and music ensembles. He also was a friend of Morton Feldman and gave many of the early performances of Boulez's *Domaines*. He continues to be a protagonist of new music with a number of younger composers collaborating with him. He revived Mozart's basset clarinet in the U.K. in the 1960s, an instrument that has been used widely by living composers. A selection of recommended pieces:

*Harrison Birtwistle*

*Clarinet Quintet* (1980).  
*4 Interludes from a Tragedy*: basset cl, tape (1968).  
*Linoi*: basset cl, pf (1968).  
*Melencolia I*: cl, double str orch, hrp (1976).  
*La plage*: 3 cls, pf, marimba, antique cymbals, voice (1968).  
*Verses*: cl, pf (1965).+

*Peter Maxwell Davies*

*Hymnos*: cl, pf (1967).  
*From Stone to Thorn*: basset cl, voice, gtr (1970).\*  
*Seven Brightnesses*: cl (1974).+

*Alexander Goehr*

*Paraphrase*: cl (1969).\*

*William Sweeney*

*Nine Days*: basset cl, drone (1976).  
*An Óg-Mhadainn*: basset cl, accompaniment (1979).+  
*Life Studies*: cl, pf (1985).+

*Judith Weir*

*Sketches from a Bagpiper's Notebook*: cl, pf (1980).+

*Philip Grange*

*La ville entière*: Ebcl, pf (1984).+

*Morton Feldman*

*Clarinet Quintet* (1980).  
*3 Clarinets, Piano, & Cello* (1974).

+Recorded, N.A.T.O.

\*Recorded, Decca.

KOICHI HAMANAKA (Japan) was born in Nishinomiya in 1937. In 1959, as an undergraduate at Tokyo University of Arts, he won the first prize at the Japan Music Competition, Woodwind Division. Immediately after his graduation, he joined the NHK Symphony Orchestra (Japan Broadcasting Corporation) as principal clarinetist. In 1962 he went to France to study further under Jacque Lancelot and graduated with the honor of *Grand Prix*. In the following year he was the winner at both the Nice and the Budapest international clarinet competitions. Upon returning to Japan in 1969, he rejoined the NHK Symphony Orchestra, again as principal clarinetist, a position he still retains. He has played concertos with various orchestras and has performed many solo and chamber music recitals. Currently he is the vice chairman of the Japan Clarinet Society and instructor at major music institutions in Japan. He has recorded several CDs including compositions of Brahms, Mozart, modern French, and Japanese composers.

### Recommended Works

Keiko Fujiye, *Three Pieces*: cl solo (Zen-On Music).+  
Michio Kitazume, *Shadows IV*: cl solo (1977, Zen-On Music).+  
Akira Miyoshi, *Perspective en spirale*: cl solo (1989, Zen-On Music).  
——— *Saimu*: 2 cls (1982, Zen-On Music).+  
Yasuo Sueyoshi, *Correspondence I. II.*: 2 cls (1975–76, Academia Music).+  
Takashi Yoshimatsu, *4 Pieces in Bird Shape*: cl, pf (Ongaku-no-tomo Edition).  
Joji Yuasa, *Clarinet Solitude*: 2 cls (1980, Schott, Japan).+

+Recorded by Hamanaka on the Fontec label (FOCD3209).

ROGER HEATON (England) is one of Europe's leading clarinetists specializing in contemporary music. As a soloist he has played at many of the major European festivals, including Darmstadt, La Rochelle, Milan, Turin, Huddersfield, Berlin, Bologna, Royaumont, London (Almeida), and also in Vancouver and Montreal. He has recorded solo programs for most of the major European radio networks, particularly WDR Cologne and the BBC, and has recorded for Wergo, CRD, ECM, Virgin Classics, and Collins Classics. He has given a number of world premieres and first British performances and has worked closely with composers such as Dillon, Dench, Dusapin, Radulescu, Ferneyhough, Bryars, Grosskopf, Platz, Volans, Walter Zimmermann, Grisey, and Henze. He has played with many ensembles and orchestras throughout Europe, including the London Sinfonietta, Ensemble Modern, the Gavin Bryars Ensemble, and the Arditti Quartet. In 1982 he took over from Hans Deinzer as clarinet professor at the Darmstadt Ferienkurse für Neue Musik, where he has since taught and performed. He is currently writing a book on new techniques for clarinet. In 1988 he was appointed musical director and conductor of the Rambert Dance Company (London).

### Repertory List

Milton Babbitt, *My Ends Are My Beginnings*: cl/bcl (1978, Peters Ed.).\*\*  
Clarence Barlow, “. . . Until . . .”: cl (1972, ms).  
Luciano Berio, *Concertino*: cl, vn, str (1951, U.E., London).  
——— *Lied*: cl (1983, U.E., London).  
——— *Sequenza IX*: cl (1980, U.E., London).  
Harrison Birtwistle, *Linoi*: cl, pf (1969, U.E., London).  
——— *Verses*: cl, pf (1966, U.E., London).  
Pierre Boulez, *Domaines*: with ensemble or solo (1969, U.E., London).  
Gavin Bryars, *Allegrasco*: cl, pf (1983, ms).\* +  
Sylvano Bussotti, *Brutto, Ignudo*: bcl (1980, Ricordi).  
John Cage, *Sonata*: cl (1933, Peters Ed.).  
Enrico Correggia, *Samek*: cl (1983, Salabert).  
Ruth Crawford-Seeger, *Diaphonic Suite No. 3*: 2 cls (1930).  
Chris Dench, *Time*: bcl (1981, ms).  
Edison Denisov, *Sonata*: cl (1972, Hans Gerig).  
James Dillon, *Crossing Over*: cl (1978, Peters Ed.).\*  
Douglas Doherty, *Confucius Lied*: cl/bcl, tape (1987, ms).  
Franco Donatoni, *Clair*: cl (1980, Ricordi).  
Pascal Dusapin, *If*: cl (1984, Salabert).\*  
Morton Feldman, *Bass Clarinet and Percussion* (1981, U.E., London).  
——— *Clarinet and String Quartet* (1983, U.E., London).\*\*

- Christopher Fox, *Divisions*: cl (1979–80, ms).\*
- *Nova Tracer*: cl, pf (1982, ms).\*
- . . . *Or Just After . . .*: cl (1984, ms).\*
- *Reeling*: cl, perc (1983, ms).\*
- *Stone; Wind; Rain; Sun*: 2 cls (1989, ms).\*
- *Sunrise with Sea Monsters*: cl (1986, ms).\*
- *Waves of Shine (arc en ciel)*: cl, tape (1987, ms).\*
- Vinko Globokar, *Dédoublement*: cl with timpani (1975, Peters Ed.).\*\*
- *Voix instrumentalisée*: bcl (1973, Peters Ed.).\*\*
- Alexander Goehr, *Paraphrase*: cl (1973, Schott, Japan).
- Gerard Grisey, *Charme*: cl (1969, Ricordi).\*\*
- *Solo pour deux*: cl, trb (1981, Ricordi).\*\*
- Erhard Grosskopf, *Einnerungen* (aus Lichtknall): bcl, pf, perc (1987, ms).
- *Lied*: bcl, str quart (1977, ms).
- Luigi Guarneri, *Un frammento*: bcl (1977–86, ms).\*
- Giuseppe Guiliano, *Man nyorai myoshoku*: cl (1983, ms).\*
- *Random C*: bcl, tape (1989, ms).\* + +
- Jonathan Harvey, *Be(com)ing*: cl, pf (1979, Faber Music).
- Peter Hatch, *Eurhythmy*: 2 cls (1985, ms).\*\*
- Han Werner Henze, *Le miracle de la rose*: cl, ensemble (1981, Schott, Japan).
- Hans Joachim Hespos, *Pico*: picc, cl (1978, ms).\*\*
- Tom Johnson, *Bedtime Stories*: cl, voice (1985, ms).\*\*
- *Infinite Melodies*: cl (1986, ms).\*\*
- *Rational Melodies*: cl (1982, ms).
- Helmut Lachenmann, *Dal niente*: cl (1970, Breitkopf & Härtel).\*\*
- Elizabeth Lutyens, *Five Little Pieces*: cl, pf (1945, Schott).
- *Tre*: cl (1978, U.E., London).
- Costin Miereanu, *Do-mi-si-la-do-re*: cl, sax, tape (1981, Salabert).\*\*
- *Rumore*: cl (1986, Salabert).\*\*
- Dario Maggi, *Linee di forza*: cl (1986, ms).\*
- Peter Maxwell Davies, *Hymnos*: cl, pf (1967, Boosey & Hawkes).
- Barbara Monk Feldman, *False Doors*: cl, perc, tape (1989, ms).\*
- Adolfo Nunez, *Asuntos*: cl (1983, ms).
- Krzysztof Penderecki, *Prelude*: cl (1987, Schott, Japan).\*
- Robert H. P. Platz, *Raumform*: cl (1982, Breitkopf).\*
- Henri Pousseur, *Madrigal I*: cl (1958, U.E., London).
- *Madrigal III*: cl & ensemble (1962, U.E., London).
- *Variations*: cl, pf (1981).
- Horatiu Radulescu, *The Inner Time*: cl, tape (or live) (1982, ms).\*
- Roger Redgate, *Eös*: cl, pf (1984, ms).\*
- *New Work*: cl (1990, ms).\*
- Steve Reich, *New York Counterpoint*: cl, tape (1985, Boosey & Hawkes).
- Giacinto Scelsi, *Ixor*: cl (1956, Salabert).\*\*
- *Kya*: cl, ensemble (1959, Salabert).\*\*
- *Pregiera per un'ombra*: cl (1959, Salabert).
- *Tre Studi*: picc cl (1954, Salabert).
- Salvatore Sciarrino, *Let Me Die Before I Wake*: cl (1983, Ricordi).
- Denis Smalley, *Clarinet Threads*: cl, tape (1985, ms).\* + + +
- William O. Smith, *Variants*: cl (1972, U.E. London).
- Karlheinz Stockhausen, *In Freundschaft*: cl (1977, Stockhausen Verlag).
- Toru Takemitsu, *Waves*: cl, ensemble (1976).
- Christian Wolff, *Dark as a Dungeon*: cl (1977, Peters Ed.).
- Iannis Xenakis, *Charisma*: cl, vc (1971, Salabert).
- Isang Yun, *Riul*: cl, pf (1968).\*\*
- Walter Zimmermann, *In der Welt sein*: bcl (1982, ms).\*\*
- *25 Kärwa-Melodien*: 2 cls (1979, ms).

\* Written for Heaton / first performance.

\*\* First British performance.

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+Recorded, ECM.  
++Recorded, Rusty Records, Milan.  
+++Recorded, Wergo.

JOSEF HORÁK (Czechoslovakia). A very important “new direction” for clarinet in the early 1960s has been the rise to prominence of the bass clarinet as a solo instrument. Josef Horák has been the player who facilitated this movement. At fourteen he became a pupil at the High School for Music at Brno, studying with professor Frantisek Horák and Antonín Dolezal. By 1952 he was principal clarinet in Brno’s Radio Symphonics Orchestra, deputizing in 1955 as bass clarinetist. On March 24, 1955, he gave a full-length recital on this instrument, the first of its kind in the world. In 1956 he moved to the State Philharmonic Orchestra, founding shortly thereafter the Musica Nova Brno ensemble (flute, bass clarinet, piano, and percussion), which specialized in contemporary music. The group was the first to play the works of Stockhausen in Czechoslovakia, Stockhausen inviting Horák to Darmstadt in 1968 to take part in the first performance of his *Musik für ein Haus* with 13 other world-class soloists, including Vinko Globokar, Heinz Holliger, and Alfons Kontarsky. He moved to Prague in 1963, where he founded the Due Boemi di Praga with pianist Emma Kovárnová. He has taught soprano and bass clarinet, saxophone, and chamber music in Biberach, Germany, since 1969, and at the Prague Conservatoire from 1974. His solo recordings include *Zauber der Bassklarinette* (Carus, Germany, FSM 53 114), *Serenade der Due Boemi* (EGE, Germany, F666 707), *Due Boemi* (Supraphon, 1 11 1700 G), *Musica nove bohémica—Due Boemi* (Artia, 1 11 1390), *Due Boemi di Praga* (Panton, 11 0369 G), *Due Boemi e ispirazione* (Panton, 11 0614), *Due Boemi Play Music of 5 Centuries* (Panton, 8111 0229), *Due Boemi and Czech Philharmonic* (Panton, 8110 0419 ZA), *Due Boemi—Double Concertos* (Panton, 81 0677–1011), *Die singende Bassklarinette* (NSS Records, Germany Â 36 908, also on CD). He has also made about 65 single recordings on various other labels (some listed below). He has recorded more than 370 *radiorecords* in 15 countries and has been accompanied by 36 orchestras. He has given seminars in Poland, Bulgaria, Switzerland, Austria, Sweden, Denmark, Holland, France, Malta, Cuba, Germany, Belgium, Romania, England, USSR, U.S.A., and Finland. He has participated in festivals in Prague, Darmstadt, Zagreb, Berlin, Vienna, London, Denver, Belgium, Antwerp, Rotterdam, and elsewhere. His prizes include the Medal of B. Smetana; the Prize of Critics, Berlin; the Gold Shield of Panton; the Prize of Competition of L. Janáček; the Prize of HI-FI Festival, Paris; the Honorary Membership of the Jeunesses Musicales de Suisse; and others. The profiled disc *Due Boemi* (Panton, 11 0369 G) became “pick of the year” in England in 1976 and in Czechoslovakia in 1974; *Musica nova bohémica—Due Boemi* (Artia, 1 11 1390) became “clarinet super record, Tokyo” in 1986.

The following contains works written for and dedicated to Josef Horák—527 of them, plus ten authorizations (beginning with the authorization by Hindemith to play his bassoon sonata on the bass clarinet in 1960)! Works are in manuscript unless listed otherwise.



## Bass Clarinet Alone

- Josef Adamík, *Monolog*.  
Benno Ammann, *Panda*.  
Milan Báčorek, *Epigrams*.  
Jirí Bárta, *Katachrese II*.  
Irmelia Bauer, *Imaginationi*.  
Pavel Blatný, *Show for Horák*.  
Sylvie Bodorová, *3 Miniatures*.  
Roland Boehm, *Improvisation*.  
Josef Bohác, *Dolce cantabile*.  
Richard Brun, *Reflection of Black Reflections*.  
Violeta Dinescu, *Satya IV*.  
Leos Faltus, *Abbreviazioni*.  
——— *Inventioni*.  
Josef Gunzinger, *Moods*.  
Alois Hába, *Sonata, Op. 78a*.  
——— *Suite, Op. 96*.<sup>oooooo</sup>  
——— *Suite, Op. 69a*.  
Norman Heim, *Ode on Efesus*.  
John Johannes, *Solo-Sonatine*.  
Emil Kaplánek, *Solo for Horák I*.  
——— *Solo for Horák II*.  
Jan Kapr, *Testimonianza I* (Ed. CHF, Prague).  
Jan Klusák, *1-4-3-2-5-6-7-10-9-8-11*.  
Paul Kont, *Gesänge*.  
Ladislav Kupkovic, “. . . ”  
Yehoshua Lakner, *Piece for Horák* (IMI [Israel Music Institut], 342).  
Thomas Lauck, *Gebet . . .*  
——— *. . . wie ein Rufen nur aus Träumen* (Ed. Modern, M2217E).  
Stepán Lucký, *Preludio e scherzino*.+++++++  
Ivana Loudová, *Aulos* (G. Schirmer, New York, 48173).  
——— *Quattro pezzi*.  
Josef Masta, *Music of the Night*.  
Lukás Matousek, *Five Canons*.  
——— *Intim Music*.  
Jirí Matys, *Fantasia e rondino*.  
Jana Obrovská, *Suoni per solo*.  
Dusan Pandula, *Talk with Painter Kupa*.  
Elena Petrová, *Pantomima II*.  
Alois Pinos, *Dialogs with Horák*.  
——— *Monologs*.  
Emanuel Planzer, *Solo for Horák*.  
Karel Reiner, *Annotata*.  
——— *Marginalie*.  
Bernhard Rövenstrunck, *Nausikaa—praeludium*.  
——— *Sequenza*.  
Petr Ruzicka, *Electronia for Horák* (+ tape).  
Jan Rychlík, *Solo Suite*.  
Manfred Schubert, *Pour Sabine*.  
Sergej Slonimskij, *Chromatic Movement*.  
Jaroslav Smolka, *Sonata*.  
Jirí Smutný, *Inventioni*.  
Vladimír Soukup, *Imaginationi I*.  
Milos Stedron, *Meditationi*.  
——— *Musiche*.  
——— *Monolog and Fantasy*.  
——— *Seikilos I*.  
——— *Solo rubato e velocissimo*.  
——— *To Josef*.

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——— *Utis I* (+ tape).  
 Tejkon, *Picture*.  
 Johannes P. Thilman, *Kontrasts for Horák*.  
 Sláva Vorlová, *Dialogue with Horák*.  
 ——— *Drôleries bassclarinetiques*.  
 ——— *Il fauno dansante*.  
 ——— *Phantasy on the Czech Song from XIV. cent.—II*.  
 Florian Wiefler, *Sonatina*.

*Bass Clarinet and Piano (Recordings are Performed by Due Boemi Di Praga  
 [with Emma Kovárnová])*

Luis G. Acuna, *Poema e scherzo*.  
 Benno Ammann, *Excursions*.  
 ——— *Metaphories*.  
 ——— *Ukayali*.  
 ——— *Voice of the Mountain*.  
 Bretislav Bakala, *Sonata*.  
 Jirí Bárta, *Confrontation*.  
 ——— *Katachrese*.  
 ——— *Suite*.  
 ——— *Variations d'automne*.  
 Jan Z. Bartos, *Inventions*.  
 Irmelia Bauer, *4 Tanzszenen*.  
 Gregory Biss, *You*.  
 Ivo Bláha, *Duo*. \*\*\*\*\*  
 Josef Blatný, *4 Miniatures, Op. 65*.  
 Pavel Blatný, . . . *and a Little Song*.  
 ——— *Models for Due Boemi*.  
 ——— *Suite à 12* (Panton, 35-644-67).  
 Jaromír Bocek, *Nocturne from Písek*.  
 ——— *Suite*.  
 Sylvie Bodorová, *Musica dedicata per I Due Boemi*.  
 Roland Boehm, *Pensées de nocturne*.<sup>oooo</sup>  
 ——— *Prolog and Fiesta*.  
 ——— *Together*.  
 Josef Bohác, *Berceuse*.  
 ——— *Small Suite*.  
 ——— *Studii concertanti per I Due Boemi* (Supraphon, 0217877). \*\*\*\*\*  
 Rehor Bohuslav, *Guernica*.  
 Richard Brun, *Perpetual Flowing*.  
 ——— *Pictures for Due Boemi*.  
 ——— *The Rain of the Sun*.  
 Horst Buchsfeldt, *Phantasia*.  
 Roland Buchwald, *Fragmente*.  
 ——— *Music for Due Boemi*.  
 Buckinx, *Atoom à due*.  
 Jarmil Burghauser, *Twilights and Dawns*.  
 Burgmann, *4 Sequenzen*.  
 Osvald Chlubna, *Meditation, Op. 117*.  
 Cohen, *Music*.  
 Kevin Corner, *Runes*.  
 Pavel Cotek, *Causerie*.  
 ——— *Causerie II*.  
 Violeta Dinescu, *Meandre*.  
 Antonín Dolezal, *Paraphrase*.  
 Elisabeth Dorfner, *Lied*.  
 ——— *Oh, Willow, Willow . . .*  
 Jirí Dvoráček, *Drammatic Dialogues II*.

Leos Faltus, *Concerto lirico*.  
 ——— *Inventioni*.  
 Jindrich Feld, *Concert Suite* (Ed. Modern, M 1637 E).  
 Václav Felix, *Sonata da requiem* (Panton, P 1440).  
 ——— *Sonata giocosa*. + + + +  
 Petr Fiala, *Music for Due Boemi*.  
 Jan F. Fischer, *Canto á Due Boemi*.  
 Oldrich Flosman, *Adagio and Finale*.  
 ——— *Music II*.  
 ——— *Robber's Sonatina*. \* \* \* \* \*  
 Paul Fürst, *Relationi*.  
 Wolfgang Gabriel, *Ballade, Op. 23* (Doblinger, Vienna, D15 683).  
 ——— *Sonata, Op. 31*.  
 Jozef Gahér, *Sonata*.  
 Franz Glöggler, *Air*.  
 Lucien Goethals, *4 Stukken*.  
 Sofia Gubajdulina, *Linien, Points, and Spirals*.  
 Pavel Haas, F. Suchý, *Suita*.  
 Milos Haase, *Capriccio per I Due Boemi*.  
 Alois Hába, *Phantasy Op. 34a*.  
 ——— *Suita, Op. 100*. + + +  
 Miroslav Hába, *Scherzo*.  
 Ales Hájek, *3 Promenades*.  
 Miroslav Halouzka, *Characters*.  
 Norman Heim, *Inkantation of Mephistopheles*.  
 ——— *Metamorphoses, Op. 81*.  
 Michael Heinzl, *Rezitativo ed thema con variationi*.  
 Miroslav Hlavác, *Duo*.  
 ——— *Musica diafonica* (+ tape).  
 Emil Hlobil, *Sonata, Op. 80*.  
 Klaus Huber, *Schattenblätter III*.  
 Ilija Hurník, *Préludes*.  
 Ilija Iliev, *Music for Two I*.  
 ——— *Music for Two II*.  
 ——— *Music for Two III*.  
 ——— *Reflection in the Night Without Sleep*.  
 Viktor Jekimovskij, *Leaves; Secret*.  
 Karel B. Jirák, *Sonata, Op. 59a*.  
 ——— *Sonatina, Op. 91*.  
 Ivo Jirásek, *Spectres*.  
 ——— *Suita*.  
 John Johannes, *4 Miniatures*.  
 Miroslav Juchelka, *Barcarolle*.  
 ——— *Intermezzi*.  
 Emil Kaplánek, *Depression*.  
 ——— *Meditation*.  
 Maurice Karkoff, *Notturmo*.  
 Erhard Karkoschka, *HORKOV* (Musikverlag Döring, MD 4100).  
 Afrodita Katmeridu, *Dialoghi*.  
 James Kippen, *Three Pieces*.  
 Kittler, *Skizzierte Zufälligkeiten*.  
 Jan Klusák, *Reydowak II*. \*  
 Ernst L. Knorr, *Fantasia*.  
 Ctirad Kohoutek, *Tissues of the Times* (Panton). \* \* \* \* \*  
 Jiri Kolafa, *La follia e danza*.  
 ——— *Sonata*  
 Peter Kolman, *Wie ein Hauch von Glückseligkeit . . .*  
 Stepán Koníček, *Choral and Talks*.  
 ——— *Variation on the Blues Forgotten*.  
 Paul Kont, *Fragmente*.

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- *Metamorphosen*.  
 ——— *Selbstbildnisse*.  
 ——— *Sonate bielorusse*.  
 Daniel Kremser, *Dank und Lob*.  
 ——— *Laudes*.  
 ——— *Sonatina* (Biberach, Kremser).  
 Ladislav Kubík, *Two Episodes for Due Boemi*.<sup>ooo</sup>  
 Václav Kucéra, *Duodramma* (Supraphon-Artia H 466o).<sup>\*\*</sup>  
 ——— *Invariant* (+ tape).<sup>\* +</sup>  
 ——— *Prague Ritornells*.  
 ——— *Tabu á Due Boemi*.<sup>o</sup>  
 Paul Kühmstedt, *Divertissement*.  
 ——— *Valse*.  
 Laco Kupkovic, *Dances from Panonia*.  
 ——— *Sonata*.  
 ——— *Sonata Nr. 2*.  
 Ladislav Kupkovic, *Shrieks II*.  
 ——— *More and Less*.  
 Thomas Lauck, *Se vuelve a yo . . .*  
 Arne Linka, *Castle Suite*.  
 Norbert Linke, *Sonata*.  
 Rainer Lischka, *Music Joke*.  
 Anestis Logothetis, *Desmotropie*.  
 ——— *Meditation*.  
 ——— *Osculation*.<sup>oo</sup>  
 Ivana Loudová, *Air* (G. Schirmer, 48173C).<sup>++</sup>  
 ——— *Sonata 1963*.  
 Stepán Lucký, *Arietta*.  
 ——— *Elegie*.  
 ——— *Tre pezzi per I Due Boemi* (Panton, 1086).<sup>++</sup>  
 Zdenek Lukás, *Legende*.  
 Otmar Mácha, *Adagio*.  
 Ivan Marinov, *Concert Study*.  
 Karl Marx, *Elegie*.  
 Josef Masta, *Drawings*.  
 Zbynek Mateju, *Sonata*.  
 Jirí Matys, *Music for Due Boemi*.  
 Zdenko Mikula, *Canto rustico*.  
 Hubert Motay, *Capriccio brillante* (ULM, Motay Ed.).  
 Vojtech Mojzís, *Sympathy*.  
 Manfred Nedbal, *Sonatina* (Doblinger, Vienna, 13479).  
 Jan Nemeč, *Spring Idyll*.  
 Veroslav Neumann, *Promenade in Spa*.  
 Jan Novák, *Scherzi pastorali*.  
 ——— *Songs About Maria*.  
 Jana Obrovská, *Suoni per I Due Boemi*.  
 Karel Odstrčil, *Mámidlo*.  
 Pavel Palkovský, *Dialog*.  
 ——— *Tri sarkasmy*.  
 Arnost Parsch, *The Bird in the Clouds*.  
 ——— *Les fleurs*.<sup>o</sup>  
 ——— *For Josef Horák*.  
 ——— *From Old Moravia*.  
 ——— *Poetica II*.<sup>+\*</sup>  
 ——— *Poetica II.a* (+ tape).  
 ——— *Structures*.  
 Jirí Pauer, *Aria and Rondo*.  
 ——— *Basklarinetina*.  
 Elena Petrová, *Invocations*.<sup>o</sup>  
 Alois Pinos, *Due Boemi campanari*.

- *Peripetie*.  
 ——— *3 Lyric Drawings*.  
 Emanuel Planzer, *Drawing 1-10*.  
 ——— *Music for Due Boemi* (+ tape).  
 Jirí Pokorný, *Prkotina*.  
 Zdenek Pololánik, *Musica trascurata*.  
 Henri Pousseur, *Modèles réduit*.  
 Herrmann Rechberger, . . . *Szene am.* + + + + +  
 Václav Reháč, *Sonetti*.  
 ——— *Suite in the Old Style*.  
 Gerhard Rehm, *Spiegel*.  
 Karel Reiner, *Akrostichon and Allegro*.  
 ——— *Three Concert Pieces* (Panton, P1052).  
 Kurt D. Richter, *Quatre images*.  
 Václav Riedlbauch, *Tales for Due Boemi*.  
*Three Concert Pieces* (Panton, P1052).  
 Bernhard Rövenstrunck, *Inkantation*.  
 Petr Ruzicka, *Contaminationi*.  
 Dieter Salbert, *Figures contraires*.  
 Milan Salich, *Sonata*.  
 Dagmar Sárova, *Pezzo da camera*.  
 Gerhard Schaar, *Abend ist's . . .*  
 ——— *Allegro concertante*.  
 ——— *Song of Love*.  
 Ruth Schärli, *Parthenon*.<sup>oo</sup>  
 Christfried Schmidt, *Musica á Due Boemi* (Breitkoph u. Härtel BG 1154).  
 Robert Schollum, *Pastorale concertante, Op. 122*.  
 Bohumil Sedláček, *Spring*.  
 Ivan Shekov, *Silhouettes*.  
 Sergej Slonimskij, *Monolog and Toccata*.  
 Lubos Sluka, *Cage for Two Nightingales*.  
 ——— *D-S-C-H* (Panton, P1737).<sup>o</sup>  
 ——— *Sonata* (Spraphon-Artia, H 5296). + +  
 ——— *Suita da camera*.  
 Jaroslav Smolka, *Sei poemi per I Due Boemi*.  
 ——— *Two Miniatures*.  
 Jirí Smutný, *Jewish Songs*.  
 ——— *Musica da camera per Due Boemi*.  
 ——— *Sonata*.  
 ——— *Two Songs*.  
 Jitka Snížková, *Alfa solaris*.  
 ——— *Ancient Songs*.  
 Vladimír Soukup, *Sonetti* (Panton, 35 68968).  
 Josef Spitzer, *Dorri-Noi's* (+ tape).  
 ——— *Tongs*.  
 Jo Sporck, *Burst in Blue*.  
 Milos Stedron, *Ausvicata biker három*. \* \* \* \*  
 ——— *Canti Claudiani*.  
 ——— *Chundrát from Znoimia*.  
 ——— *Conductus and Motetes*.  
 ——— *Dances for the Dead*.  
 ——— *Danube III*.  
 ——— *Echoes of Hus's Songs*.  
 ——— *Gipsy Song and Dance*.<sup>oooo</sup>  
 ——— *Green Melody of Love*.  
 ——— *Hommage à Bach / Music from Towers*.  
 ——— *Hus in Biberach*.  
 ——— *Kolo*.  
 ——— *Lejch*.  
 ——— *Lejch II*. +

- *Melodies from Old Czech Singbooks.*  
 ——— *Nenia for Skopje i Banja Luka.*  
 ——— *Nenie giocose e dolorose* (pf 4 hands).  
 ——— *O tu cara.*  
 ——— *Seikilos in Moravia.*<sup>oooo</sup>  
 ——— *Soli braevia.*  
 ——— *Songs from Lidice.*  
 ——— *Sopra.*  
 ——— *The Pipe Abandoned.*  
 ——— *Two Together.*  
 ——— *Utis B* (+ tape).  
 ——— *Valachica of the Melodies of the XVI Century.*<sup>\*\*\*\*</sup>  
 ——— *Wistful Songs.*  
 ——— *Zingarica.*  
 Konrad Stekl, 4 *Fantasiestücke*, Op. 95.  
 ——— *Figurae boema.*  
 ——— *Sonata rusca.*  
 Karlheinz Stockhausen, *Versetze dich . . .*<sup>oo</sup>  
 Jan Tausinger, *Incantazioni.*<sup>++</sup>  
 ——— *Successioni.*  
 ——— *Two Reflections for Due Boemi.*  
 Jaroslav Tioka, *Etudes.*  
 Antonín Tucapský, *Sonata boema.*  
 Johannes P. Thilman, *Gestalten* (Ed. Peters, Leipzig, 5354).  
 Geraldine Thomsen, *Music for Due Boemi.*  
 Antonín Vaigl, *Elegie.*  
 Jirí Válek, *Five Czech Dances.*  
 ——— *Meditation of Five Czech Folk Songs* (pf 4 hands).  
 Jo van den Booren, *Equilibrio a due.*  
 ——— *Zenith* (Donemus, 1981).  
 Petr Vavřín, *Small Suite.*  
 Alois Veselý, *Sonata.*  
 Jan Videnský, *Dialogues.*  
 ——— *Saluto.*  
 Sláva Vorlová, *Christmas Phantasy*, Op. 85a.  
 ——— *Christmas Phantasy*, Op. 85b.  
 ——— *Correlations*, Op. 75a.  
 ——— *Miniatures* (Panton, II 0614 G).  
 ——— *Phantasy on a Folk Song from the XIV Century.*  
 ——— *Variations on the Händel Thema.*  
 Zbynek Vostrák, *Butterfly of Light.*  
 Frantisek Vrána, *Preludium; Scherzo piccolo; Final.*  
 Florian Wiefler, *Kleine Stücke.*  
 ——— *Sonata.*  
 ——— *Zwölf Zimmer.*<sup>\*\*\*</sup>  
 Kazimierz Wilkomirski, *Poemat.*  
 ——— *Wokaliza.*  
 János J. Wolf, *Litanie.*  
 ——— *Symbols.*  
 ——— *Transzendenz* (+ tape).  
 ——— *Transzendenz III.*  
 Heinz J. Zander, *Ballade.*  
 ——— *Rhapsodie.*  
 Jan Ev. Zelinka, *Tours of Odysseus.*  
 Pavel Zemek, *Five Seasons.*

#### *Bass Clarinet in Chamber Ensembles*

- Bárta Jirí, *Confrontationi I*: bcl, cb.  
 Pavel Blatný, *Three Movements*: fl, bcl, pf.

Roland Boehm, *Traumszenen*: fl, bcl, gtr, pf.  
 Josef Bohác, *Sonetti per sonatori*: fl, bcl, cembalo, pf, perc (Panton, P 1669).  
 Burgmann, *4 Sequenzas*: fl, bcl, pf.  
 Gregor Cestmír, *Trio*: fl, bcl, pf.  
 Leos Faltus, *Trio*: fl, bcl, vla.  
 Jindrich Feld, *Duo*: fl, bcl (Leduc, Paris, 23455).  
 ——— *Suite concertante II*: bcl, pf, perc.  
 Grigorij Firtic, *Contrasts*: fl, bcl, pf.  
 Oldrich Flosman, *Music*: bcl, gtr.  
 Reinfried Gantner, *Rondino*: bcl, fl, pf.  
 Norman Heim, *Concertino da camera*: fl, bcl, pf.  
 Josef Hora, *Suite on Folk Songs*: fl, vla, bcl.  
 Klaus Huber, *Schattenblätter*: bcl, vc, pf.  
 ——— *Schattenblätter II*: bcl, vc.  
 Ilija Lliev, *Fuga*: 2 cls, bcl, vc.  
 Oleg Jancencko, *Sonatina*: fl, bcl, pf.  
 Jan Kapr, *Testimonianza*: vn, vc, bcl, pf (Ed. CHF, Prague).  
 Jan Klusák, *Reydowak II*: bcl, vla, cb.  
 ——— *Suita for Two*: fl, bcl.  
 Miroslav Kokoska, *Music for Five*: fl, bcl, gtr, marimba, pf.  
 Ladislav Kubík, *Due episodi II*: bcl, pf, perc. + + + + + +  
 Ladislav Kupkovic, *Shrieks I*: fl, bcl, hrpsicd, perc.  
 ——— *Variations on Slovak Song*: vn, bcl, accordian.  
 Ivana Loudová, *Aulos-Syrinz*: fl, bcl.  
 Josef Masta, *Trio*: fl, bcl, pf.  
 Jirí Matys, *Suita*: bcl, vla (Panton, 1675).\*\*\*\*\*  
 Manfred Nedbal, *Divertimento II*: fl, cl, bcl.  
 ——— *Small Trio*: cl, bcl, vc.  
 ——— *Trio*: bcl, vc, pf.  
 Jana Obrovská, *Bisbiglii e gridi*: bcl, gtr.  
 ——— *Musica notturna*: fl, bcl, pf.  
 Arnost Parsch, *Far Horizons*: alto fl, bcl, pf.  
 ——— *Fantasy*: bcl, gtr.  
 Alois Pinos, *Cartoons*: fl, bcl, pf (Ed. Sta'ti Hud. Vyd., Artia, H4011).  
 ——— *Conflicts*: fl, bcl, hrpsicd, perc.  
 Zdenek Pololánik, *Musica concisa*: fl, bcl, pf, hrpsicd, perc (Panton, P645).  
 ——— *Scherzo contrario*: vn, bcl, xyl (Ed. G. Zamboni, Italy 651262).  
 Václav Reháč, *Trio*: fl, bcl, pf.  
 Gerhard Rehm, *Spiegel*: fl, bcl, pf.  
 Bohuslav Rehor, *Structures*: fl, bcl, pf.  
 Karel Reiner, *Trio*: fl, bcl, perc (Supraphon, 0227867).  
 Bernhard Rövenstrunck, *Versos*: fl, bcl, pf, perc.  
 Petr Ruzicka, *Music for Five*: fl, bcl, pf, hrpsicd, perc.  
 Ladislav Simon, *Antithese*: fl, bcl, pf, perc.  
 ——— *Dimensioni*: fl, bcl, pf, perc.  
 Milan Slavický, *Dawn II*: bcl, pf, perc (Ed. Schott).  
 Jirí Smutný, *Canzonetti*: rec, bcl, pf.  
 Karel Sodomka, *Seconds of Three Centuries*: fl, bcl, pf/hrpsicd, perc.  
 Milos Stedron, *Agonie*: vn, bcl, celesta, perc.  
 ——— *Anonymus moraviensis*: bcl, pf, perc.  
 ——— *Cantate*: fl/picc, bcl, pf, perc.  
 ——— *Canzona e tripla / Prayer of the Bass Clarinet*: 4 or more bcls.  
 ——— *Four Together*: tpt, bcl, cb, pf.  
 ——— *Free Landino Jazz*: bcl, cb, pf.  
 ——— *Music for Three*: fl, ob, bcl.  
 ——— *Praeludium and Dance*: 2 bcls, pf.  
 ——— *Saluti Musicali*: rec, bcl, pf or hrpsicd.  
 ——— *Stomp*: bcl, cymbal.  
 ——— *Stop!*: rec, bcl, pf.  
 ——— *Via Crucis*: fl, bcl, pf, hrpsicd, perc.

Jirí Stivín, *Music for Three / Excursions of Alchemists*: fl, bcl, pf.  
 Johannes P. Thilman, *Trio piccolo*: bcl, fl/alt fl, vla.  
 ——— *Vier Gespräche*: fl, bcl, pf (Ed. Peters, H 5392).  
 Antonín Tučapský, *Trio*: fl, vla, bcl.  
 Jo van den Booren, *Duetto scherzoso*: bcl, fl.  
 ——— *Equilibrio a tre*: fl, bcl, pf.  
 Sláva Vorlová, *Dimensioni*: fl, bcl, pf, perc.  
 ——— *Imanentioni*: fl, bcl, pf, perc. + + + +  
 Rudolf Wagner-Régeny, *Divertimento*: fl, cl, bcl, perc.  
 Jaroslav Werner, *Inspirazioni*: 2 bcls.  
 Florian Wiefler, *Serenata*: bcl, fl, hn, pf, vla, vc.  
 Jaroslav J. Wolf, *Kolloquio*: fl, bcl, pf, perc.  
 Evzen Zámečník, *4 Studies*: bcl, pf, perc.  
 ——— *Invenzioni*: fl, bcl, pf, perc.

#### *Concertos for Bass Clarinet and Orchestra*

Jan Z. Bartos, *Inventioni*: strs.  
 Manfred Nedbal, *Divertimento*: strs (Doblinger, Vienna, D 12793A).  
 Alois Pinos, *Concerto on B-A-C-H*: strs and perc.  
 Toma Prosev, *Music concertante*: strs.  
 Václav Reháč, *Concerto in Old Style*: strs.  
 Karel Reiner, *Concerto*: strs and perc (Panton, P1052). \* \* \* \* \*  
 Bernhard Rövenstrunck, *Concerto da camera*: strs and perc (Ed. Modern, M 1157E).  
 Milos Stedron, *Suita Valachica*: strs.  
 Sláva Vorlová, *Concerto, Op. 50*: strs.

#### *Concertos for Bass Clarinet, Piano, and Orchestra*

Jan Z. Bartos, *Concerto per Due Boemi*: strs.  
 Jindrich Feld, *Suite concertante*: strs and perc (Ed. Modern, M 1660E).  
 Václav Felix, *Double Concerto*: strs and perc. + + + + + + + + + +  
 Oldrich Flosman, *Symphonic Plays*: symp orch.<sup>ooooooo</sup>  
 Stepán Lucký, *Fantasia concertante*: strs.<sup>ooooooo</sup>  
 Arnost Parsch, *Double Concerto*: symp orch.  
 Alois Pinos, *Double Concerto on B-A-C-H*: strs and perc.  
 Vladimír Soukup, *Sonetti per I Due Boemi*: strs.  
 Milos Stedron, *Concert Scenes*: strs.  
 ——— *Dances of the Renaissance*. \* \* \* \* \*  
 ——— *Folk Songs*: strs.  
 ——— *Planktus*: strs.  
 ——— *Song of Lidice*: strs.  
 Johannes P. Thilman, *Double concerto*: strs and perc.  
 Sláva Vorlová, *Concerto per I Due Boemi*: strs.  
 ——— *Corelationi*: strs.

#### *Concertos for Bass Clarinet, Other Instruments, and Orchestra*

Pavel Blatný, *Uno pezzo per I Due Boemi*: bcl, pf, and jazz big band.  
 Horst Buchsfeldt, *Concertino*: bcl, hrp, strs.  
 Alois Pinos, *Triple Concerto on B-A-C-H*: bcl, vc, pf, strs, perc.  
 Bohuslav Rehor, *Concerto per Musica Nova*: bcl, fl, pf, symp orch.  
 Bernhard Rövenstrunck, *Quadrupel*: bcl, vn, vc, pf, strs.  
 Milos Stedron, *Old and New Gothic Dances*: bcl, pf, and jazz big band.

#### *Bass Clarinet and String Quartet*

Jan Z. Bartos, *Inventioni III*.  
 Manfred Nedbal, *Divertimento II*.



*Bass Clarinet, Piano, and String Quartet*

Jan Z. Bartos, *Concerto*.  
Stepán Lucký, *Concertino*.  
Milos Stedron, *Folk Suite*.  
Sláva Vorlová, *Corelationi III*.

*Bass Clarinet, Piano, and Wind Quintet*

Sylvie Bodorová, *Kovadliny casu*. ++++++++  
Milos Stedron, Frantisek Horák, arr., *Renaissance Suite*: fl, ob, cl, bsn.  
Sláva Vorlová, Frantisek Horák, arr., *Music for Due Boemi*.

*Bass Clarinet and Speaker*

Jirí Bárta, *Song That I Must Write*.  
Paul Kont, *Aus dem Kerker*.  
Thomas Lauck, *Gebet eines Negerjungen*.  
Alois Pinos, *4 Lyric Drawings*.  
Bernhard Rövenstrunck, *Nausikaa*.  
Jirí Smutný, *5 Inventioni*.  
Sláva Vorlová, *The Dancing Faun*.

*Bass Clarinet, Various Instruments, and Speaker*

Pavel Cotek, *Ziehe Kreise . . .*: bcl, pf, speaker.  
Myriam Marbe, *Dialogi*: bcl, pf, speaker.  
Arnost Parsch, *Before Spring*: bcl, fl, pf, speaker.  
Jaroslav Smolka, *Music on Skácel*: bcl, pf, speaker.  
Milos Stedron, *Ich ging die Stille zu Hören*: bcl, pf, speaker.  
—— *Music on Kafka*: bcl, fl, pf, perc, speaker.

*Bass Clarinet, Singer, and Various Instruments*

Josef Bohác, *Songs of Solitude*: sop voice, bcl, pf (Panton, 110738). \*\*\*\*\*  
Ivo Jirásek, *Portrait of a Woman*: sop voice, fl, bcl, pf, perc. °°°°°°°°°°  
Daniel Kremser, *Saluti*: bcl, pf, singer.  
Ladislav Kubík, *Lament of a Warrior's Wife*: sop voice, tape, vla, bcl, pf, perc. °°°°°°°°°°  
Zdenko Mikula, *Mornings*: sop voice, fl, bcl, pf (Artia, Prague). ++++++++  
Jan Novák, *Mimus magicus*: sop voice, bcl, pf.  
Jirí Smutný, *Herbst Impressionen*: voice, bcl, pf.  
—— *Knife of Obsidian*: sop voice, bcl, pf.  
—— *Three Old Songs*: bass, bcl, pf.  
—— *Three Songs of Middle Age*: bcl, pf, male voice.  
Milos Stedron, *Ancient names*: mezzo sop, bcl, pf.  
—— *Confession*: mezzo sop, bcl, pf.  
—— *Songs on Ancient Texts*: mezzo sop, bcl, pf.  
—— *Trium Vocum*: sop voice, bcl, pf.  
Jan Tausinger, *Drawings on the Sky*: sop voice, fl, bcl, pf, perc. °°°°°°°°°°  
Ilja Zeljenka, *Caprice*: sop voice, bcl.  
Zdenek Zouhar, *Trio*: sop voice, bcl, fl.

*Bass Clarinet and Percussion*

Benno Amman, *Coloured Bird*.  
—— *Holland Toy*.  
Roland Boehm, *Saluti a Due Boemi*.  
Zdenek Pololánik, *Musica Spingenta III* (Panton, P441). ++++++++  
Vladimír Soukup, *Predstavy*.  
Milos Stedron, *HOJ*.

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Update

——— *Sequenza*: bcl, marimba.  
Evzen Zámečník, *Model*.  
Pavel Zemek, *Praise of Marriage*.

### *Bass Clarinet and Guitar*

Roland Boehm, *Bits*.  
——— *Rainbow and Clouds*.  
Oldrich Flosman, *Hudba*.  
Josef Masta, *Impressioni*.

### *Authorized Transcriptions*

Pablo Casals, *Solo de concours*: bcl, pf.  
——— *Song of the Birds*: bcl, pf.<sup>oooo\*\*\*\*</sup>  
Kazuo Fukushima, *Three Pieces from Chu-U*: bcl, pf.<sup>oo</sup>  
Paul Hindemith, *Sonata* (1938): bcl, pf.++  
——— *Trio, Op. 47*: bcl, vla, pf.  
Andre Jolivet, *Nocturne*: bcl, pf.  
Frank Martin, *Ballade*: bcl, pf.  
Bohuslav Martinu, *Sonatina*: bcl, pf.  
Oliver Messiaen, *Abîme des oiseaux*: bcl solo.<sup>oo</sup>  
Henri Pousseur, *Madrigal I*: bcl solo.

+Recorded, Supraphon, I II 1700 G.  
++Recorded, Panton, II 0369.  
+++Recorded, Panton, II 0364 H.  
++++Recorded, Supraphon, I 19 2036 G.  
+++++Recorded, Fuga-Helsinki, 3022.  
++++++Recorded, International Composers Record, U.S.A.  
+++++++Recorded, Supraphon, IIII 2838.  
+++++++Recorded, Panton, 8I 06777-10116, and Supraphon, II 19 25946.  
+++++++Recorded, Panton, 8II 0536G.  
+++++++Recorded, Panton, 8III-0279.  
+++++++Recorded, Supraphon, DV 6030, and Supraphon, SUA 18595.  
°Recorded, Panton, II 0614 G.  
°°Recorded, FSM, Carus, 53114.  
°°°Recorded, Deutsche Gram.-Col Legno.  
°°°°Recorded, EGE, F 666 707.  
°°°°°Recorded, NSS, R36 908.  
°°°°°°Recorded, Supraphon, I II 14186 G, and Artia I II 1418.  
°°°°°°°Recorded, Panton, 8IIO 0419, and Panton, 9IIO 0446.  
°°°°°°°°Recorded, Panton, 8IIO 0419ZA.  
°°°°°°°°°Recorded, Panton, II 0490 H.  
°°°°°°°°°°Recorded, Supraphon, I 12 0884.  
\* Recorded, Artia, I II 1390.  
\*\* Recorded, Supraphon, 0 19 0556 F.  
\*\*\* Recorded, Austro Mechana, 200608.  
\*\*\*\* Recorded, Panton, 8III 0229.  
\*\*\*\*\* Recorded, Panton, II 06306.  
\*\*\*\*\* Recorded, Panton, II06 146.  
\*\*\*\*\* Recorded, Panton, II 0707 and II 0439.  
\*\*\*\*\* Recorded, Panton, 090 9994.  
\*\*\*\*\* Recorded, Panton, 8I 0677-10116.  
\*\*\*\*\* Recorded, Panton, 8III-0299.  
\*\*\*\*\* Recorded, Panton, 8II 0001-2.

LÁSÁLO HORVÁTH (Hungary) graduated from the Ferenc Liszt Academy of Music in 1969, studying with György Balassa; he also studied in Paris under Ulysse

Delecluse. Since 1965 he has been the principal clarinetist of the Hungarian State Symphony and has guest-performed in nearly every European country, the U.S.A., Japan, and Australia. He has made recordings with BBC London, with several radio stations (WDR Cologne, ORF Vienna, and so forth). His colleague Béla Kovács, from the Budapest State Opera Orchestra and the clarinetist with the Budapest Chamber Ensemble which performs many contemporary compositions, lists much of the same repertory.

#### *Solo Clarinet*

Escher, *Sonata*.  
Kalmár, *Monologo*.  
Kitazume, *Shadows*.  
Láng, *Monodia*.  
Olah, *Solo Sonata*.  
Pauer, *Monologue*.  
Sári, *Stati*.

#### *Clarinet with Piano*

Durkó, *Three Essays*.  
Hidas, *Fantasy*.  
Kókai, *Four Hungarian Dances*.  
Sárközy, *Chamber Sonata*.  
Sary, *Variations*.  
Schollum, *Three Pieces*.

#### *Concertos*

Durkó, *Hungarian Rhapsody*.  
Hajdu, *Hungarian Capriccio*.  
Sárközy, *Clarinet Symphony*.  
Szervánszky, *Clarinet Serenade*.

DAVID KEBERLE (Italy), born in the United States, has performed in new music festivals and concerts in North and South America, Europe, and the Middle East. Collaborating closely with composers, he has premiered numerous works for the clarinet which have been dedicated to him. Recently he has recorded a complete album of new works for clarinet and bass clarinet for BMG Ariola, Rome. In addition, he has recorded an album of new works for EDI-PAN in Rome and participated in recording sessions at I.R.C.A.M. in Paris and RAI, Italian National Radio. He has written numerous works for traditional and electronically modified instruments and is the co-founder of Electra Vox Ensemble, a live-electronics group based in Rome. He holds two bachelor degrees in music from Indiana University and a masters from the New England Conservatory in Boston.

#### *Solo Clarinet*

Edgar Alandia, *Phucuy* (1982, Edi-Pan).  
Leslie Bassett, *Soliloquies* (1978, Merion Music).  
Luciano Berio, *Sequenza IX* (1980, Universal Edition).  
David Keberle, *Galoppando attraverso il vuoto* (1986, Edi-Pan).+  
Fernando Mencherini, *Crazy Jay Blue* (1986, Edi-Pan).

Paolo Renosto, *Presenza 2* (1975, Ricordi).  
 Giacinto Scelsi, *IXOR II, III, IV* (1956, Salabert).  
 ——— *Pregiera per un'ombra* (1959, Salabert).  
 Gunther Schuller, *Episodes* (1964, Associated Music).  
 Salvatore Sciarrino, *Let Me Die Before I Wake* (1982, Ricordi).  
 Flavio Scogna, *Rondo* (1990, BMG Ariola).\*  
 ——— *Variants* (1961, Universal).  
 William O. Smith, *Seven Haiku* (1988, Edi-Pan).+

#### *Clarinet with Piano*

Nicolas Bacri, *Bagatelles, Op. 12 No. 3* (1985, Edi-Pan).+  
 Luigi Ceccarelli, *Koan I: cl and prepared piano* (1986, Edi-Pan).+  
 Anthony Coleman, *The Kasper in Me* (1985).  
 Jonathan Harvey, *Transformations of "Love Bade Me Welcome"* (1975, Novello).  
 Peter Maxwell Davies, *Hymnos* (1967, Boosey & Hawkes).  
 Tamae Okatsu, *Song of the Little Carp* (1988, Edi-Pan).+  
 Enrico Renna, *Troveró la luna dell'aurora* (1986, Edi-Pan).+  
 Jesus Villa Rojo, *Attrezzo* (1986).

#### *Clarinet and Tape*

Klaus Ager, *CLB 512*.  
 Pierre Boulez, *Dialogue del'ombre double: 8-channel tape and lights* (1986, Universal Edition).  
 Luigi Ceccarelli, *Quanti* (1991, BMG Ariola).\*  
 Robert Ceely, *Synoecy* (1986).  
 Kwok-Ping Chen, *Across* (1983).  
 James Dashow, *Effetti collaterali* (1976, Edi-Pan).  
 Roberto Laneri, *Music in the Form of a Flying Carpet* (BMG, 1991).\*  
 Denis Lorrain, *L'angélus*.  
 Arne Mellnas, *Riflessioni*.  
 James Mobberley, *A Plurality of One* (1982, MMB Music).

#### *Clarinet and Live Electronics*

Alvin Curran, *First Octave: computer, pitch to Midi, sampler and synths* (1991, BMG).\*  
 David Keberle, *Incantation* (1982, Edi-Pan).°  
 ——— *Librato in Volo: computer, pitch to MIDI, sampler* (1991, BMG).\*

#### *Solo Bass Clarinet*

Maurizio Giri, *SPX* (1990).  
 David Keberle, *Reindeer's Romp* (1991, BMG).\*  
 Enrico Renna, *Keb* (1991, BMG).\*

+Recorded, Edi-Pan Pan Prc S20-57.

\* Recorded, CD BMG Ariola, Rome.

°Recorded, Edi-Pan Pan S20 32.

TERJE LERSTAD (Norway) studied with Richard Kjelstrup at the Norwegian Academy of Music and bass clarinet with Harry Sparnaay in Holland; he finished graduate study at the Koninklijk Conservatorium, The Hague, in 1982. He has been E-flat clarinetist in the East Norwegian Military Band, bass clarinetist in the Norwegian Opera, founder of the Bozza Trio and Het Basklarinetten Collectief, soloist with ASKO Ensemble in Holland Festival in 1982, a participant in the So-

loist Festival arranged by the Norwegian section of ISCM, and a member of the Oslo Sinfonietta and the Cikada ensemble. As a composer, he has (so far) written 196 works.

*Works Commissioned by the Bozza Trio (Flute, Clarinet, Bassoon), all Available From NMI (Norwegian Music Information Centre)*

Conrad Baden, *Mini Trio*.  
Olav Berg, *5 Inventions*.  
Bjørn Fongaard, *Trio*.  
Terje Lerstad, *Concertino for Marimba and Trio*.  
——— *Trio*, nos. 1, 2, and 3.  
Robert Rønnes, *6 Stylistic Contrasts*.  
Øistein Sommerfeldt, *Quartet for Marimba and Woodwind Trio*.  
Rolf Wallin, *3-Part Invention*.

*Other Pieces Written for Lerstad*

Tore Amundsen, *A Travel to Berlin*: bcl solo (NMI).  
Morten Gaathaug, *Solissimo*: bcl solo (NMI).  
——— *Two Carnival Pictures from Reality*: b/cb cl & pf (NMI).  
Bjørn Hoemsnes, *Chamber Concept*: bcl & str quart (NMI).  
——— *Patchwork for Clarinet*: A $\flat$  picc/Ccl with tape delay & 2 percs (NMI).+  
Robert Rønnes, *Aventure*: E $\flat$  contra alto cl solo (NMI).  
——— *Clarinet Concerto*: A $\flat$  picc/E $\flat$  alto/B $\flat$  cb & orch (NMI).  
——— *The Old Castle in Chinion*: basset hn & tape delay (NMI).  
——— *1<sup>re</sup> suite pour trio de clarinettes*: B $\flat$ , bass, cb cls (NMI).  
Asbjørn Schaathun, *Actions, Interpolations, and Analyses*: bcl solo and chamber orch;  
work in progress.  
Olav Anton Thommesen, *Points for Contra Instruments*: Eng hn, bcl, contrabassoon  
(NMI).

*Other Works in Mr. Lerstad's Repertory*

Luciano Berio, *Sequenza IXa* (Universal Ed.).  
Harrison Birtwistle, *Linoi*: B $\flat$ cl solo (Universal Ed.).  
Lyell Cresswell, *Hocket*: bcl & 2 tape delays (ms).  
Edison Denisov, *Sonata*: B $\flat$ cl solo (Gerig).  
James Dillon, *Crossing Over*: B $\flat$ cl solo (Ed. Peters).  
Anders Eliasson, *Disegno*: B $\flat$ cl solo (Ed. Reimers).  
Vinko Globokar, *Voix instrumentalisée*: amplified bcl (Ed. Peters).  
André Jolivet, *Ascèses*: B $\flat$ cl solo (Durand).  
Bjørn Kruse, *Syntax*: B $\flat$ cl & 2 percs (NMI).  
Luca Lombardi, *Essay 2*: bcl solo (Zerboni).  
Daan Manneke, *Gesti*: cbcl solo (Donemus).  
Donald Martino, *Triple Concerto*: cl, bcl, cbcl, & orch (Dantalian).  
Peter Maxwell Davies, *The Seven Brightnesses*: B $\flat$ cl solo (Boosey & Hawkes).  
Arne Mellnäs, *Rendez-vous I*: cl & bcl (STIM).  
Tristan Murail, *Allegorie*: fl, cl, hn, vn, vc, perc, synth (Salabert).  
Luis de Pablo, *Oculto*: bcl solo (Zerboni).  
Sergej Pavlenko, *Sonata-Continuo*: bcl solo (ms).  
Enrique Raxach, *Chimaera*: bcl solo (Donemus).  
Magnus Sindberg, "Ur" for 5 Players: cl/bcl, vl, vla, vc, cb, live elect (Wilhelm Hansen).  
Karlheinz Stockhausen, *In Freundschaft*: basset hn solo (Stockhausen Verlag).  
Norman Symonds, *Quintet*: cl, synth (ms).  
Andrew Toovey, *Veiled Wave 2*: bcl solo (Chappel).  
Joji Yuasa, *Clarinet Solitude* (Schott, Japan).

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Lerstad's Own "More Successful" Clarinet Pieces (Available from NMI)

Bass Clarinet Solo.

*Concertino for Marimba and Wind Trio* (fl, B $\flat$ /bcl, bsn).

*Duet for E $\flat$  Clarinet and Contrabassoon.*

*Octet for Harpsichord and 7 winds: recorder, fl, ob, cl (B $\flat$ /contrabass), bsn, contra.*

*Rendez-vous I for E $\flat$  clarinet and tape.*

*Septet for Woodwinds* (2[2]-2[1]-2[1]-2[1]).

"*Suite piccolo*": picc, fl, and A $\flat$  picc cl.

*The Last Serenade in D-sharp Major* (ww octet).

*Three Pieces for Contrabass Clarinet Solo.*

*Toccata for 4 Musicians* (E $\flat$ cl, synth, 2 perc).

*Two Pieces for Clarinet Solo.*

+Recorded: Phillips 411080-1.

Recording (1989)

Olav Berg, *Fantasia breve*: B $\flat$ cl & pf (Norsk Musikkforlag); Robert Rønnes, *Hommage à André Jolivet*: alto cl & pf (NMI); Terje Lerstad, *Lamento*: contrabass cl solo (NMI), and *Fantasy Piece No. 1*: E $\flat$ cl & pf (NMI); Morten Gaathaug, *Tema con variationi*: bcl & pf (NMI); Finn Mortensen, *Sonatina for Solo Clarinet* (Norsk Musikkforlag); Gerhard Klemke, *Oxymoron for Solo Clarinet* (ms); Conrad Baden, *Sonata*: bcl & pf (Musikkhuset). Callisto 85029.

TOMMIE LUNDBERG (Sweden), a specialist in contemporary music for bass clarinet, was formerly bass clarinetist with the Royal Opera Orchestra in Stockholm, and is presently bass clarinetist with the Malmö Symphony Orchestra and a member of Duo Bassclarinet and Piano and the Aquarius Ensemble. He graduated from the Academy of Music in Stockholm, studying further under Tage Scharf in Denmark and Josef Horák and Emma Kovárnová in Czechoslovakia. He is an international soloist and lecturer. Items from his repertory include the following. Mr. Lundberg can be reached c/o MSO, Malmö 20580, Sweden.

Bass Clarinet Solo

Josef Adamik, *Struktures oc the Obsession* (ms, 1983).\*

Milan Báčorov, *Epigramy*.

Jacques Bank, *Stint*.

Jiri Bárta, *Katachrese*.

Jürg Baur, *Sechs bagatellen*.

Ivan Božicević, *Greetings from the East* (ms, 1982).\*

Eberhard Eyser, *Sonatine*.

Levi Faltus, *Contraposizioni*.

Brian Ferneyhough, *Time and Motion Study 1*.++

Vinko Globokar, *Voix instrumentalisée*.

Erland von Koch, *Monolog 3*.

Ladislav Kubik, *Communication*.

Jos Kunst, *Solo Identity 1*.

Alan Leichtling, *Fantasy Piece 1*.

Christer Lindwall, *Blow* (Ed. Qwerty, 1987).\* ++

Lombardi Luca, *Essay 2*.

Olivier Messiaen, *Abîme des oiseaux* (version for bcl by Josef Horák, approved by Messiaen).

Emanuel Planjer, *Solo*.

Jaroslav Pokorný, *The Dump of Tones* (ms, 1980).\*

——— *Seven Long Breaths* (ms, 1980).\*

——— *Zen Etudes* (ms, 1980).\*

Hendrik de Regt, *Musica per clarinetto basso*.  
Karel Reiner, *Marginálie*.  
——— *Notizen*.  
Berhard Rövenstrunk, *Sequenz*.  
Robert Schuck, *Time*.  
Jaroslav Smolka, *Sonata*.  
Klas Torstensson, *Spans*.  
Isang Yun, *Monolog*.

#### *Bass Clarinet and Tape*

Ton de Leeuw, *Mountains*.  
Arne Mellnäs, *Riflessioni*.  
Enrique Raxach, *Chimaera*.  
Karlheinz Stockhausen, *Solo*.  
Horatio Vaggione, *Tar*. ++

#### *Bass Clarinet and Piano*

Jacques Bank, *Last Post*.  
Jirí Barta, *Konfrontace III*.  
Ivo Bláha, *Duo*.  
Pavel Blatný, *Partita 12*.  
Josef Bohác, *Studii concertanti*.  
Rob du Bois, *Fusion pour deux*.  
Stephen Danker, *Three Pieces*.  
Oldrich Flosman, *Rebellen-Sonatine*.  
Christopher Fox, *Nova Tracer* (ms, 1982).\*\*  
Milos Haase, *Capriccio*.  
Miroslav Hlavác, *Duo*.  
Gunnar Jansson, *Rete No. 2*.\*\*  
Ivo Jirásek, *Spektra*.  
Erhard Karkoschka, *Horkov*.  
James Kippen, *Three Pieces*.  
Václav Kucera, *Duodrama*. ++  
Thomas Lauck, *Se vuelve a yo*.  
Theo Loevendie, *Music*.  
Stepán Lucký, *Tre Pezzi*.  
Karl Marx, *Elegie*.  
Jiri Matys, *Hudba pro Due Boemi*.  
Martinsson Rolf, *Triptyk* (Hans Busch Musikförlag AB Lidingö, Sweden, 1988).\* ++  
Pavel Packovský, *Dialog*.  
Arnost Parsch, *Struktury*.  
Herman Rechberger, *Szene Am . . .*  
Hendrik de Regt, *Musica*.  
Karel Reiner, *Konzertstück*.  
Othmar Schoeck, *Sonate*.  
Lubos Sluka, *D-S-C-H*.  
——— *Sonata*.  
Jaroslav Smolka, *Sei poemi per Due Boemi*.  
Vladimir Soukup, *Sonety*.  
Paul Termos, *Nieuw Werk*.  
Johannes Thilman, *Gestalten*.  
Sláva Vorlová, *Miniatury*.

#### *Bass Clarinet, Piano, and Tape*

Ton Bruynel, *Looking Ears*.  
Miroslav Hlavác, *Musica diafonica*.  
Jaroslav Pokorný, *Nocturne* (ms, 1981).\*\*

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### *Bass Clarinet and Percussion*

Rob du Bois, *Tracery*.  
Jiri Dvoráček, *Meditazione*.  
Magne Hegdal, *Ghost Music*.  
Ladislav Kubik, *Due episodi* (+ pf).  
Jiri Laburda, *Kasace Nr 3*.  
Ivana Loudova, *Duo concertante*.  
Zdenek Pololánik, *Musica spingenta III*.  
Jarmo Sermilä, *Clockwork Etudes*.  
Milan Slavický, *Prosvetlani II* (+ pf).  
Eugen Wendel, *Diason*.

### *Bass Clarinet, Soprano Voice, and Piano (Aquarius Trio)*

Snorri Birgisson, *Oratorium*.  
Josef Bohác, *Gesänge die Einsamkeit*.  
Christopher Fox, *Ci-Git* (ms).+  
Ulf Grahn, *The Secret of the Moon* (SMIC).+  
Staffan Hedin, *Livsgeråd* (ms).+  
Christer Lindwall, *Twang* (Ed. Qwerty).+  
Jan W. Morthenson, *Frühlingslied* (Ed. Reimers).+  
Kjell Perder, *Oppose* (SMIC).+  
Bo Rydberg, *Innocence in iron* (Ed. Qwerty).+  
Milos Stedron, *Trium vocum*.  
Zeljenska, *Laune*.

[The Aquarius Trio comes from within the Aquarius Ensemble. An important facet of their work includes "Life Journey," with artist Stig Carlsson and with support from the Governmental Council of Arts: "A journey through light and darkness, where we meet ourselves in joy and in sorrow. An interpretation of the cycles of life with the help of tone, colour and form. In a room setting, consisting of nine panels, the audience with the music as a guide experiences a sensual and tactile journey through life's symbolic landscape. The goal of the project is to cross the border between the art forms where expressions and impressions will forge a connection between the experiences of the eyes and the ears." Commissions in 1991 for the Aquarius Trio include Aldo Clementi, Sten Hansson, and Ivana Loudova.]

### *Bass Clarinet and String Quartet*

Eberhard Grosskopf, *Lied*.  
Tristan Keuris, *Concertino*.  
Stepán Lucký, *Sextett* (+ pf).

### *Diverse Compositions with Bass Clarinet*

Ivan Bozicevic, *Rivers, Like in a Dream*: bcl, organ (ms, 1983).\* -- --  
Aldo Clementi, *Berceuse*: bcl, vla, vc, pf.++  
Bo Rydberg, *Sultana*: vn, cv, bcl (Ed. Qwerty, 1983).\* ++  
Arne Mellnäs, *Rendez-vous 1*: cl, bcl.  
Leos Janáček, *Mládí*: wind quint and bcl.

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### *Bass Clarinet and Orchestra*

Oldrich Flosman, *Symphonic Plays* (+ pf).  
Bo Linde, *Pezzo Concertante*.  
Theo Loevendie, *Incantations*.  
Stepán Lucký, *Fantasia concertante* (+ pf).  
Enrique Raxach, *Sorée Musicale* (+ women's choir).  
Karel Reiner, *Concerto* (+ perc).



- \* Dedicated to Lundberg.
- \*\* Dedicated to Lundberg and Olle Sjöberg.
- + Written for the Aquarius Trio.
- ++ Recorded by Lundberg, Fylkingen Records: "Blow" (FyCD 1001).

ELSA LUDEWIG-VERDEHR (U.S.A.) studied at the Oberlin Conservatory of Music and at the Eastman School of Music, from which she received a Performer's Certificate and a Doctor of Music Arts degree. She has performed at numerous International clarinet congresses held in Denver, Pittsburgh, Seattle, Baltimore, and London and has given lectures and master classes as well. She has also participated in several Marlboro Music festivals and tours. As a member of the Verdehr Trio, she makes annual United States and European tours and has performed also in Canada, Central and South America, India, Pakistan, Indonesia, Asia, Australia, Egypt, Turkey, and the Soviet Union. She has been invited to the People's Republic of China three times, where she has given master classes at the conservatories of Shanghai, Beijing, Chengdu, and Xian. Recently she received the Distinguished Professor Award from Michigan State University. Her work with the Verdehr Trio, together with her husband Walter, has included the commissioning of the following works for clarinet, violin, and piano (works are in manuscript unless otherwise noted):

### *Repertory*

- Alexander Arutiunian, *Suite* (1992).
- William Averitt, *Tripartita* (1989).\*\*\*\*
- Leslie Bassett, *Trio* (1980, C. F. Peters).\*\*
- Radek Boschetti, *Bagatelles* (1989).
- Nathan Currier, *Enthropic Developments* (1990).
- *Variations* (1987).\*\*\*\*
- Narongrit Dhamabutra, *Chakra* (1990).
- T. C. David, *Carmen Fantasy* (with orch, 1990).
- *Duo* (cl, vn, 1990).++
- *Schubertiade* (1987).
- *Trio Concertante* (with wind symp, 1986, Doblinger).
- *Trio No. 1* (1978, Doblinger).+
- *Trio No. 2* (1990, Doblinger).
- *Triple Concerto* (with orch, 1984, Doblinger).+++
- Jon Deak, *Lad, a Dog: The Trio* (1991).
- Peter Dickinson, *Hymns, Rags, and Blues* (1985, Novello).+++++
- Gottfreid von Einem, *Trio, Op. 97* (1992).
- Dieter Einfeldt, *Haydn Triptychon* (3 trios, 1979–81).
- Ivan Eröd, *Trio, Op. 59* (1992, Doblinger).
- Yelena Firsova, *Verdehr Terzett* (1991, G. Schirmer).
- Viktor Fortin, *Mendelssohniana* (1988).
- Don Freund, *Triomusic* (1980).++
- Ge Gan-ru, *Si* (1990).
- Ida Gotkovsky, *Trio* (1985, Billaudot).\*\*\*\*\*
- Karl Haidmayer, *Trio No. 7* (1988).
- Charles Hoag, *Inventions on the Summer Solstice* (1979).\*\*
- *Sweet Melancholy Rag* (1990).+++++
- Sydney Hodkinson, *Trio: Epitaph and Scherzo* (1989).
- Katherine Hoover, *Images* (1981).\*\*
- Alan Hovhaness, *Lake Samish* (1988).\*\*\*
- Karel Husa, *Sonata a tre* (1982, Schirmer).\*

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Jere Hutcheson, *Nocturnes of the Inferno* (1977).+  
 Tomas Marco, *Trio* (1990).  
 Richard Mills, *Four Miniatures* (1992).  
 Thea Musgrave, *Pierrot* (1985, Novello).++++  
 James Niblock, *Paganiana* (1986).  
 ——— *Suite on Medieval Themes* (1990).  
 ——— *Trio* (1980).\*\*\*\*  
 David Ott, *Ebbrovory* (1992).  
 Thomas Pasatieri, *Theaterpieces* (1986).\*\*\*  
 Ned Rorem, *End of Summer* (1985, Boosey & Hawkes).++++  
 Armand Russell, *Dances and Songs of Change* (1989).  
 Vojtech Saudek, *Lullaby* (1989).  
 Gunther Schuller, *A Trio Setting* (1990, G. Schirmer).\*\*\*\*  
 Peter Sculthorpe, *Dream Tracks* (1992).  
 Stanislaw Skrowaczewski, *Triple Concerto* (1992).  
 Dimitri Smirnov, *Trinity Music* (1991, G. Schirmer).  
 William O. Smith, *Trio* (1985).  
 William Wallace, *Trio concertante* (1986).  
 James Wintle, *Essodio* (1986).  
 ——— *Phantasie Satz* (1990).

+ Recorded, Crystal Records, LP S644.  
 ++ Recorded, Leonarda Records, LPI 122.  
 +++ Recorded, Amadeo, 423-733-I.  
 ++++ Recorded, Crystal Records, *The Making of a Medium*, vol. 2, CD 742.  
 +++++ Recorded, Crystal Records, *The Making of a Medium*, vol. 4 CD (in process).  
 \* Recorded, Crystal Records LP S648.  
 \*\* Recorded, Leonarda Records, CD LE326.  
 \*\*\* Recorded, Crystal Records, *The Making of a Medium*, vol. 1, CD 741.  
 \*\*\*\* Recorded, Crystal Records, *The Making of a Medium*, vol. 3 CD (in process).  
 \*\*\*\*\* Recorded, Corelia, CC 890680.

Newly commissioned composers (1992–94) include Alexander Arutiunian, William Bolcom, Joseph Castaldo, Edison Denisow, Donald Erb, Gottfried von Einem, Lukas Foss, Libby Larson, Philippe Manoury, Gian Carlo Menotti, Richard Mills, David Ott, Wolfgang Rihm, Peter Schickele, Peter Sculthorpe, Tyson Street.

### *Solo Recordings*

*Unaccompanied Solos for Clarinet*, vol. 4, Mark Records, MES 38084 (Bassett, *Soliloquies*, and Desportes, *La naissance d'un papillon*).  
 Grenadilla Records GS 1018 (Castelnuovo-Tedesco, *Sonata*; Carter, *Pastoral*; and Frohne, *Study for Clarinet Solo*, Op. 17).

ERIC P. MANDAT (U.S.A.) received degrees in clarinet performance from the University of North Texas, the Yale School of Music, and the Eastman School of Music; his principal clarinet teachers were Charles Neidich, Stanley Hasty, Keith Wilson, Lee Gibson, and Richard Joiner. In 1984 he won first prize at the National Association of Composers, U.S.A. Young Performers Competition for new American music held at the Arnold Schoenberg Institute in Los Angeles, and he was a prize winner at the 1983 International Clarinet Competition in Denver. He has presented recitals and lectures throughout the United States featuring new American music and extended performance techniques. Recent performances include a solo concert of his own music at New Music Chicago's Spring Festival '89, where he was designated the "Critic's Choice" for the entire festival by the *Chicago*

*Reader*; New Music Chicago's Spring Festival '90; the 1986 ASUC Conference in Toronto; NACUSA concerts in New York and Los Angeles; and appearances as a guest soloist at the 1982, 1989, and 1991 Clarinet Fest International. In May 1991 he was visiting artist at the Jazeps Vitols Academy of Music in Riga, Latvia. He is associate professor of Clarinet at Southern Illinois University at Carbondale, where he performs regularly with the New American Woodwind Quintet and the Tone Road Ramblers, a sextet specializing in experimental music. The following is a "selected" repertoire list:

#### *Solo Clarinet*

- L. Berio, *Sequenza IX* (Universal).  
 M. Bialosky, *Intervals and Interludes* (1980, Sanjo Music).  
 V. Bucchi, *Concerto* (1969, Ricordi).  
 B. Childs, *Instant Winners*: Ebcl (ms).  
 Tom Flaherty, *Three Pieces for Clarinet*: solo cl (1982, ms).\*  
 Andre Laporte, *Reflections (Inner Space Music)* (1970, J & W Chester).  
 E. Mandat, *Folk Songs*: solo cl (1986, Cirrus Music).\*  
 ——— *The Jungle*: solo cl (1989, Cirrus Music).\*  
 ——— *Music Box* (1989, Cirrus Music).  
 ——— *Tricolor Capers*: solo cl (1980, Cirrus Music).\*  
 D. Martino, *A Set for Clarinet* (1950, McGinnis & Marx).  
 Shulamit Ran, *For An Actor* (Th. Presser).  
 Wm. O. Smith, *Variants* (1961, Universal).  
 Frank Stemper, *Clarinet Piece* (1985, ms).\*  
 Joji Yuasa, *Clarinet Solitude* (Schott).  
 Imants Zemzaris, *Balss* (Cirrus Music).

#### *Clarinet and Tape (With or Without Piano)*

- James Primosch, *Icons*: cl, pf, tape (ms).  
 ——— *Particles*: cl & tape (ms).  
 D. Ward-Steinman, *The Tracker*: cl, pf, tape.

#### *Clarinet and Piano*

- Ross Edwards, *The Tower of Remoteness* (Faber).  
 Verne Reynolds, *Four Caprices* (Southern Music).  
 Frank Stemper, *Second Diary* (ms).

#### *Other*

- Ned Rorem, *Ariel*: sop voice, cl, pf (Boosey & Hawkes).  
 Wm. Sydeman, *Music for Oboe and B♭ Clarinet* (Peer Int'l).  
 Iannis Xenakis, *Charisma*: cl, vc (Salabert).

\* CD Recording, Advance Recordings, FGCD-32.

International  
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IAN MITCHELL (England) studied privately with John Maclean, and then with Alan Hacker at the Royal Academy of Music in London, where he graduated with distinction. Concentrating since his graduation in 1970 on the solo and chamber music repertoire, he has toured widely presenting concerts of new music, with many pieces written for him, throughout Europe, in Australia, Turkey, the United States, and North Korea. In 1984 he gave the world premiere of Cornelius Car-

dew's *Mountains*. He has also toured his own realization of Stockhausen's *Little Harlequin* for dancing clarinetist. He has worked with the BBC Symphony Orchestra, London Sinfonietta, Monteverdi Orchestra, Fires of London, Dreamtiger, Gavin Bryars Ensemble, and others. He is a founding member and present director of the ensemble Gemini and is a member of the improvising group AMM, with whom he recently recorded Tom Phillips's *Irma*. He has also recorded with Gemini and the Michael Nyman Band.

*Some Items from the Repertoire of Ian Mitchell*

- David Blake, *Arias*: solo cl (1979, Novello).  
 Martin Butler, *Capristano Song*: cl, pre-rec tape (1984, Oxford University Press).  
 Gavin Bryars, *Allegrasco*: cl, pf (1983, Mnemonic, London).  
 Diana Burrell, *Untitled Composition*: cl, vc (1988, United Music Publishers Ltd.).  
 Cornelius Cardew, *Mountains*: bcl (1977, Forward Music Ltd.).  
 Charles Dakin, *Anthemoessa*: 2 cls, vc (1987, Lane Cottage, Norbury, Bishop's Castle, Shropshire, England).  
 Jacqueline Fontyn, *Controverse*: cl, perc (1983, Bote & Bock).  
 Erika Fox, *Epitaph for Cathy*: basset cl in A dbl 3 gongs and 3 drums (1980, 394 Goldhawk Road, London W6 OSB, England).  
 Janet Graham: 3 *Pieces*: bcl, pf (1977, 49 Burleigh Road, St. Albans, Herts ALI SD8, England).  
 Jonathan Harvey, *Be(com)ing*: cl, pf (1979, Faber Music).  
 ——— *Transformation of "Love Bade Me Welcome"*: cl, pf (1968, Novello).  
 Nicola LeFanu, *Invisible Places*: cl, str quart (1986, Novello).  
 ——— *Lullaby*: cl, pf (1988, Novello).  
 ——— *Trio 2*: sop voice, cl/bcl, vc (1983, Novello).  
 Max Lifchitz, *Yellow Ribbon #6*: cl solo (1986, 862 West End Ave., New York, NY 10025).  
 Jonathan Lloyd, *The Mill of Memories*: cl, vc (1986, Boosey & Hawkes).  
 Ivana Loudová, *Air*: bcl, pf (1972, G. Schirmer).  
 ——— *Aulos*: bcl (1976, G. Schirmer).  
 Elizabeth Maconchy, *Fantasia*: cl, pf (1980, Chester Music).  
 James MacMillan, *Litanies of Iron & Stone*: cl, sop sax, trb, tape (1987, Universal Ed.).  
 Edward McGuire, *Prelude 9*: cl, tape delay or 3 cls (1982, Scottish Music Publishing).  
 ——— *Soundweft*: cl solo (1986, Scottish Music Publishing).  
 ——— *Springsound*: cl, pre-rec tape (1979, Scottish Music Publishing).  
 Arne Mellnäs, *Riflessioni*: cl, pre-rec tape (1981, Ed. Reimers).  
 Michael Parsons, *Kucinata* (Macedonian Dance): cl, drum (1988, 148 Fellows Road, London NW3, England).  
 ——— *Nani me marice* (Macedonian Song): cl, perc (1989, ms).  
 Henri Pousseur, *Hermes I*: cl solo (1986, Ed. Suvini Zerboni).  
 Howard Skempton, *Call*: cl solo (1983, ms).  
 ——— *A Card for Lucy*: cl solo (1979, Flat 11, 11 Warwick Place, Leamington Spa, CV32 5BS, England).  
 ——— *Lullaby*: cl, vc (1983, ms).  
 ——— *Melody for a First Christmas*: cl solo (1979, ms).  
 William O. Smith, *Reflections*: cl and voices (1985, 5607 16th Ave., Seattle, WA 98105).  
 William Sweeney, *An Óg-mhadainn*: basset cl in A with obbligato accomp (1979, Scottish Music Publishing).  
 ——— *Life Studies*: cl, pf (1979, Scottish Music Publishing).  
 ——— *Nine Days: Piobaireachd for Clarinet*: cl solo (1986, Scottish Music Publishing).  
 Gabriela Ortiz Torres, *Divertimento*: cl solo (1985, Universidad De Granajuato, Mexico).  
 Errollyn Wallen, *It All Depends on You*: sop voice, cl/bcl, cl/sop sax, tape, elect (1989, 37 Coltman House, Welland St., London SE10 9DW, England).  
 Judith Weir, *Sketches from a Bagpiper's Album*: cl, pf (1984, Novello).  
 John White, *A Little Souvenir from Costa Mijas*: bcl, pf (1989, 16 Queen's Road, Edmonton, London N9 ORB).

Peter Wiegold, *Frog Hunt*: basset cl in A (1981, 82 Lordship Park, London N16 5UA).  
 Christian Wolff, *Dark as a Dungeon*: cl solo (1977, G. Schirmer).  
 ——— *Isn't This a Time*: cl or cls (1981, G. Schirmer).  
 Douglas Young, *Symbols of Longevity*: cl solo (1982, Ricordi).  
 ——— *Ten Short Symbols*: cl solo (1983, Ricordi).

All items require B-flat clarinet unless stated.

PHILLIP REHFELDT (U.S.A.) is professor of Clarinet and teaches courses in music literature and musicology at the University of Redlands in California. He performs with the Tahquitz Wind Quintet, the Redlands Symphony Orchestra, and, as a woodwind doubler, with the San Bernardino Civic Light Opera. His solo performances in new music include the Monday Evening Concerts, the ClariNetwork and International Clarinet Clinic/Symposia, American Society of University Composers conferences, the International Computer Music Conference, the Arcosanti Arts Festival, and the 1980 World Music Days (ISCM) in Israel, and, with composer Barney Childs, concerts and recordings of specially commissioned works, *New Music for Clarinet and Friend*. In addition to *New Directions for Clarinet*, his publications include books and music editions involving clarinet and woodwind pedagogy. His teachers include Samuel Fain, Kalman Bloch, and William Stubbins. He holds a Doctor of Musical Arts degree in clarinet performance from the University of Michigan. He has recorded on Advance, Brewster, Capstone, CRI, Desto, Edi-Pan, Grenadilla, Leonarda, Roncorp, Society of Composers, and Zanja labels.

#### *New Music for Clarinet and Friend Commissions*

Burton Beerman, *Dance Figures*: cl, pf, tape (1985, ACA).  
 Warren Benson, *Prelude and Postlude*: cl, reader (1989, Carl Fischer).  
 Marshall Bialosky, *Tetra-Music*: cl, pf (1982, Sanjo Music).  
 Harold Budd, *In Delius' Sleep*: cl/perc, pf (1974, ms).  
 Stephen Chatman, *Gossamer Leaves*: cl, pf (1981, ms).  
 Barney Childs, *Sunshine lunchh, & like matters*: bcl, reader (1983, ms).\*  
 Tom Cleman, *For Clarinet and Piano*: cl, pf (1974, ms).  
 Paul Cochran, *Drone Fantasy*: cl, pf (1974, Seesaw).  
 David Cohen, *Ceremony*: cl, reciter/perc, and illuminated glass object (1981, ms).  
 Peter Racine Fricker, *Spirit Puck*: cl, perc (1974, ms).\*\*  
 Glenn Hackbarth, *Underworld*: cl, pf, tape (1984, ms).  
 Christopher Hobbs, *Rites of Passage*: cl, pf/perc (1982, ms).  
 Michael Horvit, *Antiphon II*: cl, tape (1974, Shawnee).+  
 Jonathan Kramer, *Renascence*: cl, recorded tape delay (1974, ms).++  
 Daniel Lentz, *The Redlands Codex*: unspecified wind and keyboard instruments (1977, ms).  
 Wendell Logan, *Duo Exchanges*: cl, perc (1978, ms).  
 Edwin London, *Psalm of These Days IV*: cl, reciter, tape (1978, Ed. Peters).\*\*  
 David Maslanka, *Three Pieces*: cl, pf (1975, ms).—  
 Ron Pellegrino, *Phil's Float*: cl, film, tape or synth (1974, ms).  
 William Penn, *Nine Songs from the Rubaiyat*: cl, pf/reader (1974, ms).\*  
 Alexandra Pierce, *Buffalo Bill*: cl, pf/reciter, tape (1978, ms).  
 John Donald Robb, *Triangulum*: cl, pf (1978, ms).  
 Michael Sahl, *Memorial*: cl, pf (1978, ms).  
 Elliott Schwartz, *Reading Session*: cl/reader, pf/reader (1983, ACA).\* — — —

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William O. Smith, *Soliloquy*: cl, tape delay (1978, Edi-Pan).  
 Larry Solomon, *The Great Learning*: cl, pf (1988, ms).  
 John Steinmetz, *Odiepundle VI*: cl and friend (1980, ms).  
 William J. Sydeman, *Three Occasions*: cl, reader (1984, ms).\*  
 Victor Saucedo Tecayehuatzin, *Ran. I.X.*: cl, tape (1976, ms).+  
 David Ward-Steinman, *The Tracker*: cl, fortified pf, tape (1976, ms).--  
 Olly Wilson, *Echoes*: cl, tape (1974, Gunmar/Margun).---

\* Recorded, *New Music for Clarinet and Friend*, Advance Recordings, FGC 29S, 1988.  
 \*\* Recorded, *Phillip Rehfeldt*, Roncorp Educational Series, EMS 021.  
 + Recorded, *Music for Clarinet and Tape*, Grenadilla, GS 1017.  
 ++ Recorded, Leonarda, LE 332 (CD).  
 - Recorded, Composers' Recordings, Inc., CRI 438.  
 -- Recorded, Society of Composers, SCI-9.  
 --- Recorded, Composers' Recordings, Inc., CRI 367.  
 ---- Capstone, CPS-8609 CD.

### Other Recordings

*American Music for Woodwind Quintet*: Douglas Moore, *Quintet for Winds*; Elliott Carter, *Woodwind Quintet*; John Cage, *Music for Wind Instruments*; Edwin London, *Woodwind Quintet*. Advance Recordings Cassette Series, FGC-22S (1976).  
 James Dashow, *Effetti collaterali*. Casa Discografica Edi-Pan, PRC S 20-12 (1984).  
*New Music for Clarinet I & II*: Burton Beerman, *Sensations for Clarinet and Tape*; Elliot Borishansky, *Two Pieces for Unaccompanied Clarinet*; Barney Childs, *Barnard I*; Peter Griffith, *Classic for Clarinet and Laser*; M. William Karlins, *Solo Piece with Passacaglia*; Donald Martino, *A Set for Clarinet & B,A,B,B,IT,T*; Edward J. Miller, *Piece for Clarinet and Tape*; Gerald Strang, *Sonatina for Clarinet Alone*; William Sydeman, *Music for Oboe and B-flat Clarinet*. Advance Recordings Archival Cassette Series, FGR-9 and 11 (1972, 90 min. combined re-issue).  
*New Music for Solo Clarinet*: John Cage, *Sonata for Clarinet (Solo)*; Arline Diamond, *Composition for Clarinet*; Ernst Krenek, *Monologue for Clarinet Solo*; Donald Martino, *A Set for Clarinet*; Donald Scavarda, *Matrix for Clarinetist*; Charles Whittenberg, *Three Pieces for Clarinet Solo*. Advance Recordings Archival Cassette Series, FGR-4 (1965).  
*Redlands Music for Clarinets*: Barney Childs, *A Music: That It Might Be . . .*; Christopher Hobbs, *Six Preludes and Five Chorales*; Alexandra Pierce, *Job 22:28*. Zanja Records (c/o Advance Recordings), ZR-2 (1979).

### Etudes for the Twenty-first-Century Clarinetist

Phillip Rehfeldt, ed. (1990, MillCreekPublications). This collection contains a variety of works ranging from bona fide study materials to full-fledged compositions suitable for public performances. All works were written specially for the anthology, which is also a *festschrift* for composer Barney Childs "on the occasion of his sixty-fourth birthday from his colleagues and former students." All works are for solo clarinet (and when the occasion calls for it, tape). A double cassette recording of all the works in the anthology, performed by Phillip Rehfeldt, accompanies the collection.

#### Contents

Barney Childs, *Grande fantasia de concert* ("Masters of the Game").  
 Burton Beerman, *Evening Songs*.  
 Marshall Bialosky, *Letters in a Name*.  
 John Casken, *Quick Foot Shaken*.  
 Francisco J. Castillo, *Monologue*.  
 Bob Clarida, *Pop's New Jack Bag*.  
 Tom Cleman, *Slow Stuff*.  
 Rick Cox, *Mr. Rick's 2-Bit Arpeggio Study*.  
 James Dashow, *Un primo frammento di anti-post-neo-romanticismo*.

F. Gerard Errante, *Fantasy for Barney*.  
 Gino Robair Forlin, *Behind Sly Arc*.  
 Jim Fox, *Exposure*.  
 Christopher Hobbs, *Study for B.C.*  
 Sydney Hodgkinson, . . . *à la valse* . . .  
 Ben Johnston, *Ponder Nothing*.  
 Gregory Kosteck, *Chromatic Fantasy*.  
 Jonathan D. Kramer, *Another Anniversary*.  
 Eric Mandat, *Etude for Barney*.  
 David Maslanka, *Little Symphony (in Four Movements)*.  
 John McCabe, *January Sonata*.  
 Read Miller, *The Only One in Saint Ann's Bay*.  
 Alexandra Pierce, *Ornaments*.  
 Andy Rehfeldt, *Flashbacks*.  
 Phillip Rehfeldt, *Passacaglia and Multiphonics*.  
 Victor Saucedo, *Trail Boss (Ridin' Night Herd)*.  
 Phillip Schroeder, *Smooth Stretch*.  
 Elliott Schwartz, *Mirrors for Barney and Arney*.  
 William O. Smith, "64."  
 Larry Solomon, *Transcendental Etude*.  
 Greg Steinke, *Don't We (Image Music VII)*.  
 John Steinmetz, *Intention Study*.  
 Robert Stewart, *Variations for Solo Clarinet*.  
 Scott Vance, *Intonation*.  
 David Ward-Steinman, *Etude on the Name of Barney Childs*.  
 John White, *Conversation Piece*.  
 Peter Winkler, *Solitaire*.  
 Phil Winsor, *Rhetorics*.

ALBERT RICE (U.S.A.) studied with Kalman Bloch, Mitchell Lurie, and Rosario Mazzeo and finished an M.A. in music performance and a Ph.D. in musicology at the Claremont Graduate School, Claremont, California. From 1977 to 1979 he played with the Jugenstil Trio (clarinet, violin, and piano) and since 1980, he has played with the Almont Ensemble, whose instrumentation includes violin, viola, cello, piano, and clarinet. His publications include several articles concerning eighteenth- and nineteenth-century clarinets and a book, *The Baroque Clarinet*, published in 1991 by Oxford University Press. Currently, he also works as a professional appraiser of musical instruments and is the curator of the Kenneth G. Fiske Museum of Musical Instruments at the Claremont Colleges.

#### *Recent and Commissioned Works*

Alonzo Alexander, *Convergencia Sonora*: cl, vn, vla, vc, pf (1988, ms).  
 Gilbert Amy, *D'un désastre obscur*: sop voice, cl (1971).  
 Marshall Bialosky, *Two Against One*: cl, vla, pf (1989, ms).  
 ——— *Two Movements*: str trio, cl, pf (1989, ms).  
 Henry Brant, *Invisible Rivers*: Ebcl/bcl, vn, vla, va, pf, cb (1987).  
 Valentino Bucchi, *Concerto*: cl solo (1969).  
 Frank Campo, *Quintetto vicentino*: cl, vn, vla, vc, pf (1984, ms).+  
 ——— *Sonetti*: cl, pf (1990, ms).  
 ——— *Three Little Duets*: cl, vla (1981).  
 ——— *Trio*: cl, vc, pf (1988, ms).  
 Friedrich Cerha, *Fünf kleine Stücke*: cl, pf.  
 Paul Chihara, *Quartet*: cl, strs (1985).  
 John Crawford, *Calvaries of Love*: sop voice, cl, vc, pf (1980).  
 Arthur Custer, *Pastorale and Hornpipe*: vn, cl, pf (1969).

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- Bruce Fithian, *3 Songs of Emily Dickinson*: tenor, vn, vla, vc, cl, pf (ms).  
 Tom Flaherty, *Asylum Piece*: mezzo sop, cl, vn, vla, vc, pf (1982).  
 ——— *Quintet "Good Times"*: cl, vn, vla, vc, pf (1984, ms).\*  
 ——— *Three Pieces for Clarinet* (1984).  
 Peter Racine Fricker, *Bagatelles*: cl, pf.  
 Berthold Goldschmidt, *Quartet*: cl, str trio (1985).  
 Roger Hannay, *Fantôme*: cl, vla, pf.  
 George Heussenstamm, *Largo*: cl, vn, vla, vc, pf (1984, ms).\*  
 Daniel Kessner, *Droning*: cl, vla (1988, ms).  
 Karl Kohn, *Before Beethoven*: cl, vc, pf (1989, ms).  
 ——— *Pantomime*: cl, vn, vla, vc, pf (1987, ms).  
 ——— *Reflections*: cl, pf (1970).+  
 ——— *San Gabriel Set*: cl, vn, vla, vc, pf (1984, ms).+  
 William Kraft, *Gallery 45*: cl, vn, vla, vc, pf (1985).  
 Morten Lauridsen, *Cuatro canci nes sobre poes as de Federico Garca Lorca*: sop voice, cl, vc, pf (1988).  
 Robert Hall Lewis, *Diversioni*: cl, vn, vla, vc, pf (1988, ms).  
 ——— *Trio*: vn, cl, pf (1966).  
 Robert Linn, *Duo*: cl, vc.  
 ——— *Variations*: cl, pf (1988, ms).  
 Ursula Mamlok, *Rhapsody*: cl, vla, pf (1989).  
 Donald Martino, *Trio*: vn, cl, pf.  
 Gladys Nordenstrom, *Trio*: vn, cl, pf (1978, ms).  
 Randolph Peter, *Yadthrib eepah*: cl, vc, pf (ms).  
 Sid Robinovitch, *Three Winter Songs*: cl, pf (1981, ms).  
 Martin Rokeach, *A Hotel Room*: sop voice, cl, gtr (1979, ms).  
 ——— *Scherzo*: cl, gtr (ms).  
 Ted Schreffler, *Concertino*: cl, str quart (1982, ms).++  
 Malcolm Seagrave, *Trio Sonatina*: vn, cl, pf (ms).  
 Clare Shore, *Canonic Polemic*: cl, vc, pf (ms).  
 Elie Siegmeister, *Prelude, Blues, and Finale*: cl, vla, pf.  
 Klement Slavicky, *Trialog*: vn, cl, pf (1968).  
 Frank Stemper, *Chameleon*: cl, vn, vla, vc, pf (1984, ms).  
 Steven Stucky, *Quartet*: cl, vla, vc, pf (1973, ms).
- + Recorded, Klavier, 7033, 1986.  
 ++ Recorded, Chrome Arts, CA 001, 1984.  
 \* Recorded, Klavier, 7037, 1989.

LUIS ROSSI (Chile), an Argentine by birth, was described by Pamela Weston in *Clarinet Virtuosi of Today* as the only top player in the world performing with instruments of his own design and construction. He studied in Buenos Aires with Martin Tow and in London with John McCaw. He has collaborated with artists such as Chicago Symphony concertmaster Ruben Gonzalez and the Amadeus Quartet. He has performed throughout South America and in important concert halls of Spain, France, Belgium, Holland, Germany, Austria, and Switzerland, recording for Radio Zurich and Spanish television. His regular master classes in Argentina, Peru, Brazil and Costa Rica have produced an outstanding generation of clarinetists. Since 1982 he has concentrated his teaching activities in Caracas, Venezuela, the center of the most extensive movement for young musicians in South America today. He has performed a recital of South American music at the 1991 International Clarinet Festival, Flagstaff, Arizona, U.S.A. He lists the following works by South American composers:



## Repertory

- Andrés Alcalde, *Mon cher lit*: cl & pf (1984, ms).+\*  
Blas Atehortúa, *Concierto N. 1, Op. 161*: cl & orch (1990, ms).  
——— *Concierto N. 2, Op. 168*: cl & orch (1990, ms).+\*  
——— *3 Piezas, Op. 165, N. 1*: cl solo (1990, ms).+\*  
Alejandro Guarello, *Solitario*: cl solo (1980, ms).+\*  
Carlos Guastavino, *Sonata*: cl & pf (1970, Ed. Lagos, Buenos Aires).+  
——— *Tonada y cueca*: cl & pf (1965, ms).+\*  
Cirilo Vila, *Tonada para el transeúnte*: cl solo (1979, ms).+\*

+Dedicated to Rossi.

\* Premiered by Rossi.

DAVID SMEYERS (Germany), born in 1952 in Detroit, Michigan, took musical studies at the Juilliard School, New York, and as a Fulbright scholar in France. From 1977 to 1985 he was a member of the Parisien Ensemble Kaleidocollage. He has worked with ensemble 13, musique vivante (Paris), Ensemble Köln, trial + error, and since 1986 has been a member of the Stuttgart new music group avance. He was a prize winner at the international clarinet competitions in Toulon (1979) and Paris (1983). He has performed many premieres.

BEATE ZELINSKY (Germany), born in 1956 in Hanover, studied at the Musikhochschule in Hanover (clarinet with Hans Deinzer), was a member for several years of the Junge Deutsche Philharmonie and various chamber orchestras, including Ensemble Modern, ensemble 13, and Ensemble Köln. She participated in numerous festivals and concerts as soloist and with chamber music ensembles in Europe and the United States, as well as radio, record, and television productions. Together, she and David Smeyers form the ensemble Das Klarinettenduo.

## Das Klarinettenduo Repertory

- Richard Rodney Bennett, *Crosstalk*: 2 B♭cls (Universal Ed.).  
Stephan Betz, "*Sprache ist k-eine Handlung*": B♭cl, B♭/bass/contral cl (1989, Sonoton, Munich).\*  
Helmut Bieler-Wendt, *ZZWT*: A♭/E♭/bhn, D/A/contrabass cl (1985, ms).  
Allan Blank, *Bicinium III*: Acl, bcl (1987, Sonoton, Munich).\*  
Ingolf Dahl, *Five Duets*: 2 B♭cls (1970, Boonin)  
Yann Diederichs, *Zitat*: Acl, bcl (1986, ms).  
Bojidar Dimov, *Rituals for Clarinet Duo—A Work in Progress*: A♭/E♭, B♭/bass/contrabass cl (1985, ms).  
——— *Trio Rituals*: B♭cl, bcl, pf (1985, ms).  
Gerald Glynn, *3 Mannheimer Duos*: B♭cl, B♭/basset hn/bcl (1982–83, Sonoton, Munich).\*  
András Hamary, *Graffiti*: B♭/bcl, B♭/ bass/contrabass cl (1990, Sonoton, Munich).\*  
Hans-Joachim Hespos, *GELB*: for 8 clarinetists (A♭/basset hn, E♭, C, A, B♭/basset hn/A, Tárugató/Tsax, bass, contra) (1979, Hespos Ed.).+  
——— *Harry's Musike*: solo bcl (1972, Hespos Ed.).  
——— *Pico*: either contrabass or picc A♭cl solo (1978, Hespos Ed.).  
Volker Heyn, *Reb David, Wife, and Wolf*: bcl, contra, str bass (1987, Breitkopf & Härtel).  
Cornelius Hummel, *Notton—tonnot PALINDROM*: E♭cl, bcl (1991, ms).  
Barbara Kolb, *Rebuttals*: 2 B♭cls (1965, C. F. Peters).  
Joachim Krebs, "*. . . zusammenfließend singen wir die Gegenwart . . .*": B♭/bass, B♭/bcl (1985, Peer International).+

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- Georg Kröll, *Zwiegsänge*: B♭cl, B♭/bass/contrabass cl (1987, Moeck, Celle).+  
 Helmut Lachenmann, *Allegro Sostenuto*: B♭/bcl, vc, pf (1986–88, Breitkopf & Härtel).  
 ——— *Dal Niente*: solo B♭cl (1970, Breitkopf & Härtel).  
 ——— *Trio fluido*: B♭cl, vla, perc (1968, Breitkopf & Härtel).  
 André Laporte, *Reflections (Inner Space Music)*: B♭cl solo (1970, Chester).  
 ——— *Sequenza*: B♭cl solo (Tonos).  
 Drake Mabry, *3.28.90*: 2 bcls (1990, ms).  
 Bruno Maderna, *Dialodia*: 2 B♭cl (Ricordi, Milan).+  
 Arne Mellnäs, *Rendezvous I*: B♭cl, bcl (1979, ms).  
 Willson Osborne, *Rhapsodie*: B♭cl solo (C. F. Peters).  
 Francis Poulenc, *Sonate for A and B♭ Clarinets* (Chester).+  
 Barnaby Priest, *A Clarinet Album, Two*: B♭/Acl, B♭/Acl (1987–88, ms).  
 Enrique Raxach, *Chimaera*: bcl solo, tape (Donemus).  
 Steve Reich, *New York Counterpoint*: B♭cl, tape (Bossey & Hawkes).+  
 Daniel Rothman, *Two Figures in Dense Violet Light*: 2 B♭cls (1990, ms).  
 Giacinto Scelsi, *Ixor I*: B♭cl solo (1956, Salabert).  
 ——— *Ixor II*: bcl solo (n.d., ms).  
 ——— *Ixor III*: B♭cl solo (n.d., ms).  
 ——— *Ixor IV*: B♭cl solo (n.d., ms).  
 ——— *Kya*: B♭cl solo, ensemble (n.d., Salabert).  
 ——— *Preghiera per un ombra*: B♭cl solo (Salabert).  
 ——— *Tre Pezzi*: E♭cl solo (n.d., Salabert).  
 Gunther Schuller, *Duo Sonata*: Acl, bcl (1948, G. Schirmer).  
 Klaus Hinrich Stahmer, *Grabstelle für Erich Arendt*: 2 B♭cls (1987, Universal Ed.).  
 ——— *Porcelain Music*: B♭cl, B♭/bcl, tape (1983, Sonoton).\*  
 Karlheinz Stockhausen, “*Laub und Regen*” from *HERBSTMUSIK*: B♭cl, basset hn (1974–82, Stockhausen Verlag).  
 Morton Subotnick, *Passages of the Beast*: B♭cl solo, ghost electronics (1978, Th. Presser).  
 Walter Zimmerman, *25 Kärwa-Melodien*: 2 B♭cls (1979, Begineer Press).

\* Recorded for forthcoming CD on Proviva, Munich.

+ Recorded for forthcoming CD on Koch-Schwann, Düsseldorf.

HARRY SPARNAAY (Holland) studied with Ru Otto at the Amsterdam Conservatory. Since 1970 he has performed exclusively on the bass clarinet and today ranks among the world's most distinguished performers. In 1972 he was the first prize winner in the Gaudeamus Competition. He has been a featured performer with many major orchestras including the Concertgebouw Orchestra, the Berlin Radio Symphony Orchestra, The Ensemble InterContemporain, The Israel Symphonietta, and the BBC Symphony Orchestra. As a soloist he has performed at the most influential contemporary music festivals. A number of composers, such as Berio, Xenakis, Feldman, Yun, and Ferneyhough, have dedicated bass clarinet pieces to him. He is professor of Bass Clarinet and Contemporary Music at the Sweelink Conservatory in Amsterdam and the Conservatory of Utrecht, and a current member of the Dutch ISCM-section. An extensive repertory, listing well over 1,080 published items for the bass clarinet, from solo to nonets and concertos, is Wiel Rutten's *Repertory Bass Clarinet* (available from the author at Schartakendreef 114, 3562 gc Utrecht, Holland). The following supplements Rutten's bibliography:

#### *General Repertory*

- Andrezj Dobrowolski, *Music for Tape and Bass Clarinet* (ms).  
 Franco Donatoni, *Soft*: bcl solo (Ricordi).

Guus Janssen, *Sprezzature*: bcl solo (Donemus).  
 Cort Lippe, *Music for Bass Clarinet and Tape* (ms).  
 Theo Loevendie, *Duo for One Bass Clarinet* (Peer).  
 Takayuki Rai, *Sparkle*: bcl, tape (ms).  
 Robert Rowe, *Hall of Mirrors*: bcl and tape (ms).  
 Michael Smetanin, *Ladder of Escape*: 7bcls and 2 contrabass cls (ms).  
 Martin Wesley Smith, *For Bass Clarinet and Tape* (ms).  
 Iannis Xenakis, *Echange*: bcl and 13 instrs (Salabert).

*For HET Trio (Flute, Bass Clarinet/Alto Clarinet, Piano)*

Liana Alexandra, *Music for HET Trio* (ms).  
 Gerard Brophy, *Head* (Ricordi).  
 Mauro Cardi, *Terza textura* (Ricordi).  
 Giulio Castagnoli, *Trio 2b* (ms).  
 James Clarke, *In Another Room* (ms).  
 ——— *Trio* (ms).  
 Lowell Dijkstra, *Brusque* (Donemus).  
 Franco Donatoni, *HET* (Ricordi).  
 Andrew Ford, *Ringing the Changes* (Australian Music Centre).  
 Lucien Goethals, *Two Projections* (ms).  
 Karel Goeyvaerts, *For Harrie, Harry, and René* (ms).  
 Willem Jeths, *Raptim* (Donemus).  
 Otto Ketting, *Summer* (Donemus).  
 Ton de Leeuw, *Trio* (Donemus).  
 Theo Loevendie, *Plus One* (Peer).  
 Paolo Porezzani, *Il volto della notte* (Ricordi).  
 Michael Smetanin, *Spray* (Australian Music Centre).  
 Sytze Smit, *A tempo rubato* (Donemus).  
 ——— *Concierto for HET Trio and Chamber Orchestra* (Donemus).  
 Joep Straesser, *Sonate a tre* (Donemus).  
 Gijs van Dijk, *Trio* (Donemus).  
 Michael Withicker, *Min—amé* (Australian Music Centre).

ANDREA SPLITTBERGER-ROSEN (U.S.A.) is a graduate of Michigan State University (B.M. & Ph.D.) and the Eastman School of Music (M.M.). Her major teachers have been Elsa Ludewig-Verdehr, Keith Stein, Stanley Hasty, and Frank Ell. Since 1984 she has been artist-teacher of Clarinet at the University of Wisconsin—Stevens Point, performing often on Wisconsin public radio and with the Wisconsin Arts Quintet and the Central Wisconsin Symphony Orchestra. With her husband, percussionist Robert Rosen, she is co-founder of the Uwharrie Clarinet-Percussion Duo, a group active in premiering and commissioning new works. Her doctoral dissertation, "A Study of Selected Compositions for Clarinet-Percussion Duo," lists more than 265 such compositions.

*Repertory Suggestions from the Uwharrie Clarinet-Percussion Duo*

Paul Arma, *Resonance* (1975, Dorn Pub.).  
 André Boucourechliev, *Tombeau*: perc or pf (1971, Leduc).  
 David Burge, *Sources III* (1967, Tetra Music / Alexander Broude).  
 Stephen Chatman, *Quiet Exchange*: cl or alto sax (1976, Dorn Pub.).  
 Jon Deak, *Sinister Tremors*: Eb/Bbcl, perc, tape (1977, comp., 215 W. 98th St. #48, New York, NY 10025).\*  
 Jozef Gahér, *Twelve Preludes*: Eb/bcl (1979, comp. Solivarska 4, 82900 Bratislava, Czechoslovakia).\*  
 Jeff Hamburg, *Buk (Buckle)*: bcl, marimba (1986, Donemus).

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- Bern Herbolsheimer, *Phoenix Variations* (1981, comp., 3208 E Pine St., Seattle, WA 98122).
- Sydney Hodkinson, *Drawings: Set No. 3* (1961, Music for Percussion, Inc.).
- Jere Hutcheson, *Duo Sonata for Clarinet and Percussion* (1979, ACA).\*
- Georg Katzer, *Ballade* (1982, Ed. Peters).\*
- Gregg Koyle, *Kumbengo*: cl (or sop sax), marimba (1986–87, comp., Texas Tech Univ., Lubbock, TX 79409).
- Frederich Lesemann, *Sonata* (1968–72, comp., University of Southern California, Los Angeles, CA 90089).+
- James Marshall, *Après moi le sommeil* (1974, comp., 703 Valiant Circle, Garland, TX 75043).
- Frank McCarty, *Variation Duos*: cl, marimba (1979–81, comp., 1347 New Garden Rd, Greensboro, NC 27410).\*
- Paul-Baudouin Michel, *Transparence* (1971, CeBeDeM).
- Kazuto Miyazawa, *Bindung-Teilung* (Variationen ohne Theme) (1979, comp. 2-38-18 Tagara Nerima-ku, Tokyo, Japan).\*
- *Ström*: bcl, marimba (1983, ms).
- Jerome Neff, *Pastoral Piece with Frogs*: + tape (1966, 1979, comp. California State Univ., Hayward, CA 94542).
- Paul Martin Palombo, *Canto d'un altra volta* (1985, c/o Uwharrie Duo, 4320 River Drive, Plover, WI 54467).\*
- Ivo Petrič, *Contacts* (1979–81, comp. Bilecanska 4, 61000 Ljubljana, Yugoslavia).\*
- Primoz Ramovs, *CLAR-PERC* (1988, comp., Kardeljeva 18, 61000 Ljubljana, Yugoslavia).\*
- Enrique Raxach, *Careful with That . . .* (1982, Donemus).\*
- Charles Ruggiero, *Studies for Clarinet and Vibe* (1979–80, comp. Michigan State University, East Lansing, MI 48824).
- Armand Russell, *Pas de Deux* (1958, Music for Percussion, Inc.).
- Elliot Schwartz, *Options II*: + tape (pub. 1972, Media Press).
- Netty Simons, *Wild Tales Told on the River Road*: cl/bcl (1973, Merion Music).
- Milan Stibilj, *Zoom*: cl, 2 bongo drums (1970, comp. Grabloveceva 28, 61000 Ljubljana, Yugoslavia).
- Michael Udow, *Vistas*: bcl (1979, Equilibrium Press).\*
- Francisco Zumaquê, *Onamá*: bcl, marimba (comp. Mittlstr. 63, D-5300 Bonn 2, Germany).

\* Written for the Uwharrie Clarinet-Percussion Duo.

+ Recorded, Mitchell Lurie and Karen Ervin, Crystal Records, S641.

SUZANNE STEPHENS (Germany) was born in Waterloo, Iowa, and educated at Northwestern University (B.M.Ed., M.M.) and the Staatliche Hochschule für Musik und Theater, Hannover (Konzertexam). She was principal clarinetist with the Radio Orchester Stuttgart (1973–75) and since 1974 has specialized in performing the clarinet works of Karlheinz Stockhausen, having performed his compositions with him in Europe, Japan, Israel, India, North and South America, and Russia. In the cycle of seven operas, *Light*, which Stockhausen is now composing, she plays basset horn in the role of Eve. She has played the world premieres of the following Stockhausen works, most of which are dedicated (all or in part) to her:

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- Amour: 5 Pieces for Clarinet* (1976).+++
- Ave* (from *Evas Zauber*): basset hn, alto fl (1985).++
- Botschaft* (scene from *Evas Zauber*): basset hn, alto fl/choir/modern orch; or basset hn, alto fl/choir; or basset hn, alto fl, modern orch (1984–85).
- Cadenzas for Mozart's Clarinet Concerto* (1978).\*

*Der kleine Harlekin*: solo cl (1975).\*\*  
*Donnerstag aus Licht (Thursday from Light)*: opera for 14 musical interpreters (3 solo voices, 8 instrumental soloists, 3 solo dancers), chorus, orch, and tapes (1978–80).++++  
*Evas Lied* (scene from *Evas Zweitgeburt*): solo basset hn, 7 boy singers, 3 basset “teases,” modern orch (3 synths, percussion, tape) (1986).++  
*Evas Spiegel* (from *Evas Zauber*): solo basset hn (1984).++  
*Evas Zauber* (Act 3 of *Montag aus Licht*): solo basset hn, solo alto fl and picc/choir, children’s choir/modern orch (1986).\*\*\*\*  
*Evas Zweitgeburt* (Act 2 of *Montag aus Licht*): 7 boy singers/basset hn, 3 basset “teases”/piano/choir (live or on tape), girls’ chorus/modern orch (1984–87).++++++  
*Examen* (scene from *Michaels Jugend*): tenor voice, tpt, dancer/basset hn, pf (1978–79).  
*Festival* (scene from *Michaels Heimkehr*): tenor voice, sop voice, bass/tpt, basset hn, trb/2 sop saxs, elec organ/3 dancer-mimes/old woman/choir, orch/tape (1980).+++++  
*Harlekin*: solo cl (1975).\*\*  
*Herbstmusik* for 4 players with the final duet “*Laub und Regen*”: cl, vla (1974).+  
*In Freundschaft*: solo cl (1977).+++  
*Kindheit* (scene from *Michaels Jugend*): tenor voice, sop voice, bass/tpt, basset hn, trb/dancer/tapes (1978–79).++++  
*Licht, The Seven Days of the Week*: solo voices, solo instrs, solo dancers / choirs, orchestras, ballet and mimes / elec and concrete music (1977–).  
*Michaels Heimkehr* (Act 3 of *Donnerstag aus Licht*): tenor voice, sop voice, bass/tpt, basset hn, trb/2 sop saxs/elec organ/3 dancer-mimes/old woman/choir/orch, tapes (1980).+++++  
*Michaels Jugend* (Act 1 of *Donnerstag aus Licht*): tenor voice, sop voice, bass/tpt, basset hn, trb, pf/elec organ/3 dancer-mimes/tapes with choir and instrs (1978–79).+++++  
*Michaels Reise um die Erde* (Act 2 of *Donnerstag aus Licht*): tpt and orch (with solo parts for basset hn I, cl I, cl II with basset hn) (1978).+++++  
*Mission und Himmelfahrt* (from *Michaels Reise*): tpt, basset hn(1978).++  
*Mondeva* (scene from *Michaels Jugend*): tenor voice, basset hn (1978–79).  
*Montag aus Licht (Monday from Light)*: opera for 21 musical interpreters (14 solo voices, 6 solo instrumentalists, actor), choir, childrens’ choir, modern orch (“modern orchestra” in Stockhausen terminology is synths, percussion, tape) (1984–88).++++++  
*Montags-Gruss*: multiple basset hn and elec keyboard instr (1986–88).++  
*Sirius*: elec music and tpt, sop voice, bcl, bass (1975–77).\*\*\*  
*Soloists’ Version of Michaels Reise*: tpt, 9 co-players, sound technician (1978–84).+++++  
*Susani* (from *Evas Zauber*): solo basset hn (1984).++  
*Tierkreis (Zodiac)*: cl, pf (1975–81).++  
*Tierkreis Trio-Version*: fl, cl, tpt, pf (1975–83).\*++  
*Traum-Formel*: basset hn (1981)+++  
*Unsichtbare Chöre* (from *Donnerstag aus Licht*): 16-track a cappella tape and 8- or 2-track playback (1978–79).\*\*\*\*\*  
*Wochenkreis* (the seven *Songs of the Days*): duet for basset hn and elec keyboard instr (1986).  
*Xi with Micro-tones*: basset hn (1986).++

+Music Cassette, Radio Bremen, Bremen, Germany.

++Music Cassette, West German Radio, Cologne.

+++Deutsche Grammophon, CD 423 378-2.

++++Deutsche Grammophon, 4LPs 2740 272; 4CDs 423 379-2.

+++++Ecm (no number yet).

++++++Wergo 5 CDs (no number yet).

\* Acanta, LP 23531.

\*\* Deutsche Grammophon, LP 2531 006.

\*\*\* Deutsche Grammophon, LP2707 122.

\*\*\*\* Music Cassette, Southwest German Radio.

\*\*\*\*\* Deutsche Grammophon, CD 419 432-2; LP 419 432-1.

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*Works Written by Stockhausen for Suzanne Stephens  
Which Have Not Yet Been Premiered*

- Bijou* (from *Michaels Jugend*): alto fl, bcl (1978–79).  
*Libra* (from *Sirus*): bcl and elec music (1977).  
*Su-kat*: basset hn, alto fl (1989).  
*Tanze Luceva* (from *Michaels Jugend*): basset hn or bcl (1978–79).  
*Ypsilon*: melody instr (with microtones) (1989).

*Other Stockhausen Works Which Use Clarinet  
(or Members of the Clarinet Family)*

- Adieu*: ww quint (1 B $\flat$ cl) (1966).  
*Atmen gibt das Leben*: choir-opera with orch (or tape) (3 cls) (1974–77).  
*Aus den sieben Tagen*: 15 text compositions for intuitive music (1968).  
*Carre*: 4 orchs and choirs (1 Acl, 2 B $\flat$ cls, 1 bcl) (1959–60).  
*Dr. K-Sextett*: fl, vc, tubular bells, vib, bcl, vla, pf (1969).  
*Drei Lieder*: alto voice and orch (2: E $\flat$ cl, Acl) (1950).  
*Expo*: 3 players/singers with short-wave radio (1969–70).  
*Formel*: orch (3: in A) (1951).  
*Fresco*: 4 orch groups (3 B $\flat$ cls) (1969).  
*Für kommende Zeiten*: 17 texts for intuitive music (1968–70).  
*Gruppen*: 3 orchs (1 E $\flat$ cl, 2 B $\flat$ cl, 1 bcl, sax doubling cl) (1955–57).  
*Hymnen*: elec music and musique concrète with soloists (1966–67).  
*Hymnen*: with orch (2, 3, or 4 B $\flat$ cls) (1969).  
*Inori*: adoration for one or two soloists and orch (4 cls [2nd plays E $\flat$ cl]) (1973–74).  
*Jubiläum*: orch (4 cls) (1977).  
*Knabenduett* (from *Michaels Heimkehr*): 2 sop saxes or other instruments (1980).  
*Kontra-Punkte*: 10 instrs (fl, cl, bcl, bn/tp, tb/hrp, pf/vl, vc) (1952–53).  
*Kreuzigung* (from *Michaels Reise*): tpt, 1st basset hn/cl, 2d basset hn, 2 hns, 2 trbs, tuba, elec organ (1978).  
*Kreuzspiel*: ob, bcl, pf, 3 perc (1951).  
*Kurzwellen*: 6 players (1968).  
*Linker Augenbrauentanz* (from *Luzifers Tanz*): fls, basset hn(s), perc, synth (1983).  
*Luzifers Tanz* (Scene 3 of *Samstag aus Licht*) for bass (or trb or euphonium), picc tpt, picc fl/wind orchestra (12: 3 basset hns [ossia E $\flat$  alto], 6 cls, 3 bcls) or symp orch (4 or 5: 1 basset hn, 2 [3] cls, 1 bcl) (and stilt-dancers, dancers, ballet or mimes in staged performances) (1983).  
*Michaels-Ruf*: 8 orch instrs (1978).  
*Mixtur*: orch, sine-wave generators, ring modulators (3: 1 also plays E $\flat$ cl, 1 also plays bcl) (1964).  
*Mixtur*: small orch (1 player plays B $\flat$ cl, E $\flat$ cl, bcl) (1967).  
*Plus-Minus*: 2 x 7 pages to work out (free) (1963).  
*Pole*: 2 players/singers with short-wave radio (1969–70).  
*Punkte*: orch (3: E $\flat$ cl, B $\flat$ cl, bcl) (1952, new version 1962).  
*Quitt*: 3 players (with microtones) (1989).  
*Rechter Augenbrauentanz* (from *Luzifers Tanz*): cls, bcl(s), perc, synth (1983).  
*Samstag aus Licht* (*Saturday from Light*): opera for 13 musical interpreters (1 solo voice, 10 solo instrumentalists, 2 solo dancers), wind orchestra, ballet or mimes/men's choir, organ.  
*Solo*: melody instr with feedback (1965–66).  
*Spiel*: orch (3: in A) (1952).  
*Spiral*: soloist with short-wave radio (1968).  
*Sternklang*: park music for 5 groups (1971).+  
*Stop*: "Paris version" (4: E $\flat$ cl, Acl, basset hn, bcl) (1969).  
*Stop*: orch (free) (1965).  
*Tierkreis*: 12 melodies of the Zodiac for a melody and/or chordal instrument (1975–76).  
*Tierkreis*: cl, hrn, bsn, strs (1977).  
*Trans*: orch (4 B $\flat$ cls, 1 bcl) (1971).

*Ylem*: 19 players/singers (1972).

*Zeitmasse*: 5 ww (fl, ob, English hn, cl, bsn) (1955–56).

+ Stephens performing, Deutsche Grammophon (Polydor), Nr. 2707 123. Most of the works on this list are recorded on Deutsche Grammophon. A complete discography is available from Stockhausen Verlag.

All works prior to 1969–70 are available from Universal Ed., thereafter from Stockhausen Verlag, 5067 Kürten, Germany.

RICHARD STOLTZMAN (U.S.A.), born July 12, 1942, graduated from Ohio State University with a double major in Music and Mathematics, Yale University with a Master of Music degree, studying with Keith Wilson, and later worked toward a doctoral degree with Kalmen Opperman at Columbia University. He has appeared as soloist with more than 100 orchestras, including the New York Philharmonic, the Orchestra of La Scala, the Berlin Radio Symphony, the English Chamber Orchestra, and the Pittsburgh Symphony. A ten-year participant at the Marlboro Music Festival, he is a founding member of the chamber ensemble TASHI, having commissioned and premiered works by Takemitsu and Wuorinen with the Boston Symphony and the Cleveland Orchestra. As a jazz performer, he has appeared at the Bayreuth Opera House, the Tokyo Music Joy Festival, Australia's Adelaide Festival, and with Woody Herman's Thundering Herd and the Boston Pops. His discography numbers over twenty releases, including a Grammy-winning recording of Brahms's sonatas with Richard Goode and a Grammy-nominated disc of Mozart, Rossini, and Weber concerti. He has recorded chamber works by Bartók, Ives, and Stravinsky, and, with the London Symphony, the Copland and Corigliano concertos and Bernstein's *Prelude, Fugue, and Riffs*. His "crossover" albums include *Begin Sweet World, New York Counterpoint, Ebony, Innervoices* with Judy Collins, *Brasil* with Gary Burton, and a cassette to accompany the photographs of John Pearson, *Music of Life*. He has also appeared and recorded with the Guarneri, Cleveland, Amadeus, and Tokyo quartets as well as the Beaux-Arts-Trio and the Chamber Music Society of Lincoln Center.

### Repertory

Einmar Englund, *Concerto for Clarinet and Orchestra* (1991, Finnish Music Information Center).+

Donald Erb, *Concerto for Clarinet and Orchestra* (1984, ms).+

——— *Woody*: cl alone (1988, ms).+\*

Lukas Foss, *Concerto for Clarinet and Orchestra* (based on TASHI—sextet for cl, pf, str quart, 1986+\*) (1988, ms).+

Timothy Greatbatch, *Nightseapes for Clarinet and Piano* (1990, ms).+\*

Meyer Kupferman, *Moon Flowers, Baby*: solo cl with optional drums (1983, ms).

William Thomas McKinley, *American Blues*: cl, vib, orch (1988, MMC).+

——— *Attitudes*: cl, fl, vc (1967, MMC).+\*

——— *Blue Jeans*: cl, pf (1991, MMC).

——— *Blues Lament*: cl, orch or cl, pf (1981, MMC).

——— *Clarinet Quintet* ("TASHI"): cl, str quart (1976, Margun Music).

——— *Concerto for Clarinet and Jazz Big Band* (1990, MMC).+

——— *Concerto No. 1 for Clarinet and Orchestra* (1977, Margun Music).+

——— *Concerto No. 2 for Clarinet and Orchestra* (1990, MMC).+

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- *Duo Concertante for Clarinet and Piano* (1982, MMC).+\*  
 ——— *Family Portraits*: cl, vn (1989, MMC).+\*  
 ——— *For One*: solo cl (1971, MMC).+  
 ——— *From Opera*: cl, str quart (1975, MMC).  
 ——— *Glass Canyons*: cl, pf, perc, dancers (1990, MMC).+  
 ——— *Lucy Variations*: vn, cl, orch (1983, MMC).+\*  
 ——— *My Friend Dick*: cl, jazz chamber group (1988, MMC).+  
 ——— *New York Rhapsody*: cl, hrp (1987, MMC).+\*  
 ——— *Nocturnes for Clarinet and Cello* (1980, MMC).+\*  
 ——— *Quartet*: cl, vn, vc, pf (1975, MMC).+\*  
 ——— *Rhapsody Fantasia*: cl, orch (1976, Margun Music).  
 ——— *Sonata for Clarinet and Piano* (1986, MMC).+\*  
 ——— *Song*: solo cl (1968).+  
 ——— *Trio Appassionata*: cl, vla, pf (1982, MMC).+\*  
 ——— *Two Entratas*: solo cl (1984, Margun Music).+\*  
 ——— *Two Intermezzi*: cl, pf (1984, MMC).  
 ——— *Two Romances*: cl, vn, pf (1984, MMC).  
 Mel Powell, *Madrigal*: cl, vn, pf (1990, G. Schirmer).+\*  
 Steve Reich, *New York Counterpoint*: 11 cls (1985, Boosey & Hawkes).\*\*  
 Peter Sculthorpe, *Songs of Sea and Sky*: cl, pf (1987, Faber Music).+  
 David Stock, *Yerusha*: cl/bcl, bsn, tpt, trb, vn, dblbass, perc (1989, ms).+\*  
 Toru Takemitsu, *Fantasma/Cantos*: cl, orch (1991, Schott, Japan).+  
 ——— *Quatrain*: cl, vn, vc, pf, orch (1975, Schott, Japan).+##  
 ——— *Waves*: cl, 2 trbs, hn, bass drum (1976, Schott, Japan).+##  
 Joan Tower, *Fantasy*: cl, pf (1983, Associated Music Publishers).+\*  
 George Walker, *Music for Clarinet and Two Pianos* (1969, ms).+  
 Charles Wuorinen, *Fortune*: cl, vn, vc, pf (1978, ms).+\*  
 ——— *TASHI*: cl, vn, vc, pf, orch (1975, ms).+\*

+Premiered by Stoltzman.

++Recorded by Stoltzman, CRI, SD 507.

\* Commissioned by Stoltzman.

\*\* Recorded by Stoltzman, RCA, 5944-1.

#Recorded by Stoltzman, RCA, ARL1-3483.

##Recorded by Stoltzman, DG, 2531 210.

MARTY WALKER (U.S.A.), born in Pasadena, California, was educated at the University of Redlands, the Vienna Academy for Music and Dramatic Arts, Michigan State University, and the California Institute of the Arts. A performer emphasizing new music and improvisation, he has premiered more than 50 compositions written especially for him and has presented concerts at university and private spaces throughout the United States, including the New Music America Festival in Houston and Miami. His recording, *Marty Walker, Clarinets* (Advance Recordings, FGR-13), was selected as one of the ten best LPs of 1985 by *Option Magazine*. From 1983 to 1989 he was the founder/director of the Marquette New Arts Series and a faculty member at Northern Michigan University. Currently, he teaches at the College of the Canyons and Antelope Valley College and performs regularly with the Los Angeles-based new music group eXindingo!.

### *Solo Clarinet*

Rick Cox, *New Lights on Old Channels* (1977, ms).\* +

Brent Dawson, *April Tuesday* (1979, ms).\*

——— *Flexuosity* (1977, ms).\* +



——— *If You've Something Serious to Say, the Words Will Come* (1980, ms).\*

Jim Fox, *For Christopher and Adrienne*: bcl solo (1990, ms).

——— *Nine-Fifty* (1977, ms).#

John Kuhlman, *Nothing Hard* (1979, ms).\* ++

James Tenney, *Monody* (1959, ms).

### Clarinet and Piano

Rick Cox, *Only Open* (1976, ms).\*

Jim Fox, *New Morning Pallor* (1977, ms).\* +

——— *Not a Plenary Indulgence* (1976, ms).\*

——— *The Other Five Songs* (1979, ms).\*\*

Read Miller, *Drunk on the Ladder* (1979, ms).\*

Alexandra Pierce, *Three Pieces for Clarinet and Piano* (1976, ms).\*

### Clarinet Chamber Music

Anthony Catania, *Trio in Five Movements*: cl, fl, bsn (1985, ms).\*

Vincentiu-Cristian Coban, *Metabole I*: cl, perc (1980, ms).

——— *Metabole II*: cl, perc (1981, ms).

Rick Cox, *Mostly Pretty Down*: bcl, any ensemble (1975, ms).

——— *Peculiar Behavior*: 4 B♭cls (1975, ms).\*

——— *When April May*: cl, str quart (1991, ms).\*

Michael Jon Fink, *Living to Be Hunted by the Moon*: 2 cls, 2 bcls, electronics (1987, ms).\* @

——— *Thread of Summer*: cl, str quart (1990).\*

Ann Noble, “. . . *Saved in Prisms of Honey . . .*”: cl, sop voice, pf (1976, ms).

Alexandra Pierce, *After Dubuffet's "Limbour as a Crustacean"*: cl, perc (1979, ms).\*

### Bass Clarinet

Harold Budd, *Serenade*: B♭cl, celesta, vib, perc, hrp (1976, ms).

Joseph Celli, *Totem for Bass Clarinet and Three Channels of Video* (1986, ms).\*

Barney Childs, *The Edge of the World*: bcl, organ (1981, ms).\* ++

——— *London Rice Wine*: any wind instr (1973, ms).

——— *Pastorale*: bcl, tape (1983, ms).

Janyce Collins, *Fin of the Shark*: bcl, dancer, reader, vib (1979, ms).\*

Bernardo Feldman, *Portraits of Friends and Relatives* (recuerdos de un antano triste): bcl, tape (1991, ms).\*

Morton Feldman, *Bass Clarinet and Percussion*: bcl, 2 percs (1981, Universal Ed., London).

Michael Jon Fink, *Epitaph*: solo bcl (1990, ms).\*

——— *Writ in Water*: bcl, cl (1990, ms).\*

——— work in progress for bcl and orch (1992, ms).\*

Jim Fox, *Between the Wheels*: bcl, str quart (1990, ms).\*

——— *Last Things*: bcl, tape (1986, ms).@

——— *Solo for Single-Reed Instrument*: solo bcl or any wind instr (1990, ms).\* ++

Joel Hamilton, *Four Pieces for Bass and Piano* (1991, ms).\*

Christopher Hobbs, *Four Studies in Shadow*: bcl, bfl, bsn (1984, ms).\*

——— *Recitative*: bcl, celesta, vib, perc (1979, ms).\* ++

Luigi Antonia Irlandini, *A voz que clama no deserto* (The Voice That Calms in the Desert): bcl, pf (1984, ms). International Update

John Kuhlman, “. . . *Like a Scarlet Runner*”: bcl, pf (1976, ms).\* +

Cort Lippe, *Music for Bass Clarinet and Tape* (1986, ms).

Read Miller, *Walking the Floor Over You*: bcl, hrp (1990, ms).\* 191

Ted Peterson, *One, Two, Three, Four*: bcl/cl, sop voice, chamber chorus (1991, ms).\*

David Reck, *Elegy for the Martyrs of the Shining Path*: bcl, speaking chorus, clay flutes, perc, pf, organ, taped professional wrestlers (1987, ms).\*

——— *The World Music Notebook*: bcl, alto fl, contra bsn (1986, ms).\*

\* Written for Walker.

+ *New Lights on Old Channels*, Grenadilla Records, GS-1046.

++ *Marty Walker, Clarinets*, Advance Recordings, FGR-13.

# *Redlands Music for Clarinets*, Zanja Records, ZR-2.

@ Scheduled for release on the Cold Blue label in winter 1991.

NIGEL WESTLAKE (Australia) studied with his father, the eminent Australian clarinetist Don Westlake. As a student, he was principal clarinetist with the Australian Youth Orchestra during its tours to Singapore and China in 1979. Since leaving the N.S.W. Conservatorium High School, he has worked as a freelance musician with many prominent ensembles and orchestras in Australia. In 1983 he went overseas to undertake further study of the bass clarinet with Dutch virtuoso Harry Sparnaay. He combines performing interests with composing, and in 1980 formed "The Majic Puddin Band" to expand his writing and performing experience. In 1987 he was composer-in-residence with ABC Radio and subsequently won the Gold Medal for Best Original Music at the New York International Radio Festival Awards for one of the many themes he wrote during this period. His percussion quartet *Omphalo Centric Lecture* was selected to represent Australia at the Paris Rostrum in 1986. He won the "Sounds Australian" Music Critics' Award for a performance by Synergy in 1988 and was nominated in 1989 and 1990 at the APRA Awards for the most performed Australian serious work. In 1991 he will complete commissions for the Sydney Symphony Orchestra, Synergy, Pipeline, television, and Attacca, a new septet headed by guitarist John Williams, with whom he will tour in Australia and the United Kingdom in 1992. Included in the following list are works performed regularly by the Australia Ensemble, a Sydney-based group, resident at the University of N.S.W., with whom Nigel Westlake plays clarinet:

### Repertory

D. Banks, *Prologue, Nightpiece, & Blues for Two*: cl & pf (1968, Schott).\*

G Brophy, *Séraphita*: cl, fl, vn, vla, alto, pf (1988).

G. Hair, *Concerto for Clarinetist & Double Ensemble*: cl/contrabass/E♭, fl, vn, vla, vc, keyboards, perc (1986, Australian Music Centre).

M. Isaacs, *Cantilena*: bcl & pf (1985, AMC).

——— *So It Does*: cl/bcl, fl/alto, vn, vla, vc, pf (1987, AMC).+

——— *3 Scherzi*: cl, fl, vn, vc (1986, AMC).

Bozidar Kos, *Catena 2*: cl, fl, vn, vla, vc, pf (1989, AMC).

——— *Spectrum*: bcl, perc (1988, AMC).

D. Lumsdaine, *Bagatelles*: cl, fl, vla, vn, vc, pf (1987, AMC).

P. Sculthorpe, *Songs of Sea & Sky*: cl & pf (1988, Faber).\*

——— *The Tower of Remoteness*: cl & pf (1980, Faber).\*

I. Shanahan, *Echoes/Fantasies*: bcl & perc (1984, AMC).

M. Smetanin, *Ladder of Escape*: bcl & tape (1984, AMC).

——— *Strange Attractions*: bcl, fl, vn, vla, vc, pf (1990).

Martin Wesley Smith, *For Clarinet & Tape*: cl or bcl (1983, AMC).

——— *White Knight & Beaver*: bcl, fl, tape (1984, AMC).+

C. Vine, *Cafe Concertino*: cl, fl, vn, vla, vc, pf (1986, Chester Music).+

——— *Love Song*: bcl & tape (1986, Chester Music).

——— *Miniature 4*: cl/bcl, fl, vn, vla, vc, pf (1988, Chester Music).

Nigel Westlake, *Entomology*: bcl/E♭cl, fl/alto/picc, vn, vc, perc, pf, tape (1990, AMC).

——— *Malachite Glass*: bcl, 4 percs (1990, AMC).  
 —— *Onomatopoeia*: bcl & digital delay (1984, AMC).  
 —— *Refractions at Summer-cloud Bay*: bcl, Ebcl, fl/alto/picc, vn, vla, vc (1990, AMC).+

G. Whitehead, *Manutaki*: cl, fl, vn, vla, vc, pf (1984, AMC).+

M. Whitticker, *Miname*: bcl, alt fl, pf (1988, AMC).

+Recorded, Tall Poppies, TP 002 CD.

\* Recorded, Tall Poppies, TP 004 CD.

### Addresses

For addresses not listed, see *Music in Print*, Publisher Directory, Musicdata, Inc., Philadelphia, PA (1974-) and *Opus*, c/o Schwann, Santa Fe, NM.

ACA (American Composers Alliance), 170 West 74th St., New York, NY 10023, U.S.A.

Advance Recordings, P.O. Box 3073, San Leandro, CA 94578, U.S.A.

AMC (Australian Music Centre) 201, level 2, Argyle Centre, Argyle St., The Rocks, Sydney 2000 N.S.W., Australia.

BMG Ariola S.P.A, Via Dis. Alessandro 7, 00131, Rome, Italy.

Callisto, Storeasen 21 B, 1'257 Oslo 12, Sweden.

Canadian Music Center, 20 St-Joseph Street, Toronto, Ontario M4Y 1J9, Canada.

Capstone Records, 252 DeKalb Ave., Brooklyn, NY 11205, U.S.A.

Catena Press, 67 Marlborough Avenue, Glenfield, Auckland 1310, New Zealand.

Cirrus Music, P.O. Box 61, Carbondale, IL 62903, U.S.A.

Cold Blue Records, 4131 1/2 Lafayette Place, Culver City, CA 90232, U.S.A.

Chrome Arts, 7869 Santa Monica Blvd., Suite 243, Los Angeles, CA 90036, U.S.A.

Crystal Records, 2235 Willida Ln, Sedro Woolley, WA 98284, U.S.A.

Dantalian, 11 Pembroke, St., Newton, MA 02158, U.S.A.

Edizioni Musicali Edi-Pan, Viale Mazzini, 6-00195 Rome, Italy.

Equilibrium Press, 9200 Stoney Court, Dexter, MI 48130, U.S.A.

Fontec, 5-22-5, Ogikubo, Suginami-ku, Tokyo 167, Japan.

Forward Music, 92 Ballamore Road, Bromley, Kent BR1 5LL, England.

Fylkingen Records, Box 4269, S-102 66 Stockholm, Sweden.

Grenadilla Records, c/o RGP, 52 Kohring Circle South, Harrington Park, NJ 07640, U.S.A.

Hespos Edition, Riedenberg 16, D-2875 Ganderkesee, Germany.

IMI (Israel Music Institute), P.O. Box 11253, Tel-Aviv, Israel.

ITM (Iceland Music Information Center), Freyjugatal, Box 978, 121 Reykjavik, Iceland.

Klavier Records, P.O. Box 9388, North Hollywood, CA 91609, U.S.A.

Leonarda Records, P.O. Box 1736 Cathedral Station, New York, NY 10025, U.S.A.

Magnamusic-Baton, Inc., 10370 Page Industrial Boulevard, St. Louis, MO 63132, U.S.A.

Magnetic Music Publishing, 5 Jones St., Suite 4, New York, NY 10014, U.S.A.

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Zen-On Music, c/o European American Music Distributors, P.O. Box 850, Valley Forge,  
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- fects, and multiphonic trills. Also included are exercises for all the techniques and an accompanying booklet with explanations. It is the most thorough and extensive method book available dealing with new techniques. A problem for clarinetists using the 17-key Boehm clarinet is that the fingerings don't always work exactly as notated—the extra length also modifies the overtone structure slightly in ways that are impossible to predict. Nevertheless, there is much useful information, even for the 17-key clarinetist.
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- Caravan, Ronald L. "Extensions of Technique for Clarinet and Saxophone." Doctor of Musical Arts dissertation, Eastman School of Music, 1974. Deals with multiple sonorities, acoustical properties of multiple sonorities, quarter tones, timbre variation, and other extensions of technique.
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PHILLIP REHFELDT is Professor of Woodwind Instruments and Musicology at the University of Redlands and a well-known performer and recorder of new music for the clarinet.

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