A Comparison of Contemporary Components Used in Selected Twentieth-Century Flute Etude Material.

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A COMPARISON OF CONTEMPORARY COMPONENTS USED IN
SELECTED TWENTIETH-CENTURY FLUTE SOLO
LITERATURE WITH CONTEMPORARY
COMPONENTS FOUND IN TWENTIETH-
CENTURY FLUTE ETUDE MATERIAL

A Monograph

Submitted to the Graduate Faculty of the
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requirements for the degree of
Doctor of Musical Arts

in

The School of Music

by

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May, 1979
MANUSCRIPT THESSES

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ABSTRACT

Innovations demanded by contemporary composers have frequently found flutists unprepared. Study materials dealing with these innovations have been relatively few in number until recently. Additionally, the contemporary etude material in existence is not seemingly in wide use. Consequently, solo flute literature containing contemporary components has not received extensive acceptance by many flutists.

Teachers and students have continued to be awed by the performance demands of much of the solo literature written since 1950. Students may be able to find ample pedagogical material dealing with fingering combinations and range. A problem surfaces when searching for pedagogical material dealing with rhythmic, harmonic, melodic, and notational problems, and with special effects found in contemporary flute solo literature.

A lack of understanding, and often a subsequent prejudice against the teaching or performing of contemporary practices have too frequently been the case. In such a situation, the student may ignore a fine composition which could become standard literature.
Today's performer must maintain a repertoire of older contemporary techniques while learning new ones at a much faster pace than ever before. Etude materials can be hard to find if the flutist does not recognize a composer's name or know his compositional style.

The purpose of this paper is to examine selected solo literature of this century and to compare the contemporary compositional demands of the solo area with contemporary components available in the etude literature.

A study and categorization of the contemporary elements in the flute solo and etude material were made. Tables were drawn showing the rhythmic characteristics, the melodic characteristics, the harmonic characteristics, and the notational characteristics of each. Tables were also used to characterize the special effects found in each.

Chapter II deals with a more detailed discussion of the contemporary elements of each selected solo. Chapter III does the same with the etude collections. Chapter IV is a summary of findings and recommendations for future investigation.

Appendices B, C, D, and E contain tables representing contemporary devices and special effects used in solo and etude materials. Reading horizontally, one may find which materials deal with a given technique. Reading vertically, one may see which techniques are contained in a given solo or etude.
CHAPTER I

INTRODUCTION

Statement of the Problem

Innovations demanded by contemporary composers have frequently found flutists unprepared. Study materials dealing with these innovations have been relatively few in number until very recently. Additionally, the contemporary etude material in existence is not seemingly in wide use. Consequently, solo flute literature containing contemporary components has not received extensive acceptance by many flutists.

Flute study has been filled with etudes of such familiar names as Joachim Andersen, Henri Altes, Paul Taffanel, and Marcel Moyse. These flute study materials have served long and will continue to serve well in the teaching of a standard, traditional, common-practice style of flute playing. In addition, these materials should serve as solid background for the teaching of techniques used in the contemporary, twentieth-century styles. For example, Stuart Dempster, one of the foremost trombone performers of avant-garde music, has stated that he feels a solid traditional technique should be developed before attempting
modern techniques. In addition, he feels that without the secure breathing apparatus and embouchure built by many traditional studies, a performer will be ineffective in executing contemporary techniques. Oboist Lawrence Singer joins in this approach. He stresses that twentieth-century techniques which are begun by building from traditional techniques are logical developments of tradition.

Teachers and students, however, have continued to be awed by the performance demands of much of the solo literature written since 1950. As George Knight states in his dissertation: "Some difficulties encountered in performing contemporary music stem from the lack of relevant preparation rather than from some natural inevitability." Students may be able to find ample pedagogical material dealing with fingering combinations and range. A problem surfaces when searching for pedagogical material dealing with rhythmic, harmonic, melodic, and notational problems, and with special effects found in contemporary flute solo literature. In 1965, Abraham Schwadron called for composers, virtuosi, and educators to "... unite to formulate standard study

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materials for all instruments" in dealing with the demands of twentieth-century music.\(^4\)

A lack of understanding and often a subsequent prejudice against the teaching or performing of contemporary practices have too frequently been the case. In such situations, the student may ignore a fine composition which could become standard literature. In a 1974 college study, Merrill Brown discovered that of 1,779 performed flute solo pieces, only the Berio \textit{Sequenza} (1958) and the Varèse \textit{Density 21.5} (1936) were on the list as representative compositions using twentieth-century devices.\(^5\)

Among the musicians who take a dim view of today's applied training in regard to contemporary music is David Hamilton:

\[
\ldots \text{for all the extraordinary virtuosity of the performers} \ldots \text{they are still a small minority, and they did not often acquire their great facility at conservatories. Much of musical education here and abroad is still in the nineteenth century}. \ldots \]

Composer Ben Johnston agrees with this attitude toward present applied training and makes a sobering statement, "The proportion of music of our times now in the repertory of


most concert artists and ensembles is smaller today than at any other period in the history of concert-giving.\textsuperscript{7}

In a similar vein, David Wooldridge considers most performers both cynical and lazy when it comes to dealing with contemporary elements in the music. He sympathizes with contemporary composers when he admits:

New demands must inevitably limit new repertoire until new techniques—or the desire to acquire them—have become common property, but it is significant how quickly what had once been regarded as formidable and even insuperable problems are solved and absorbed into the standard repertoire, once one artist has provided the key.\textsuperscript{8}

In addition to the broad elements of rhythm, melody, harmony, and notation in contemporary music, another component which presents problems in teaching and learning is the area of special effects. Special effects might be defined as any novel or unusual techniques which could produce sounds not falling under Bartolozzi's definition of traditional sounds: "... the emission of single sounds of maximum timbric homogeneity throughout the range of the instrument."\textsuperscript{9}

Special effects often deal with timbre. The


experimentation with this element has become a primary part of twentieth-century compositional practice. Consequently, timbre experimentation has influenced melodic, harmonic, and rhythmic characteristics also.

William Brooks describes three very broad methods of creating effects and new sounds: (1) the use of nontraditional instruments, (2) the generation of new sounds on traditional instruments, and (3) the alteration of traditional instruments and invention of new ones. In general, in regard to special effects, flutists must think in terms of categories two and three.

Composers through history have made demands for effects by instrumentalists which have seemed impractical or even impossible at the time. Experimental attempts to produce new sounds by means of unusual playing techniques are found in the music of Monteverdi, Berlioz, and Rimsky-Korsakov. Some have now become standard techniques. Initial motivation for these new playing techniques was often pictorial or theatrical. Some examples are: the interior piano strumming in Cowell's Aeolian Harp, tone clusters in Ives's The Masses, and Sprechstimme in Schoenberg's Pierrot Lunaire.

Many contemporary sounds are the result of transferring techniques from one instrument to another. Some

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originate in the mind of the composer. Varèse said, "I dream of instruments obedient to my thought and which with their contribution of a whole new world of unsuspected sounds, will lend themselves to the exigencies of my inner rhythm." 11

Other techniques have come from the performers themselves, who have instructed composers of the possibilities of their instruments. Some special effects have even existed before literature was available to take care of that particular sound. In 1963, Robert Cantrick told of the technique of buzzing into the flute and complained because there was "... no literature available to take advantage of this unique sound." 12

Some of the same techniques are conceived differently by individual composers. For instance, Joan Templar Smith points out that Richard Strauss' conception of flutter tonguing was that of birds fluttering or girls giggling. Richard Wagner described it as being harsh and grotesque, while Kent Kennan stated that it was an eerie and whirring sound. 13

Significance of the Problem

New performance demands in the form of special effects and contemporary treatment of such elements as


rhythm, melody, harmony, and notation have both increased the performance potential and the capabilities of the instruments and the players. The flute has continued to become a more expressive and versatile instrument as a result of the acquisition of skills demanded by twentieth-century compositions.

Flutist Samuel Baron stated as early as 1962 that for a long period the flute was thought of primarily as an orchestral instrument to be played with a maximum of brilliance and power. The contemporary composers, he feels, are the ones who are discovering the full range of the flute's capacity with all its many capabilities, "... from the softest whisper to the loudest shriek."14

Contemporary composers request existing contemporary performance techniques in their music and continue to explore still newer ones. Therefore, today's performer must maintain a repertoire of older contemporary techniques while learning new ones at a much faster pace than ever before. The traditional tool in such a situation has been the etude. However, problems arise when the student begins to search for material dealing with etudes using twentieth-century techniques. Many of today's teachers, traditionally trained, have no background in the production of contemporary techniques and an inadequate knowledge of the availability of existing contemporary etudes. Materials can be hard to find,

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particularly if a composer's name in an unannotated catalog is unfamiliar. Much of the traditional material simply does not adequately cover even contemporary techniques which are presently considered "standard." The shortage of materials dealing with more recent techniques and the lack of knowledge of existing contemporary etudes are serious. The virtuoso performer is an essential part of the continuing development of contemporary techniques and the consequent growth of twentieth-century music. A performer can find a new technique difficult to master if the only specimen to be found is in the given solo itself.

The purpose of this paper is to examine selected solo literature of this century and to compare the contemporary compositional demands of the solo area with contemporary components available in the etude literature. In this way, students and teachers may realize that the teaching and learning of contemporary skills is vital to the advancement of the flute as well as of music. An additional purpose is to encourage more flute etude writing by composers (perhaps flutists themselves) who will write contemporary devices for all levels of ability from the very basic materials to the same techniques used in the most advanced contemporary solos of our time.

Delimitations

This study of materials will be limited to fifteen contemporary flute solos and thirty etude/study collections.
In both the solo and etude literature the material used is for flute alone or flute and one other accompanying instrument, including flute and tape. Although some of the material includes portions for piccolo in C, alto flute in G, or bass flute in C, the study does not cover literature primarily for these instruments. Relevant literature for unspecified treble instruments is included. Jazz etudes/studies and orchestral excerpts were not a part of the research, although excerpts do appear in two of the etude collections included.

The topic of transferability of skills found in instructional materials is not discussed. Also, no unpublished materials in either the solo or etude areas are used.

The collection of materials was begun in 1976 and concluded in December, 1978. All of the music cited in the bibliography is in the personal library of the writer. Sources for the solo and etude literature included standard flute catalogs, commercial publishers' catalogs, dissertations, music periodicals, program collections from various colleges and universities, recommendations of various flutists and teachers, and library holdings of flute music.

Basis of selection of materials in the case of studies included every collection available during the period of study which evidenced a reasonable number of twentieth-century compositional devices. In addition, each contains some value for technical learning in the contemporary style.
Selection of solo materials included one or more of the following: (1) innovative treatment of the flute; (2) a relative degree of musical value; (3) a regard for frequency or popularity of performance, thus acting as a type of recommendation; and (4) some novel notational aspects. Basically, research was directed at finding techniques in the solo and instructional material which are characteristic and peculiar to the twentieth century. Some of the materials, however, do contain traditional techniques along with twentieth-century styles and features.

Definition of Terms

For purposes of this study, the following definitions will apply. Instructional materials are exercises used to teach specific skills on the flute, but which are not usually included as recital or concert performance material. The term instructional material is used interchangeably with method books, studies, and etudes.

Twentieth-century contemporary devices or techniques refer to performance or compositional techniques that are generally novel and peculiar trends found in twentieth-century music as opposed to music prior to this century. The term may imply new harmonic, rhythmic, and melodic treatment, along with more extreme articulation demands, extreme range, unusual notational systems, and special effects.

In the area of rhythm/meter, odd meter refers to a regular grouping of irregular beats, usually found with an
odd number time signature. **Mixed meter** generally may contain either changing or simultaneous time signatures and is also called multimeter or polymeter. In **unbarred compositions**, there is no perceptible unit of measurement and usually no tempo in the traditional sense. Often in aleatoric music and some electronic music, **unbarred music** can be said to be nonstructured, random, or indeterminate activity. **Extreme complexity** can be described as a composition notated in measures with time signatures, but which may also be extremely difficult to read due to the uncharacteristic succession of note placement, complexity due to rhythmic figures of an unusual nature, or placement of rests. **Extreme complexity** may also indicate severe difficulty in achieving ensemble with an accompanying instrument.

The area of melody has several components in twentieth-century style, which can be defined for purposes of this paper. **Wide leaps** generally refer to melodic skips of a major sixth or more. These skips are often dictated by the composer's style and desire for a particular timbre or texture and its effect. In serial music a tone in the series may be in any octave. The melodic line, therefore, may cover wide ranges and unusual combinations of intervals. **Unusual interval sequence** implies that the sequence is out of the realm of usual diatonic or chromatic composition, which may make technical demands on the performer which are not often practiced. When **extreme dynamics** are used, the number or
frequency of occurrence as well as the degree of volume
difference can be considered nontraditional. Extreme range
in this study will indicate significant use of notes above
\( a^\text{b}_3 \), or highly technical writing in the upper part of the
third octave.

Under the heading of harmony, atonal/serial are terms
used together with the understanding that twelve-tone tech-
nique was the first systematic approach to atonality. More
properly, in atonality any of the chromatic notes may be used
as autonomous musical elements. The vertical and horizontal
dimensions have no specific procedures to establish a
functional relationship between them. In a twelve-tone work,
all musical events including melody and harmony may be derived
from any of the twelve different chromatic notes and their
organized placement. In serial music, dimensions other than
pitch may be organized with methods analogous to the twelve-
tone method. Modes/artificial scales refers to the selection
by a composer of tones arranged in a scale, which forms the
basic tonal substance of a composition. In modes and
artificial scales, that selection of intervals and their
placement in the scale is not characteristic of traditional
diatonic music.

In the area of notation, twentieth-century music can
often contain mixtures of both traditional and contemporary
elements. Use of symbols for special effects usually will
imply a makeshift extension of traditional notation, with
traditional methods of indicating pitch and rhythm, but using
signs to add those contemporary techniques not available in traditional notation. **Unusual notation** will include any nontraditional way of indicating pitch, intensity, duration, or timbre.

**Method of Investigation**

The study of contemporary techniques and devices in solo and instructional materials for winds is not new. L. Russell Coleman completed a study of woodwind study materials, which deals with the performance problems in contemporary music.\(^{15}\) His study includes all five woodwind instruments. Completed in 1969, his bibliography of flute materials includes nineteen collections of studies. Some significant newer material is now available. Herbert L. Koerselman did a study of etude materials for the brass instruments, which is extremely similar to Coleman's study of woodwind etude literature.\(^{16}\)

Richard Henderson, in his dissertation discussing contemporary techniques for oboe, makes the point that there is a serious scarcity of etudes for the instrument and writes


Thomas Howell, in the Avant-Garde Flute, and Robert Dick, in The Other Flute, give practical guidelines for composers writing contemporary techniques for the flute and also give comprehensive descriptions of how certain techniques are to be executed. James Pellerite's A Modern Guide to Fingerings for the Flute also deals with some contemporary techniques such as microtones, multiphonics, and tone-color fingerings.

Nicholas J. Valenziano wrote an example-filled dissertation dealing primarily with notational practices but also with performance techniques of twenty-one avant-garde publications for clarinet.


George W. Knight had prominent clarinetists pick a list of etude and solo material for clarinet. All of the solo literature was selected by the panel from a list of twentieth-century works compiled by Mr. Knight. The etude list was submitted by the panel members themselves, regardless of publication date or compositional/historical style, and was required to be material which they themselves used or was known to be widely used by other university colleagues elsewhere. A comparison was made with the contemporary requirements from the solo literature and the requirements of the standard college level instructional materials, which the panelists were using. Much of the etude material was found to be traditional in relation to the demands of the solo material.

In the present monograph, a study and categorization of the contemporary elements in the flute solo and etude material were made. The need arose for a method of comparison between techniques used in each. A method was adapted from three of the other related studies. Five broad aspects of twentieth-century composition of prime importance in the selected materials were chosen.

I. RHYTHM-METER
   A. Odd meter
   B. Mixed meter
   C. Unbarred
   D. Extreme complexity
   E. Standard/traditional

23Knight, "A Comparative Study."
II. MELODY
   A. Wide leaps
   B. Unusual interval sequence
   C. Extreme dynamics
   D. Extreme range
   E. Standard/traditional

III. HARMONY
   A. Atonal/serial
   B. Artificial scales/modes
   C. Standard/tonal

IV. NOTATION
   A. Use of symbols for special effects
   B. Unusual
   C. Traditional

Each etude and solo was analyzed in relation to the above outline. The fifth component, special effects, was categorized on a separate outline.

V. SPECIAL EFFECTS
   A. Single sounds
      1. Harmonics
      2. Tone-color fingerings
      3. Microtones
      4. Glissandi
      5. Vibrato speeds
      6. Tremolo

   B. Multiphonics

   C. Articulation
      1. Rapid multiple tongue
      2. Flutter tongue

   D. Percussive sounds
      1. Key clicks
      2. Tongue clicks

   E. Air and breath sounds

   F. Vocalizations

   G. Amplification

   H. Theater and drama
Chapter II deals with a more detailed discussion of the contemporary elements of each selected solo. Chapter III does the same with the etude collections. Chapter IV is a summary of findings and recommendations for future investigation.

Appendices B, C, D, and E contain tables representing contemporary devices and special effects used in solo and etude materials. Reading horizontally one may find which materials deal with a given technique. Reading vertically one may see which techniques are evident in a given solo or etude. Instrumentation for each work is indicated in Appendix A.
CHAPTER II
A DISCUSSION OF SELECTED FLUTE SOLO LITERATURE USING CONTEMPORARY COMPONENTS

The Density 21.5 by Edgard Varèse is one of the earliest examples of solo literature containing contemporary elements. Written in 1936 and revised in 1946, the work was an advanced piece for its time in flute solo literature. Samuel Baron says that "Density 21.5 introduced flutists to the music of pure sound."¹ Today's flutists look on it as a forerunner in techniques that are now a common part of contemporary composition.

Rhythmically, the composition is traditional except for two bars of uncomplicated mixed meter. The solo is probably most advanced in the area of melody. Several examples of wide leaps of over an octave are found. Unusual interval sequences are seen in the prevalent uses of diminished fifths and augmented fourths. The final interval of the opening phrase and the final interval of the composition are both diminished fifths. Dynamic changes are often

frequent and abrupt, with three or more changes found in a number of measures. Extreme range is exemplified in a five-bar segment requiring a more or less sustained d. The final note of the composition is a b.

No harmonic key center is present. The only special effect required is a key click with pitch using a harsh articulation. This example of a key click is generally acknowledged to be the first known use of this particular special effect in flute literature.\(^2\)

The flute solo, *Sequenza* by Luciano Berio, represents one of the first examples of notated music using contemporary techniques.\(^3\) The work was written in 1958. Presently a "classic" in the flute literature, the *Sequenza* is dedicated to flutist Severino Gazzelloni, who has been one of the most prominent performers and proponents of contemporary flute solo literature.

Berio wrote a series of *Sequenzas* for solo instruments, which are in numbered order: flute, harp, female voice, piano, trombone, viola, and oboe. In the words of George Flynn:

Berio seems more concerned with the startling dramatic manipulation of various kinds of textures, articulations, and virtuosity. Small passages or larger sections of


sustained sounds are alternated with those of very rapid activity. The interest lies in the ways in which the textures are extended and are related to each other.  

Notation and rhythms are interrelated in the Sequenza. Vertical slash markings represent bar lines. Known as "time lines," distance from one slash mark to the next is a metronome pulse of M. M. = 70. This pulse changes twice within the piece. Therefore, while a steady pulse marks passage of "measure" at a time, the placement of notes within this "measure pulse" is determined by the performer's interpretation of the notation. The position of notes within the bar determines the rhythm. An example of "time line" notation is shown below.

Example 1: Luciano Berio, Sequenza, p. 1, line 1.

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Also known as "blocks of time," this type of proportional notation can often be easier to read than writing out the parts in measured notation with exact values.  

Duration of notes is determined by their placement within the "measure" and/or the connection or lack of connection of note stems. Small cue-sized notes represent very fast note values. Length of notes also plays an important part in musical styles, changing often from very legato to rough staccato and flutter-tongued passages.

Wide leaps and unusual interval sequences are standard procedures in the composition. Dynamics change drastically in degree and frequency.

Extensive use is made of the notes at the top of the third octave, with only one c^4 being used. No key structure is present. While the notation of rhythm discussed above is somewhat unusual, notation of pitch on the staff is traditional.

Symbols indicate a few special effects. Flutter tonguing is indicated by slash markings through note stems. Tremolo, while not exclusively a contemporary special effect, is used in this context here.

The key click effect is used in one place on a diminuendo trill, which evolves into only the key clicks. Harmonics are used sparingly—once for a tone-color change

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on a $b^3$ and once in a trill between two harmonically-fingered notes. Two multiphonics are used, both of which can be produced using first octave fingerings for fundamental notes.

Mario Davidovsky's *Synchronisms no. 1* for flute and electronic tape has become something of a classic. Davidovsky, along with other composers from around 1950 on, began to use music created from non-human powered machines. A leader in the development of tape sources around this time was Pierre Schaeffer in his *A la recherche d'une musique concrete*, which appeared in 1952.6

David Cope expresses the opinion that music for live instruments and tape came about largely because of the loss of theatrical or visual activity when pieces for tape alone were played. He mentions Bruno Maderna as being one of the first composers in this medium in the early 1950's with his flute and tape piece, *Musica su due dimensioni*.7

This work, *Synchronisms no. 1*, was the first in a series of pieces for one or more instruments and tape written by Davidovsky. In speaking of the use of electronic sounds with conventional instruments, Davidovsky says:

One of the points I tried to make is to integrate all levels of sound—both the electronic media and the conventional instrumental media—into one single coherent


musical space. I try to keep, on the other hand, as much as possible of what is characteristic of the electronic instrument, and on the other what is characteristic of the live performer. At the same time, each extends the other, but essentially there is the integration of the spaces into one.\(^8\)

The person operating the tape machine must also have a score. Cues mark places where the tape plays and stops. When flute and tape are playing together in the shorter episodes, a rather strict relationship between the parts must be maintained. When the flute and tape play longer episodes, the parts naturally develop discrepancies producing an element of chance.

The composition is unmetered and unbarred. Only a suggested M. M. = 50 to the quarter note indicates the pulse.

The melodic line contains wide leaps and unusual interval sequences. Extreme dynamics are common. Technical demands in the top third octave notes are found in several places. In addition, \(^4\) and instructions for "highest note possible" are found.

The composition is not tonal harmonically. Primarily, it is a twelve-tone work. The pitch is notated in a standard way except for the "highest note possible" indication (\(\uparrow\)). Symbols are used for a few special effects.

In the articulation area, rapid multiple tonguing and flutter tonguing are used. Percussive sounds include key clicks with and without pitch. These are the only special effects.

Bernd Alois Zimmermann's *Tempus loquendi*... was undoubtedly a very forward-reaching piece in 1963. The work offers a challenging number of contemporary elements even by the most recent standards. The performer must play soprano flute in C, alto flute in G, and bass flute in C.

Rhythmically, odd meter, mixed meter, no meter, unbarred sections, and extreme complexity are all contained in the piece. Tempo markings used at the beginning of each of the thirteen short sections are derived from logarithmic values.

The harmonic basis lacks tonality, with the writing fluctuating between atonality and twelve-tone. Some tone rows are easily recognizable. Melodically, wide leaps, unusual interval sequences, extreme dynamics, and extreme range are all found in the solo.

The use of symbols and instructions for special effects is common. Notation is somewhat unusual due to placement of staves on the page as seen in Example 2.

Some sections are chance writing, with the performer deciding the order of given segments of music. The last section of the piece is improvisatory with the performer designing his own composition from three distinct ideas and using as much or as little of the three as he chooses.

Special effects include harmonics and microtones. Historically, both Greek antiquity and medieval sources show evidence of microtonal intervals. Sixteenth and seventeenth-
Example 2: Bernd Alois Zimmermann, Tempus Longe...
century theoretical systems involved the use of thirty-one divisions to the octave. Julian Carillo, in 1895, had a system of ninety-six intervals to the octave. In the first half of the twentieth century, the most work was done by the Czech composer Alois Haba, who had scales of one-quarter, one-sixth, and one-twelfth tones. Charles Ives, in this country, was one of the first to work with quarter tones.

Other special effects found are glissandi, varying vibrato speeds, and tremolo. In the area of articulation, both rapid multiple tonguing and flutter tonguing are present. Percussive effects are represented by key clicks both with and without pitch. One air sound, the technique of blowing across the mouthpiece with no embouchure, is used.

Roger Reynolds's Mosaic represents one of the earlier pieces using a wide variety of contemporary techniques. Figuratively, the composition is to achieve the effect of a mosaic tile through the utilization of textures and colors. Some piccolo playing is required.

Rhythmically, the work contains only a very few measures of odd meter, none of which are unduly complicated. Mixed meter is frequent. Extreme complexity exists in the ensemble because the parts must fit exactly.

10 Ibid.
11 Ibid.
12 Ibid.
Wide leaps and unusual interval sequences are both common. The work contains frequent and extreme dynamic contrast. While there is some technical third octave work, this aspect is not significant.

Harmonically, the composition is twelve-tone with a tone row beginning the work in the flute part. Pitch and duration are notated traditionally with symbols and instructions indicating special effects.

The special effects include harmonics, which also function as tone-color fingerings. The same pitch may be requested with three different fingerings so as to make a change in timbre and a slight change in pitch.

Example 3: Roger Reynolds, Mosaic, meas. 77-78.

Microtones and glissandi are both used. Varying speeds of vibrato are used freely throughout. No multiphonics are found, but multiple tonguing and flutter tonguing are both represented. Key clicks both with and without pitch are used. One section calls for an air sound described as an airy whistle with pitch but with no tone body.

Cursive is a title used by Chou Wen-Chung to refer to the density and texture found in the script of Chinese
calligraphy. Joined strokes and rounded angles result in artistic loops and curves. According to the composer, Eastern music often written for winds and strings projects the same lines found in the script, but in musical terms.

Example 4: Chou Wen-Chung, Cursive, meas. 31-34.
Rhythmically, the tempo is regulated but variable. Metronome markings are given and the meter is mixed. Sections are extremely complicated in reading as shown in Example 4. Ensemble can be a problem in some of the freer areas.

In Example 5 the flute and piano start at the same point with the flute accelerating from one tempo and the piano executing a rallentando through the measure from another tempo. The parts still must coincide correctly, however, and reach the next measure together.

Wide leaps using octave displacement of half and whole-steps are used, making the interval sequences unusual. Rapidly changing dynamics are required in some areas, while others use what Chou refers to as a continuous intensity scale. Notes within a certain range require a particular dynamic level, as seen in Example 6. Notes in the upper part of the third octave are used often, predominantly in patterns of skipping intervals.

No tonality is evident. Instead, the work seems to be based on seven and eight-note artificial scales using intervals of a major sixth, major and minor seconds, and their inversions with octave displacement of these three intervals. Wide use of symbols for special effects is found. Notation of pitch and rhythm is standard otherwise.

Harmonics are used. Also, trills on the same note, which alternate the regular fingering with a harmonic fingering of slightly lower pitch, are found. Fingerings are furnished in the introduction and were provided by Harvey
Example 5: Chou Wen-Chung, Cursive, meas. 56-57.
Example 6: Chou Wen-Chung, Cursive, Intro.

1. Flute,

2. Piano,

Sollberger, a well-known contemporary flutist.

Microtones are created by lowering the tone while rolling the flute in and by attacking the note high in pitch and rolling back in with the flute to the normal pitch. Also representing microtones are microtonal glissandi and microtonal trills using the lower neighbor microtone. Directions are given throughout the composition for varying the speeds of vibrato, as well as the absence of vibrato.

Flutter tonguing is used frequently. The composition begins with a key click with pitch and has numerous examples
of this technique.

Yori Aki Matsudaira's Rhymes for Gazzelloni is technically a piece for flute alone. However, the performer actually accompanies herself in several places, alternately sounding a trap bass drum operated by a foot pedal, a hi-hat cymbal, a set of wooden or glass chimes, and an alarm clock. Example 7 shows excerpts using these auxiliary instruments.

The composition is completely unbarred, with the only rhythmic indications coming from directions at the beginning, suggesting that the duration of each of the ten lines of the work last for thirty-six seconds. Small cue-sized notes are to be played faster than regular ones. Duration is expressed by means of staccato markings for short duration and various lengths of dashes following the note head to indicate long note values.

A definite chance element is involved in this composition. The piece is designed to have ten lines. Only one version of the first line is given. For lines two through ten, however, ten different versions of each line are given. The performer must choose which of the ten different possible versions he wishes to use for each individual line.

This type of composition allows the performer to share in the actual composition, both in the larger form of the piece and in the smaller elements such as duration.

Christian Wolff stated the view of many contemporary composers who write in this compositional style when he said:
Example 7: Yori Aki Matsudaira, Rhymes for Gazzelloni, excerpts from lines 4-7.

Naruco

Frull.

staccato

Gr. Cassa (a pedale)

P. tto charl. (a pedale)

Timbri

Suonare la sveglia
"Demanding that a musician play a certain note at a certain time in a certain way is simply not making use of his creative potential."13

Wide leaps and unusual interval sequences are common. Dynamics are not used as frequently or suddenly as in some other contemporary pieces, but they are a factor here. Frequent use of high third octave notes is employed.

The harmonic structure shows no evidence of a tonal center. Notational practices use standard pitch placement on a five-line staff and a great many symbols and directions for the special effects. These effects include a single instance of harmonics, many glissandi, and several indications for use of vibrato. No multiphonics are required, but tremolos are used. Rapid double tonguing and flutter tonguing are both used. Key clicks with pitch are indicated, and the first sound in the piece is a tongue click.

Air and breath sounds, such as the audible sound of inhalation and heavy sigh, are used. Vocalizations include an unpitched grumble or murmur, and the pronunciation of consonant and vowel sounds.

Some movement is required onstage while going between the positions set up for the trap bass drum, the hi-hat cymbal, the wind chimes, and the alarm clock. This movement would not really be considered dramatic in gesture, however.

Charles Wuorinen's Flute Variations II is an extremely complex composition rhythmically. Considering the distribution of the mixed-meter signatures, the question arises as to whether the piece can be played completely accurately. Marked \( \frac{1}{2} = 120 \) or less, the changing meters include such markings as \( 8/4, 11/16, 2/2 + 3/8, 11/4 + 3/8, \) and \( 22/2 \). While the eighth-note can be a relatively constant pulse, measures such as the one in Example 8 seemingly require some degree of estimation in addition.

Wide leaps and unusual interval sequences abound. Dynamic changes are extremely varied and frequent. Range extends all the way to \( f'^4 \) in one place and frequent use is made of the upper third octave. The piece opens with a tone row.

Rhythm and pitch are notated in standard ways with symbols and instructions indicating special effects. Harmonics are used sparingly. Microtones and microtonal trills both appear. Glissandi are abundantly used. Some prevalent vibrato effects found in the solo are changing vibrato speeds and the elimination of vibrato. Tremolo also is used often.

Only one multiphonic is used. Flutter tonguing is required, as well as rapid multiple tongue. The solo contains two instances of key clicks without pitch.

Kyriacos Sfetsas' Improvisation is basically a work for flute alone with amplification. The flute at selected
Example 8: Charles Wuorinen, Flute Variations II, meas. 11.
places plays into a stationary, directional microphone with a 150 watt amplifier, which has echo reverberation capabilities. The use of filters or a synthesizer is optional.

There are no measures as such and no meter signatures. A heavy double bar usually starts a new idea or tempo marking, and frequent use of a standard double bar signals the end of a given section. Tempo markings in quarter notes are given, interspersed with short ad libitum passages.

The last three pages keep a steady quarter-note pulse, while remaining unbarred. Frequent rests between sixteenth and eighth-note values present a certain degree of rhythmic complexity.

Wide leaps and unusual interval sequences are represented, especially in the more technical passages. Dynamics are extreme until the final three pages. Widespread use of the high third octave is found, particularly in technical passages.

Some aspects of the notation are unusual, while much of it contains symbols and instructions for performance. Unusual aspects include the use of the same elongated note head for a lengthy note with stems extending from the elongated note head determining the passage of quarter-note values. This can be seen in Example 9.

Also, one instance of graphic notation, as seen in Example 10, is used by the composer. In this case, no extension of traditional notation could express the effect which the performer could produce. The flutist interprets
the rise and fall of the graphic notation to give the widest possible variation of dynamics and nuance, while performing a key click and blowing only an air sound across the flute.

Among the special effects, wide use is made of microtones, especially in glissandi between both large and small intervals. No multiphonics are found. Flutter tonguing is employed in the usual manner, as well as combined with breath and air sounds.

Key clicks both with and without air are required. Air and breath sounds call for different intensities of unpitched air sounds and air sounds directed to an angle indicated by the position of the symbol on the staff.

Barbara Kolb's Figments is of interest because of the construction, based on its recurring sections or

\[ \text{a tempo } \frac{\Delta}{\text{fil tresg}} \]

percuter les clefs de la main droite.

main gauche, sol.

passer très rapidement sur la plus grande étendue possible - dynamiques et nuances différentes.
"figments" and because of its ensemble problems with the piano. The chance (aleatoric) section, an insert portion, is a good example of this particular medium of expression between two instruments.

The composition contains odd meter, mixed meter, and parts with no meter or bars. Extreme complexity is evident in the ensemble between the flute and piano parts. In the instructions at the beginning, the pianist is urged to know the flute part so well that "complete integration" is achieved. Example 11 demonstrates that this is no small task. Other sections demand a very strict rhythm and tempo.

Suggested metronomic markings are found throughout the work, but where "figments" return in the piano part, they are to be performed at the tempo they were originally introduced, making the flute and piano parts of differing tempi at times.

Wide leaps and unusual interval sequences are found frequently. Dynamics are not any more extreme than in many traditional pieces. Range is not an acute problem, although there are a few awkward passages.

The composition is atonal harmonically. In the unbarred sections, the notation is proportional, indicating duration and some tempo changes. Otherwise, pitch and rhythm are traditional. Symbols and directions are used for most special effects.

Special effects include varying vibrato speeds, tremolo, and the limited use of microtones in a glissando
near the end. Flutter tonguing is required, but no multi-
phonics or percussive sounds are represented.

The insert segment is in three sections with flute
and piano moving independently for the most part. A specific
figure in the flute part, seen in Example 12, signifies the
end of the insert and the return to the body of the piece.

Example 12: Barbara Kolb, *Figments*, concluding meas. of
insert.

![Example 12: Barbara Kolb, *Figments*, concluding meas. of insert.](image)

Oliver Knussen's *Masks* holds interest for the per-
former mainly because of its dramatic and theatrical require-
ments. The composition is divided into six sections.
Physical movement in sections one, three, and six is to be
quite simple. Sections two and four are to be more physically
active. Section five, in areas "a" and "c," must be clearly
separated visually and musically when the performer is asked
to face alternately left and right, according to directions
in the given segment of music. A second score is needed for
the offstage wind chime player.
No meter signatures or bars are used except in section five, areas "a" and "c," where bar lines divide movements right and left. Metronome markings are given throughout the solo with the quarter-note used as the pulse except for one small section, which uses dotted eighth-notes as the pulse.

Both wide leaps and unusual interval sequences are found, along with a large number of fourths. Extreme and frequent dynamic changes are evident, and technical passages at the top of the third octave are prominent in sections four and five.

Harmonically, the composition seems to be twelve-tone with rows prominently displayed in the first twelve notes of the work and in the "Invocation" segment of section five. The last twelve notes of the solo are an exact retrograde of the opening row.

Notationally, the work is standard in regard to pitch and duration. Symbols and instructions are used for special effects.

A slow vibrato speed is specified in three instances. Flutter tonguing is used. Key clicks both with and without air are found, as is a request for a "breathy" tone quality.

Dramatic and theatrical techniques are used in this composition, as shown in Example 13. Peter Yates, in describing some of Harry Partch's use of dramatic and visual effects in his music, points out that these techniques were common in earlier European music and in virtually all
Example 13: Oliver Knussen, Masks, p. 5, lines 4-5.
non-European music due to the fact that this earlier music had its beginnings in ceremony and drama.\footnote{14}

 Appropriately named \textit{Voice}, Toru Takemitsu's composition is filled with effects using the performer's voice. The flutist may also choose to amplify the piece using one contact microphone on the foot joint of the flute and an air directional microphone near the head joint. The flutist is cautioned not to overamplify.

 Takemitsu dedicated the solo to Aurèle Nicolet, another flutist who has done much to advance the cause of contemporary flute music, most notably in his edition of the contemporary flute etudes entitled \textit{Pro musica nova}. \textit{Voice} has a text spoken by the performer which is taken from "Handmade Proverbs" by Shuzo Takiguchi: "Qui va la? Qui que tu sois, parle, transparence! Who goes there? Speak transparence, whoever you are!"

 No meter signature is given. Measurement is in the form of "time blocks" denoting the passage of four to five seconds between these time divisions. Duration of the notes is dependent upon the length of the horizontal bar. Legato is indicated by the connection of note stems with a horizontal bar. Longer notes have clear note heads, while short, staccato notes have black heads. Grace notes are to be played as fast as possible.

Wide leaps and unusual interval sequences are common. Extreme dynamic changes are frequent. Extreme range is not a particular problem. Appearances of $c^4$ are found, but most are isolated. No rapid high third or fourth octave technical problems are found. The composition is not tonal.

The use of symbols to indicate the many special effects widely practiced in this piece makes it an unusually notated composition. Harmonics are used. Microtones are abundant in use as quarter-steps and in glissandi. Tremolo is used only once in an interval of an augmented fourth.

Multiphonics are frequently used. In viewing multiphonics from an historical perspective, Lawrence Singer feels that the impetus for multiphonics on wind instruments came from Schoenberg's construction technique known as "timbre melodies." Singer points to Schoenberg's use of instruments in his compositions by their timbre possibilities rather than their melodic possibilities. He entertains the idea that multiphonics came about as the result of experimentation with new timbre sonorities for existing orchestral instruments.\(^\text{15}\)

Singer, in another article, gives credit for the discovery of the acoustic phenomenon of multiphonics to Professor Antonio Ferrannini of the Conservatory of San Pietro a Majella of Naples. He found this fact in a book published

In 1943 by T. Pace entitled Ancie Battenti.\(^{16}\)

In this composition, Takemitsu supplies the fingerings to be used for the multiphonics, certain tone-color sounds, and certain trills. **Voice** is a much more accessible piece because of the addition of these fingerings for the performer. Example 14 shows some of these fingerings.


Flutter tonguing is a common effect in this piece. Key clicks, both with and without pitch, and tongue clicks are used.

Air and breath sounds include a breath accent without using the tongue and a "half breath" sound. The latter effect has more air than pitch and contains many overtones.

Vocalizations which play the biggest role in the

special effects include humming; shouting and singing; speaking into the flute; speaking, whispering, and shouting with the lips off the flute; and the speaking of a voiced consonant gradually changing to a voiceless consonant in a diminuendo.

Roman Vlad's _Il magico flauto di Severino_ is a contemporary version of a theme and variations based loosely, and certainly not tonally, on material from Mozart's opera _The Magic Flute_. Written for Gazzelloni, the work is quite advanced in terms of contemporary techniques used, especially in relation to the technical skill required to perform it well.

Rhythmically, the composition contains odd meter, mixed meter, and sections which are unbarred. Two areas require some improvisation.

Improvisation is an historical technique well-known by composer/performers such as Landini, Bach, Handel, Mozart, Beethoven, Liszt, and Franck. According to Donald Chittum, the terms "improvisation," "chance," and "indeterminacy" all mean that the composer allows the performer to determine, by certain decisions, the structure of the piece. Chittum also points out that under these circumstances, the player usually can alter the "microstructure" of the composition but not the "macrostructure." In the future, the performer must be able to make spontaneous decisions such as those required
in improvisatory music.\textsuperscript{17}

As David Cope wrote:

Once the composer has admitted that the act of composition is a partially shared responsibility (for whatever reason), it is not a difficult step to understand the motivation inherent in graphic or less exact notational systems.\textsuperscript{18}

As seen in Example 15, the first improvisatory example gives a four-note figure and requires six different permutations of that figure with each of the six using the same starting note as the first figure. The starting notes outline another piece of the Mozart opera theme. Another figure with a different starting note requiring six different permutations is then introduced, and so on. The piano is doing the same process with different note figures.

As Example 16 shows, another improvisatory section uses the original Mozart theme with octave transpositions and simply requires the flutist to improvise rapidly around each of the notes.

Wide leaps and unusual interval sequences are common. While the dynamics contain a range of pppp to ffff, the changes are not frequent. Range requires the performer to play a great deal technically in the upper third octave, and the composition ends on a c\textsuperscript{4}.

The harmony is not tonal, with the theme melody hardly recognizable from Mozart's \textit{Magic Flute} melodic theme.

\textsuperscript{17}Donald Chittum, "Music Here and Now—III," American Music Teacher 21 (February/March 1972): 30, 40.

\textsuperscript{18}Cope, \textit{New Directions}, p. 32.
Il più presto possibile

L'ordine di successione dei singoli gruppi, notato qui, è solo esemplificativo.

Permutare le note come prima, in successione sempre diversa.
Improvvisare intorno alle note indicate, delle lievissime, rapidissime figure (quasi auree) sonore.

(TEMA)

*Andante con moto quasi Allegretto*

(Flute)

*Mezzo piano (mp)*

(Piano)

*p leggero*
Example 17 shows this. The notation is somewhat unusual in the two improvisatory sections discussed earlier. Otherwise, pitch and duration are notated in a relatively standard way. Symbols and instructions are used often for special effects.

The opening of the work uses a number of tone-color fingerings, mainly for the note c^2. Microtones are frequent and on several occasions are used with flutter tongue or with a tone-color fingering. The glissando is present but not often used. The opening calls for a vibrato produced with the jaw, which is used along with the tone-color fingerings. Tremolo is used sparingly.

Extensive use of multiphonics is found in one particular section. Fingerings are given, as well as the type of aperture required by the embouchure to produce the desired effect.

Rapid multiple tonguing and flutter tonguing are both required. No percussive key sounds are found. The flutist is not required to perform any vocalizations, but the pianist is required to either sing or speak one line of lyrics.

Karl Korte's Remembrances calls for alto flute in the first section of the piece, soprano flute in the large second section, and piccolo in a short final section near the end. Contemporary performers may consider the tape accompaniment in twentieth-century flute music as a new type of continuo. This composition exploits interesting sounds in connection with the tape part. The tape is continuous and does not need a person to start or stop it at various cue points.
Tape cues are written into the flute score so that the performer knows where the flute part is in relation to the tape part. Example 18 shows this.

Some of the composition is unmetered, some has only a one-number meter signature; other meters are traditional. Bar lines are present throughout, as are metronomic tempo indications for the quarter-note. Each of the three sections increases in speed. Wide leaps and unusual interval sequences are represented. Upper third octave technical problems are found in several places.

The work is based on a twelve-tone row with some tonal sounds. The first evidences of the row are the fast electronic notes immediately preceding the first flute entrance.

Symbols are used for special effects with mostly traditional notation otherwise. The last section, which was written for piccolo, uses some chance notation with only pulse indicated and no note values assigned.

In the area of special effects, special tone-color fingerings and microtones are used. Some microtones are fingered and others are performed by changing the angle of the air stream.

No multiphonics are used, but flutter tonguing is. The most interesting facet of the piece is the close relationship between the flute sounds and the tape sounds.

Although suggested as an alto flute solo, Donald Erb's *Music for Mother Bear* can easily be performed on
soprano flute in C, as annotated under the title.

The composition is unbarred and has no meter signatures. A tempo indicating $\text{♩} = 60$ is suggested at the beginning, slowing to $\text{♩} = 48$ approximately midway and returning to 60 before the end.

Wide leaps are not characteristic but unusual interval sequences are. Extreme dynamics are not encountered. A representative amount of technical difficulty in the top of the third octave is found.

The harmony is not tonal. The use of artificial scale patterns out of standard order in some of the rapid technical sections create the unusual interval sequences mentioned above.

The composer uses a number of symbols and instructions for special effects, but notation is fairly standard in regard to pitch and duration. Special effects include the use of microtones and three types of glissandi. The most standard glissando is the one using chromatic half-steps. Erb also uses a fingered glissando having only air without pitch and a sung glissando without flute sound. Tremolo is used as a special effect also. Neither multiphonics nor flutter tongued passages are used. Key clicks and tongue clicks are important special effects.

Air and breath sounds include air only while fingering pitches, exhaling into the flute, and an unusual request to make a kissing noise into the flute.
Vocalizations are represented by singing while not playing, singing while playing, and singing while slapping keys. Example 19 shows singing while playing.


Singing while playing is actually one of the older special effects we have. John Heiss says that the earliest example we have of simultaneous playing and singing on flute is on a jazz LP recording from the 1950's featuring Sam Most using this technique. The album title is *The Herbie Mann-Sam Most Quintet*. (Bethlehem, No. BCP-40)\(^\text{19}\)

CHAPTER III

A DISCUSSION OF SELECTED FLUTE ETUDE LITERATURE USING CONTEMPORARY COMPONENTS

The Rhythm of Contemporary Music, The Tonality of Contemporary Music, and Modes in Contemporary Music are the parts of a set of etude materials by Willard Musser and Elliot Del Borgo, which could serve as introductory material for younger students. The material is not taxing for the average high-school student and possibly even younger performers.

The volume entitled The Rhythm of Contemporary Music deals with basic skills. Contained in the volume are: changing time signatures, five and seven-beat measures, changes in pulse-groups without signature alterations, unlike beat divisions, unlike beat divisions with change of time signatures, changes of compound meter to quarter-note units, the quarter-note triplet, beat units containing five notes, fives and various threes, changes of meter with eighth-note remaining constant, and the five-eight and three-eight meter changes. At least two short studies deal with each of these areas.
A second section of the book deals with the same areas on a little more advanced level. The back of the volume defines terms in foreign languages used in the etudes.

In addition to the contemporary rhythmic elements, the volume contains some unusual interval sequences, although much of it is standard. Most of the harmony is tonal, while a representative amount near the end contains modulations, modal progressions, and a small amount of atonality. Notation is standard, and no special effects are used.

The Tonality of Contemporary Music deals with the basic skills in this area. This section includes modulations to closely related major keys, modulations to and from closely related minor keys, modulations and the use of chromatically altered chords, modulations to remote keys, rapidly shifting key centers, etudes based on synthetic scales, atonality with a recurring point of arrival, tone rows, and free atonality. Section two of the book expands these areas and, like the volume on rhythm, defines foreign terms in the back.

Rhythmically, this volume is almost completely traditional, containing only one example of simple mixed meter. A significant number of wide leaps is contained, especially at this moderate difficulty level. Unusual interval sequences are evident due to the presence of atonality and tone rows in some of the etudes.

The harmony includes traditional tonalities, atonality, tone rows, and synthetic scales. The notation is traditional, and no special effects are found.
Modes in Contemporary Music explores patterns in the following modes: dorian, phrygian, lydian, and mixolydian. In addition to the harmonic basis of modes, the etudes rhythmically contain both odd meter and mixed meter. Melody is standard in leaps, interval sequences, and range. Notation is traditional, and there are no special effects.

Samuel Adler's Harobed—Seven Studies for Flute Alone could possibly be used for solo material as well as etude material. The compositions are well-written for use as instructional etudes. Adler has also composed instructional material for piano in a work called Gradus: Forty Studies for Piano (1971), which is used by pianists as an introduction to contemporary techniques for that instrument.¹

Rhythmically, some contain significant mixed meter, one uses odd meter, and several contain traditional writing. Metronomic tempos are marked. The harmonic basis is built on modes and on atonality. Notation is standard, and no special effects are used.

David Porcelijn's Communications for Easy Flute and Modern Flutist succeeds in its attempt to introduce some contemporary elements to less advanced flute students. Rhythmically, the etudes contain odd meter and mixed meter. The more advanced etudes near the end have no meter signature and no bar lines. In the unbarred studies, the length of the

note beam determines duration.

Harmonically, the studies contain examples of atonality, tone rows, and a sampling of quartal harmony. The harmonic background causes rather wide leaps for this difficulty level and also causes unusual interval sequences for the same reason. Extreme dynamics are found in a few etudes, principally in the three unbarred studies.

Notation is also unusual in the three unbarred studies in the area of duration, as mentioned above. Note stems determine note lengths, as shown in Example 20. Grace notes are used to indicate extremely rapid note values. Otherwise, the notation is traditional, and no special effects are found.

David Gornston's *Weird Etudes*, first released in 1936, was one of the initial efforts in devising contemporary etudes. Today it can be valuable for sight-reading study. The etudes are of very moderate difficulty.

Rhythmically, the volume is entirely traditional. Harmonically, the volume contains both atonal and modal material. While contemporary composers since 1936 have begun to apply their atonality through the use of large numbers of accidentals placed before notes, Gornston surmised at that time that later composers would write unusual key signatures, such as the ones in Example 21.

Melodically, the atonality creates unusual interval sequences. Notation is standard except for some of the key
Example 20: David Porcelijn, Communications for Easy Flute and Modern Flutist, #11, Line I.
Example 21: David Gornston, Weird Etudes, #9 and #10.

\[ \text{\includegraphics{example21.png}} \]

signatures, and no special effects are used.

Everett Gates' Odd Meter Etudes are valuable intermediate level rhythmic studies, which may be used by any treble instrument. On the flute, some may be performed more successfully transposed up an octave. The first two pages of the collection deal solely with the various combinations of rhythms to be used in the subsequent twenty-one etudes.

As the title would suggest, the bulk of the etudes have unusual meter signatures such as the one in Example 22. Others have either odd-numbered groupings of notes or syncopation, which causes a feeling of irregular beats.

Example 22: Everett Gates, Odd Meter Etudes, #11, line 1.

\[ \text{\includegraphics{example22.png}} \]

Melodically, unusual interval sequences are the only nontraditional elements found, owing to the harmonic background which is based on modal and contrived scales, and
twelve-tone rows. Some traditional tonality also is used. Notation is standard, and no special effects are found.

Flötenstudien im alten und neuen Stil, edited by Erich List, appears in three volumes, each subsequent volume more technically difficult than the other, starting at the intermediate level and progressing to the advanced. The flutist must search selectively to find those studies which contain contemporary elements. The three volumes contain studies dating from the eighteenth-century through the twentieth-century works.


Collectively, these etudes contain odd meter, mixed meter, and traditional rhythms. Volume three contains rhythms of extreme complexity.

Harmonically, the range includes tonal, atonal, and modal examples. Wide leaps, unusual interval sequences, and extreme range all become more acute as the flutist progresses in volume three. Notation is standard, and the only special effect is flutter tonguing, which is found in volume three.
Harald Genzmer's *Neuzeitliche Etüden*, published in 1956, are among the earlier etudes in the contemporary style. The studies are contained in two volumes with the second of increased difficulty. These studies also demand a high degree of musicianship as well as technical skills.

Rhythmically, the studies contain odd meter and mixed meter, as well as traditional rhythm patterns. Harmonically, the volumes contain freely modulating tonal studies, chromatic studies, and some studies which hint of atonality. Wide leaps and unusual interval sequences result. Extreme range is evident in volume two.

Notation is traditional, and only one special effect is used. Specifically, the last etude in volume two is devoted totally to harmonics.

Arthur Brooke's *Harmonic Fingerings for the Flute* is a collection of studies dealing solely with harmonics. Despite the fact that the original intent of this etude book has no relation with contemporary uses of harmonics and despite the fact that no other aspects of these studies contain any contemporary elements, these harmonic studies can be valuable in the preparation of contemporary music.

In order for a performer to play harmonics accurately, the embouchure placement must be developed. These concentrated studies help. The etudes also make the student aware of more than one fingering for the various harmonics and the intonation disadvantages of each. Harmonic fingerings also
can help with awkward fingerings for tremolos found in contemporary music. Because of the close connection between fingerings and embouchure techniques used in harmonics and those used in multiphonics, a contemporary purpose for studying harmonics exists.

Marcel Bitsch's *Douze études pour flûte*, while not extremely contemporary in style, nevertheless can prove valuable in certain areas of technical study for preparation in playing contemporary music. Each study emphasizes some aspect of instruction.

Contemporary elements include odd meter, mixed meter, and one instance of no meter or bar lines. Melodically, only wide leaps and unusual interval sequences are present.

Harmonically, the studies are tonal, with frequent modulation, some chromatic writing, and some atonality. Notation is traditional. Aside from two etudes dealing with rapid multiple tonguing, which is not used here as a special effect, there are no other special effects.

Max Fühler's studies, *Zwanzig Impressionen für Flöte solo*, could be used as unaccompanied solos, if desired. Each etude is titled. The collection definitely is useful for contemporary instructional purposes. The etudes demand musicianship as well as technical facility.

Etudes containing odd meter and mixed meter are interspersed with traditional rhythmic writing, as shown in Example 23. Melodically, unusual interval sequences are the
only contemporary aspects.


Some flutists refer to Fühler's harmonic structure as being polytonal. In this collection of studies, perhaps atonality and chromaticism are more prevalent. Notation is standard, and there are no special effects.

The Introduction to Heiner Reitz's *Twelve Caprices for Flute Solo*, op. 4 places the collection of studies stylistically between the impressionistic studies of Paul Jeanjean and the avant-garde studies edited by Aurèle Nicolet.

The collection contains no meter signatures, yet most of the studies do contain bar lines. Two of the studies are unbarred.

Wide leaps are found in a representative number of etudes. Technical work in the third octave also adds range problems. Unusual interval sequences are present due to the atonality, chromaticism, pentatonic scales without semi-tones, and whole-tone scales.
Notationally, the collection is standard, with the exception of symbols for the two special effects, downward quarter-tone glissandi and flutter tonguing. Examples of the downward quarter-tone glissandi are shown in Example 24.


\[-= \text{Glissando abwärts } \frac{1}{4} \text{ Ton}\]

Marlaena Kessick's work, *Venti studietti preparatori alla musica contemporanea per flauto*, represents one of the finest contemporary instructional volumes available on the advanced level. Rhythmic components include all areas of the general criteria included in this paper: odd meter, mixed meter, unbarred studies, and extreme complexity due to rhythm patterns and placement of rests.

Melodic lines contain wide leaps, unusual interval sequences, extreme dynamics, and very extreme range. The range commonly extends to $d^4$, with $e^4$, $e^4$, and $f^4$ also found. Some of the etudes include piccolo in C and alto flute in G.

The etudes are not tonal. Some symbols for special effects are used, and some unusual notation is found. The last etude uses graphic notation, as shown in Example 25.
Example 25: Marlaena Kessick, *Venti studietti preparatori alla musica contemporanea per flauto*, #20, line 2.

The first, somewhat horizontal mark, with sharp angles, represents a long line with intervals which suggest dramatic leaps. The two curved lines express softer, more closely connected intervals such as chromatic configurations, quarter tones, or even soft arpeggios. The close vertical lines of different lengths represent staccatos of various notes.

This type of notation has often been misunderstood by many performers. In viewing unusual forms of notation, one must remember that the basis behind any notation is the desire of the composer to communicate his ideas. As David Cope says, "The notation is designed so that the performer will react with a high degree of predictability." 2

Otherwise, most of the etudes use traditional notation for pitch and duration. Special effects include harmonics, microtones, varying speeds of vibrato, tremolo, multiphonics, (also flutter-tongued multiphonics) flutter tonguing, key

clicks both with and without pitch, and aleatoric compositional elements.

The *Pro musica nova*, a collection of etudes by various composers and edited by Aurèle Nicolet, is overwhelming, to say the least. This volume is probably one of the most extensive collections of various contemporary elements available, and its complexity is extreme.

Composers represented are: Wolfgang Hufschmidt, Anatol Vieru, Heimo Erbse, Konrad Lechner, Yoram Paporisz, Yannis Toannidis, Edison Denissow, Paul-Heinz Dittrich, Franco Donatoni, Jacques Wildberger, Heinz Holliger, and Klaus Huber. Fortunately, performance notes are included for each etude, translated into English. Fingerings for the various multiphonics, trills, and tone-color changes are provided.

The etudes in this collection cover the gamut of contemporary composition, and the types of special effects far exceed the general outline of contemporary elements used to categorize the other works used in this study. Rhythmically, most of the studies have no meter signature, although odd meter and mixed meter are both found. A number of the studies are unbarred and many fall into the category of being extremely complex.

Melodically, wide leaps and unusual interval sequences are present due to the atonal and serial harmonic structure. Extreme dynamics and extreme range both are common in these studies.
Notationally, many symbols and instructions are found in the area of special effects. Unusual notation also is found, most notably in the etude by Konrad Lechner, which contains graphic notation, as shown in Example 26. The flutist first covers the blow hole completely with the mouth. Next, following the up or down direction of the line, the flutist alternately inhales and exhales air, starting with an almost closed mouth cavity, and progressing to an open mouth cavity. The vertical lines represent a double-tongued repetition of the same note, with different strengths of attacks, different angles of the air stream, and different sizes of mouth cavity. The blow hole remains enclosed by the mouth.


Special effects contained in this collection are numerous and varied. A general key to symbols is included in the front of the volume. Single sounds include harmonics, tone-color fingerings, microtones, glissandi, and varying
vibrato speeds. Varying amplitudes of vibrato are also found. Multiphonics are used a number of times.

Rapid multiple tonguing, flutter tonguing, breath attacks, and the striking of the tongue in the middle of the blow hole are used as articulation effects. Percussive effects include key clicks both with and without pitch and tongue clicks (sipping sounds). Air and breath sounds found in the collection include the following: whistle tones, blowing into the enclosed mouth hole with open and closed mouth cavities, different air angles, different attacks, and enclosing the mouthpiece with the mouth while inhaling and exhaling air.

Vocalizations include "broken voice," which is a half groan from the glottis. Also found is the technique of singing or speaking vowels into the flute.

Amplification is dealt with in several ways. A contact mike is used in the end cap of the flute headjoint. A contact mike also may be used on the body of the flute. Also possible is the use of a multi-directional mike and a laryngeal mike.

The only general contemporary elements not explored are theatrical and dramatic techniques. Another technique found in this collection, but not falling under a particular category, is the use of lip vibration or buzzing, such as that used in playing a brass instrument. This technique is employed in order to play notes lower than c¹. Circulatory breathing is represented. This is the technique of inhaling
through the nose, while continuing to play by forcing reserve air from the mouth cavity with the cheek muscles. Improvisation is also found.

The Thirty Caprices by Sigfrid Karg-Elert were some of the first ventures in flute etude literature contrary to traditional compositional techniques. Rhythm is the primary factor that makes these etudes more contemporary than traditional. Odd meter and mixed meter are both prevalent. Some rhythmically traditional etudes are included in the volume also. Some etudes contain groupings of notes carried across bar lines, which lead to a feeling of meter change, as seen in Example 27.

Example 27: Sigfrid Karg-Elert, Thirty Caprices, #2, line 4.

Wide leaps and unusual interval sequences are present, although melodically much traditional writing is present.

Harmonically, there is a representative amount of standard tonal writing. The contemporary sounds in some of the etudes are the result of very chromatic composition, which in some cases might include atonality. Notation is standard with flutter tonguing the only special effect.
Paul Rynearson's work, *Eleven Contemporary Flute Etudes*, represents a collection of reasonably short compositions covering a broad range of techniques. These etudes are not of the difficulty level of such studies as the Kessick or the Nicolet.

The last seven studies have no meter signature and no bar lines. "Time line" notation is used in place of measures. The lines appear above the notes where the pulse is to be felt, as seen in Example 28. Metronome markings for the pulse are included.


\[\text{Mixed meter occurs in only one study. Extreme complexity is characteristic of the first study due to the placement of rests. Some of the rhythmical writing is traditional.}\]

Wide leaps and unusual interval sequences are common. Extreme dynamics are frequent in the last seven studies, and extreme range is found throughout. Atonality and serial writing are present. The last eight studies are serial compositions.
Symbols are used for special effects. Harmonics, tone-color fingerings, microtones, glissandi, (both fingered and changed by the angle of the air stream) tremolo, and varying vibrato speeds are all used.

Multiphonics and flutter tonguing are found. Key clicks without pitch represent percussive effects. Another effect results when the performer is instructed to play into a grand piano with the damper pedal depressed throughout the etude. This instruction creates one of the few theatrical/dramatic techniques found in any of the contemporary etudes.

Jacques Castérède's collection, *Douze études pour flûte*, is an excellent group of technical exercises for the college level. While not extremely contemporary in nature, these studies do offer some contemporary elements.

The contemporary techniques are most strongly represented in the area of rhythm, as seen in Example 29. These etudes contain odd meter, mixed meter, traditional meter, extreme complexity, and one unbarred study. The unbarred etude is more properly in cadenza style than contemporary improvisational style.

Wide leaps are abundant with unusual interval sequences present but less common than the leaps. In many instances, the etudes are melodically traditional.

Harmonically, there are instances of atonality, artificial scales and modes, and standard tonality. Notation is standard and no special effects are included.

Isang Yun's work, *Etüden Flöte(n) solo*, consists of five studies in which the various instruments of the entire flute family must be played. Of five etudes, the first calls for flute in C, the next for alto flute in G, then piccolo, then bass flute in C. The last etude ends with the flute in C again.

Melodically, the studies contain wide leaps, unusual interval sequences, extreme dynamics, and extreme range. Rhythmically, the etudes are standard except for extreme complexity. Some of the patterns found are quite difficult.

Harmony is not tonal, and symbols are used for special effects. Microtones and multiphonics are both found, along with tremolos, as shown in Example 30. Fingerings for the multiphonics are provided in the preface of the work. Flutter tonguing is used, as are key clicks with pitch. Air and breath sounds include a breathy quality sound, a sound with
Example 30: Isang Yun, Etüden Flöte(n) solo, p. 9, measures 75-77.

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more breath than sound, and a breath attack with breath only and no recognizable pitch. Other special effects found are a double tremolo and quasi pizzicato, both of which have fingerings given at the beginning of the volume.

Eugène Bozza's Dix études sur des modes karnatiques pour flûte is a collection of studies based on modes found in India. A Karnatic scale has seven main notes in an octave, as seen in the first two lines of Example 31. The names of these seven notes have abbreviated names much like a version of our traditional solfege system. (sa, ri, ga, ma, pa, dha, ni) This octave can then be further divided into microtonal notes much like quarter tones. These quarter tones are not tuned to equal temperament, however. The type of melody or "raga" is defined by the scale used. A system of "tala" represents rhythm, as seen in the last two lines of Example 31. A "tala" is a time-measure containing a fixed number of beats which are arranged in recognizable groupings. Bozza

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writes out and names twenty-four of the Karnatic modal scales beginning on c¹. He also gives nine of the rhythm patterns in which the scales are to be practiced before beginning the etudes.

Example 31: Eugène Bozza, Dix études sur des modes karnatiques pour flûte. Introduction.

Rhythmically, the etudes contain odd meter and mixed meter. Several have no meter and no bar lines. Some etudes could be classified as extremely complex rhythmically. The melodic writing contains wide leaps, unusual interval sequences, extreme dynamics, and extreme range.

The harmonic basis is obviously the Karnatic modes. Notation is standard with symbols for special effects. Harmonics, quarter tones, glissandi, and tremolos are all
represented. Flutter tonguing is also found.

Reinhard Lüttmann's collection, *Douze études dodecaphoniques pour flûte*, is based on two tone rows given at the beginning of the volume. In addition to offering practice in dealing with the twelve-tone technique, the studies also have other contemporary study values. Along with great technical difficulty, the études contain odd meter, mixed meter, and unbarred studies.

As expected in much tone-row music, wide leaps, unusual interval sequences, extreme dynamics, and extreme range are all present. Notation is somewhat unusual in the eighth study, which uses "time lines" instead of bar lines. Duration in several studies is determined by the length of the note stem. Symbols are used for special effects. Instructions and a key to the special effects are listed in the front. Microtones, glissandi, varying vibrato speeds, and tremolos are contained in these studies. Example 32 shows quarter-tone glissandi. Multiphonics are used, usually as a harmonic sounded simultaneously with the fundamental.

Example 32: Reinhard Lüttmann, *Douze études dodecaphoniques pour flûte*, #11, line 1.
Flutter tonguing and key clicks with pitch are used. One air sound with pitch is used on a diminuendo, where only air is finally heard.

Gaston Dufresne and Robert Voisin's Develop Sight Reading progresses from reasonably simple to very complicated studies. In particular, this volume can provide good material for contemporary rhythmical study. Odd meter, mixed meter, standard rhythm, and studies of extreme complexity all are found. Melodically, the studies contain some wide leaps, some unusual interval sequences, and some traditional writing.

Harmonically, many of the studies have no tonality. Notation is standard, and no special effects are found. The reason for the lack of any effects probably is due partially to the fact that this volume is for use with any treble instrument.

Eugène Bozza's four studies, Graphismes, were composed specifically for preparing the advanced flutist for the types of writing to be encountered in contemporary music.

Rhythm and meter types include odd meter, mixed meter, unbarred and partially barred sections, and patterns of extreme complexity.

Using extreme range all the way up to "the highest note possible," the studies also contain wide leaps, unusual interval sequences, and extreme dynamics. Harmonically, the etudes are both atonal and modal.
Notation includes symbols for special effects. Example 33 shows notation indicating that in the two groupings of notes the pitches in a particular group may be played improvisationally in any order or direction.

Example 33: Eugène Bozza, Graphismes, #1, line 3.

Special effects found are harmonics, microtones, glissandi, varying speeds of vibrato, and tremolo. No multiphonics or percussive sounds are used. Flutter tonguing is used sparingly.

Françoise Rieunier's etude collection, Vingt-deux déchiffrages rythmiques instrumentaux pour tous les instruments, offers representative contemporary elements in all areas except the use of special effects. For a flutist without a great deal of prior experience, these etudes would prove to be formidable sight-reading studies. Even when studied as etudes, they are difficult.

Odd meter and mixed meter both are found. All of the etudes have measures, but the rhythmic function of the measures in some, particularly those with no meter signature, is confusing. The placement of some bar lines is used to
indicate a particular number of seconds, while in other locations the bar lines change the note value of the beat.

Dynamics, interval sequences, and wide leaps are characteristically contemporary. Harmonically, there are no accidentals and no key signatures in the entire volume. Despite this, tonality is not apparent. Therefore, the entire volume suggests a modal flavor.

Notation is unusual at times in regard to aleatoric passages, duration, and speed. Tremolo is found, but no other special effects.

Julien Falk's work, Quinze études atonales pour flûte, evidences increasing difficulty towards the end. Most of the studies, however, could be comfortably used on the advanced high-school level in working with atonality.

Represented in the volume are études with odd meter, mixed meter, no bar lines, and several which could be considered extremely complex on the high-school level. As expected with atonal exercises, wide leaps, unusual interval sequences, and extreme range are found. Chromatic glissandi, and limited use of harmonics and flutter tonguing are the only special effects.

Giuseppe Ruggiero's collection, Seize études atonales, offers much more than just atonality in the way of preparing a student for contemporary elements. Rhythmically, the études offer excellent preparation in the areas of odd meter, mixed meter, no meter signature or bar lines, and extreme
complexity.

Due to the atonal harmonic base, the melodic lines offer wide leaps, unusual interval sequences, and extreme dynamics. Notation is rather standard, with symbols used for special effects. Special effects found are harmonics, glissandi (both chromatic and microtonal), and varying vibrato speeds. Others represented are key clicks with pitch and breath accents.

Domenico Vinci's composition, *Dodici studi per flauto*, borders on being too traditional for inclusion in this paper. However, certain aspects can prove valuable to the student working gradually into more advanced contemporary techniques.

The primary value found in the studies is in the area of rhythm. Odd meter, mixed meter, and extreme complexity are all found. Wide leaps and extreme range are used as well as traditional melodic movement. The harmony is primarily tonal with two very chromatic studies.

The notation is standard, with harmonics as the only special effects. However, the harmonics are used as alternate fingerings to simplify a difficult passage in the third octave rather than as a contemporary effect.

Kazimierz Rozbicki's volume, *Trzy etiudy na flet i fortepian*, represents one of the earlier (1959) collections of studies containing contemporary elements. A piano accompaniment is included. The piano part, along with the fast-
slow-fast tempo indications of the respective movements, 
might indicate that the volume could be performed as an 
entire three movement work in a recital situation.

The second etude contains both odd and mixed meters, 
while the outer two studies are traditional rhythmically. 
All three etudes contain some elements of extreme complexity, 
usually due to the changes in the number of notes in a beat 
grouping.

Melodically, the etudes contain wide leaps, unusual 
interval sequences, and extreme range. The etudes are not 
tonal, and the piano accompaniment uses a number of chords 
based on perfect and augmented fourths, along with perfect 
and diminished fifths. Predominantly, traditional notation 
is found. Symbols are used for harmonics, tremolo, and 
flutter tonguing.

Finn Mortensen's work, *Five Studies for Flute Solo, 
op. 11*, has been used as an entire solo for flute alone. 
These studies can offer valuable pedagogical material for the 
student as well. All five of the studies have no meter 
signatures and no bar lines. Suggested metronome markings 
are placed at the beginning of each study. Despite the lack 
of bar lines, extreme rhythmic complexity is found in three 
of the five. Example 34 shows a complex passage.

The atonality of the studies causes wide leaps and 
unusual interval sequences. Extreme dynamics are represented 
in three of the studies, and extreme range also is found.
Example 34: Finn Mortensen, Five Studies for Flute Solo, op. 11, p. 9, line 7.

Notation is standard except for symbols used for harmonics and flutter tonguing.

Adriaan Bonsel's collection, Acht concert etudes voor fluit-solo, contains no special effects, but offers other contemporary elements. The studies could be used quite well as sight-reading material on the college level. Odd meter, mixed meter, and extreme complexity are found.

The studies provide beautiful examples of music based on artificial scales. Each study uses a different scale, and that scale is written out at the beginning of the etude for practice purposes.
Understandably, wide leaps and unusual interval sequences are found melodically. Notation is traditional, but the calligraphy is handwritten, similar to that found in manuscript. The manuscript makes the music harder to read, but is more realistic when considering that a great deal of contemporary music being performed must be read from manuscript.
CHAPTER IV

SUMMARY

In comparing the contemporary components found in a sampling of selected contemporary flute solos with those found in contemporary flute etude materials, the existing body of flute etude literature contains a surprisingly representative number of some contemporary elements and an obvious lack of a few others. In most instances, the flutist should be able to find etude material dealing with a wide variety of techniques used in the solo literature.

Recommended areas for further related study not in the scope of this paper include: (1) the present frequency of use of existing contemporary flute etude materials at all levels of pupil development and in all types of flute teaching; and (2) the relationship between the use of etude material containing contemporary components, and the transferability of skills to the performance of contemporary solo literature.

Available etude collections using contemporary components provide ample material for flutists in the areas of contemporary rhythm, meter, melody, and harmony. In the area of unusual notation, however, the etude literature is relatively sparse. More popular in most of the etude collections
is the use of symbols for special effects, thus acting as an extension of existing notation.

The area of special effects most clearly points out the gap that exists between contemporary solo composition and contemporary etude composition. Twelve of the etude collections contain no special effects. Only three of the etude collections contain more than four special effects under the category of single sounds. Also, tone-color fingerings are especially scarce. Only five of the thirty etude collections deal with multiphonics.

Instances of the use of rapid multiple tonguing as a special effect are reasonably common in the solo literature, but lacking in the etude literature. The argument could be made that there is an abundance of rapid multiple tonguing in the more traditional flute etude literature. Further investigation could reveal a difference, however, in the performance techniques of multiple tonguing as a special effect.

Air and breath sounds are generally not given wide treatment in the etude collections. The same is true of vocalizations. While the use of amplification in solo literature has gained recently in popularity, a definite shortage of microphone and amplification techniques is evident in the etude literature. The same situation exists with theatrical and dramatic techniques.

The difficulty levels of the etude collections in this study vary widely. A shortage of extremes, very easy or very difficult, seems to be the case. Only five of the collections
seem to be appropriate for the pre-high school flutist: the Adler Harobed, the Gornston Weird Etudes, and the three volume Musser-Del Borgo series: Modes in Contemporary Music, The Rhythm of Contemporary Music, and The Tonality of Contemporary Music.

Several collections of studies would be appropriate for the advanced high school or young college student: the Dufresne-Voisin Develop Sight Reading, the Falk Quinze études atonales pour flûte, the Gates Odd Meter Etudes, volume one of the Genzmer Neuzeitliche Etüden, the Karg-Elert Thirty Caprices, the List edition of Flötenstudien im alten und neuen Stil, and the Porcelijn Communications for Easy Flute and Modern Flutist.

On the level of extreme difficulty, the list includes only two, the Nicolet edition Pro musica nova and the Kessick Venti studietti preparatori alla musica contemporanea per flauto. The rest of the collections contain somewhat varying degrees of college-level literature.

In many cases both the solo and the etude literature need further explanation of performance techniques by the composer. This need is especially evident in the area of special effects. In some instances partial explanations or charts are provided which do not suffice. For example, a composer may include a symbol for a glissando in a preface introducing the composition. If the composer fails to explain how the glissando is to be accomplished, possibilities include a chromatic glissando, a diatonic glissando, a
microtonally-fingered glissando, a glissando produced by changing the angle of the air stream in combination with fingerings, and even a head joint glissando) the result can be undesirable. Similarly, fingerings for tone-color changes and multiphonics are often omitted by the composer. Poor translations of instructions originally written in another language also present formidable barriers.

Composers must realize that many of the performance practices of special effects are not yet common knowledge among even the more advanced flutists. Hopefully, through publications such as those by Robert Dick\textsuperscript{1} and Thomas Howell\textsuperscript{2}, through master classes by prominent avant-garde performers, and through the growing number of recordings of contemporary music, flutists can expect to have many of today's techniques as part of their musical skills in a few years. Newer techniques continue to appear, however, and the acceptance of contemporary compositions can only be abetted and enhanced by more explicit instructions in the music.

\textsuperscript{1}Robert Dick, \textit{The Other Flute} (London: Oxford University Press, 1975).

BIBLIOGRAPHY

Music-Etudes and Studies


Music-Solo Literature


Books, Articles, and Catalogs


Heiss, John. "For the Flute: A List of Double Stops, Triple Stops, Quadruple Stops, and Shakes." Perspectives of New Music 5 (Fall-Winter 1966): 139-41.

Heiss, John. "Some Multiple Sonorities for Flute, Oboe, Clarinet, and Bassoon." Perspectives of New Music 7 (Fall-Winter 1968): 136-42.


______. "Music from the Electronic Universe." High Fidelity, August 1964, pp. 54-57.


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APPENDIX A

The following listing contains the names of the solo literature and the etude literature used in this study. The numerals correspond to the "solo number" or the "etude collection number" in Appendices B, C, D, and E.
APPENDIX A

Numerical Listing of Solo Literature

2. Chou Wen-Chung.  *Cursive.*  (fl. & piano)
3. Davidovsky, Mario.  *Synchronisms No. 1.*  (fl. & tape)
4. Erb, Donald.  *Music for Mother Bear.*  (fl.)
5. Knussen, Oliver.  *Masks, op. 3.*  (fl. & wind chimes)
10. Sfetsas, Kyriacos.  *Improvisation pour flûte seule.*
13. Vlad, Roman.  *Il magico flauto di Severino.*  (fl. & p.)
15. Zimmermann, Bernd Alois.  *Tempus loquendi.*  (fl.)

Numerical Listing of Etude Literature

APPENDIX A—Continued


8. Dufresne, Gaston and Voisin, Robert L. Develop Sight Reading.


19. Mortensen, Finn. Five Studies for Flute Solo, op. 11.


30. Vinci, Domenico. *Dodici studi per flauto.*
APPENDIX B

The following listing shows the contemporary components found in selected flute solo literature. In order to pinpoint the location of materials dealing with a certain component, the chart can be read horizontally. In order to determine the components found in a given material, the chart can be read vertically.

The solo numbers correspond to the listing in Appendix A.
APPENDIX B
Contemporary Components Found in Selected Flute Solo Literature

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APPENDIX C

The following listing shows the contemporary components found in selected flute etude literature. In order to pinpoint the location of materials dealing with a certain component, the chart can be read horizontally. In order to determine the components found in a given etude collection, the chart can be read vertically.

The etude collection numbers correspond to the listing in Appendix A.
## APPENDIX C

**Contemporary Components Found in Selected Flute Etude Literature**

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APPENDIX D

The following listing shows the special effects found in selected solo flute literature. In order to pinpoint the location of solos using a certain special effect, the chart can be read horizontally. In order to determine the special effects found in a given solo, the chart can be read vertically.

The solo numbers correspond to the listing in Appendix A.
APPENDIX D

Special Effects Found in Selected Flute Solo Literature

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APPENDIX E

The following listing shows the special effects found in selected flute etude literature. In order to pinpoint the locations of etude collections using a certain special effect, the chart can be read horizontally. In order to determine the special effects found in a given etude collection, the chart can be read vertically.

The etude collection numbers correspond to the listing in Appendix A.
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VITA

Constance Grambling Lane was born August 6, 1946, in Jonesboro, Louisiana. She attended elementary and secondary public schools in Minden, Louisiana. Her Bachelor of Music Education degree from Centenary College of Louisiana was awarded in 1968. The Master of Music in flute performance was awarded in 1970 from Louisiana State University.

She has also received further applied study in master classes with Julius Baker at the New College Music Festival at Sarasota, the Jean-Pierre Rampal master classes at Nice, France, and with Maurice Sharp at the Blossom Festival School of the Cleveland Orchestra. Her orchestral experience includes positions as principal flutist with the Shreveport (LA) Symphony, the Lakeside (OH) Symphony, the Columbia (SC) Philharmonic Orchestra, and the South Carolina Chamber Orchestra. Presently serving as "Newsletter" editor of the South Carolina Music Teachers Association, she was named "1977 Member of the Year."

Since 1971, she has been a faculty member at the University of South Carolina, serving as assistant professor of flute.
EXAMINATION AND THESIS REPORT

Candidate: Constance Grambling Lane

Major Field: Music

Title of Thesis: A Comparison of Contemporary Components used in Selected Twentieth-Century Flute Solo Literature with Contemporary Components Found in Twentieth-Century Flute Etude Material

Approved:

[Signatures]

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination:

April 25, 1979