

FOLKWAYS RECORDS FPX 6050

Electronic Music from The Outside In

A narrative exploration, with examples, of how six major electronic music works are put together — from the University of Texas -Austin Electronic Music Center

FEATURING MUSIC BY BARTON McLEAN, PRISCILLA McLEAN, KEVIN HANLON & REED HOLMES

M
1473
E447
1980

MUS LP

FXM 36050
2x12" L.P. in Box
with notes
List Price \$19.96

Electronic Music from The Outsider

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DESCRIPTIVE NOTES ARE INSIDE POCKET

SIDE I:

Barton McLean: *Heavy Music* for Four Crowbars (exploring music concrete techniques—putting together a whole subsection of the work). 18'

SIDE II:

Barton McLean: *The Sorcerer Revisited* (main emphasis—computer control of synthesizers. Layering channels on top of one another). 20'

SIDE III:

Reed Holmes: *Nova* (Analog electronic studio techniques. Composing with the synthesizer). 9'

Kevin Hanlon: *Through to the End of the Tunnel* (live electronic performance, using tape delays). 8'

SIDE IV:

Priscilla McLean: *Night Images* (Analog electronic studio techniques). 9'

Priscilla McLean: *Invisible Chariots* (From simple to complex—building a sound event). 1st movement. 11'

In all cases but the last, the composer will demonstrate, immediately followed by the whole work. In the last case, Invisible Chariots, already existing on a Folkways recording, will only be demonstrated, the listener being urged to buy the other recording.

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COVER DESIGN BY RONALD CLYNE

FOLKWAYS RECORDS FPX 6050

FOLKWAYS RECORDS Album No. FXM 36050

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University of Alberta
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ELECTRONIC MUSIC FROM THE OUTSIDE IN



The McLean Mix on tour.

A DIFFERENT APPROACH

Electronic music, in its slow maturing over the past thirty years, has inexorably grown beyond the experimental stage where even the most basic synthesizer sound would evoke interest and promises of future potential from the critics. This early and often misplaced rash of enthusiasm has given way to an equally misplaced apathy on the part of the critics, stylish composers, and general public, and at a time when a smaller number of dedicated creative individuals have quietly been producing and recording works of ever more sophistication and depth while advancing the state of the art of electronic music composition to a new maturity. It therefore seemed quite natural, in developing this new "how to" approach to electronic music composition directed toward the general public as well as the active electronicist via recording, to depart from earlier directions which stressed basic waveforms, etc., and, as the point of departure, to present finished electronic musical works.

In this exploration and presentation of six works of widely varying technical and stylistic biases, each of the four composers in turn narrates what he or she feels to be the salient technical, compositional, or philosophical tenants of the work, with numerous examples. The presentation of these examples transports the listeners directly into the studios where sections of the composition are recreated and re-

assembled before their ears. The secrets are shared here, and to the extent that time permits, after each narration with examples the complete work is played in its entirety (with the exception of *Invisible Chariots*, which is available on Folkways Recording FTS 33450).

Electronic Music From the Outside In is not a self-contained text but is designed particularly as a supplement for use in various formal situations (new music, electronic music, general music survey, and music theory courses). It also exists on its own for the private listener as a fascinating exploration into the creative worlds of four individuals and as such imparts technical, compositional, and human insights into the creative process.

THE MUSIC

A wide divergence of styles and techniques prevails in the six works. Perhaps the most abstract of them all, *Nova*, is a study in densities and textures. *Invisible Chariots* (Mvt. 1) combines an uncompromising abstract quality with strong human gestural and emotional content. Unlike the others, *The Sorcerer Revisited* and *Heavy Music for Four Crowbars* both have a strong rhythmic beat, allowing for several displays of virtuosity. *The Sorcerer Revisited* creates the illusion of a traditional harmonic language, but in reality this

harmonic content bears little relation to our tempered 12-note-to-the-octave scale. Speaking of tonality, *Night Images* and particularly *Through to the End of the Tunnel* are the most unabashedly tonal, but again not in the traditional sense. Both are works of quiet, introspective beauty, providing contrast to the boisterous *Sorcerer Revisited* and *Heavy Music* and the symphonic *Nova* and *Invisible Chariots*.

Although these works differ widely in style, they do possess some common threads. Each is a product of meticulous craftsmanship in an environment which allowed large amounts of studio time. In addition, each had the active participation or encouragement of Barton McLean in some capacity or other (Kevin Hanlon and Reed Holmes prepared their electronic works in the University of Texas Electronic Music Center under his direction).



Priscilla McLean in home studio.

THE COMPOSERS

BARTON McLEAN (1938) received his most influential early training in composition from study with Henry Cowell, working in the electronic studio of Indiana University, and study and collaboration with Bruce Hemingway, Michael Babcock, and Jay Williams. In addition to his extensive recorded output and performance touring (see below) he is extremely active on the national composition scene as Executive Committee member of the American Society of University Composers, co-producer of the nationally syndicated Radiofest-New American Music, author of numerous articles in *Notes*, *Synapse*, *Polyphony*, and the *ASUC Newsletter* (where he has a regular column) and other journals. He has won numerous fellowships and awards and is currently (1980) director of the Electronic Music Center and teacher of composition at the University of Texas-Austin. A recent *Musical America* review describes his music as having "an immediate appeal by virtue of its colorful, impressionistic textures, poetic texts, and abundance of concrete sounds" (Sept., 1979).

Having been recently stimulated by the writings of Edward T. Hall (*Beyond Culture*, *The Hidden Dimension*) McLean is undergoing a fundamental re-examination of the basic modes of musical expression and how they affect his own creative efforts. For example, McLean is seeking compositional

elements and tools more universal in scope, and to this end is developing a theory of gesture (as seen in language inflection and bodily and other movement) as the basic musical parameter fundamental to all others (pitch, rhythm, etc.) and which can exist as a common basis for understanding the music of all cultures. Increasingly his later music (*Mysteries from the Ancient Nahuatl* for large choral, instrumental, electronic, and lighting forces) reflects this continual exploration and re-examination.

PRISCILLA McLEAN. (1942) "On the third day of the "Musik protokolls (Autumn Festival, Graz, Austria, 1979) the astonished public had the choice between a whale-chorus by Priscilla McLean and a five-minute pause by John Cage..." (Von Hansjorg Spies—Kleine Zeitung, Austria). "Who has ever heard a whale sing? And on top of that, who gets this idea to make the singing the basis of three compositions? The American Composer Priscilla McLean heard something in it, and that resulted in a work for tuba solo and whale ensemble on tape . . . which possessed an enormous peacefulness and a great spatial effect. Aesthetics and experience of nature went together ideally..." (Peter Visser, reviewer of the Hague Courant describing a performance of McLean's *Beneath the Horizon*, one of the winners of the 1979 Guadeamus Festival, Holland).

Priscilla McLean, along with being an ardent conservationist, has been intrigued by new sound worlds for several years. Working in the electronic idiom since 1970, she has become open to all sounds as possible compositional material, particularly the blending of similar sound events to form new combinations. She has received two National Endowment for the Arts grants (1978, 1979), a Martha Baird Rockefeller (American Music Center) grant (1975), and fellowships and commissions since her advanced degree in composition from Indiana University in 1969. She is an active performer of electronic music (see McLean Mix), writer of several articles, producer and radio interviewer of the nationally-awarded Radiofest: New American Music series, executive committee member of the American Society of University Composers since 1976, and guest composer and lecturer at the University of Texas Electronic Music Center, Austin.

In addition to electronic music, McLean is prolific in acoustic music as well, having recorded orchestral and instrumental works (see discography). Her two-piano work *Interplanes* was acclaimed as "splendid new music for piano . . . a remarkable canvas of pianistic sonority." (Meirion Bowen, reviewer for *The Guardian*: Manchester, England, Apr., 1978).



Barton McLean in home studio.

McLEAN & McLEAN

As one might expect from husband-wife composers, the McLeans engage in various joint projects. Since 1974, The McLean Mix, a duo formed for the presentation of their music in concert, has performed extensively throughout the U.S.A. and Europe (1981), receiving such comments as "... The McLean Mix writes music that has a human face. Not only is it easy to relate to the sounds they use; much of their music is tied to poetry, geographic locales, or other programmatic references ... alluring musical landscapes drenched in exotic colors." (Haskell in the Kansas City Star, March, 1979).

In addition, they have appeared jointly on two recordings. The first (CRI SD 335, *American Contemporary Electronic Music*) recently was cited, in a High Fidelity Magazine article "CRI-Surprising Survivor" as one of the top dozen "Bouquet of CRI's Best" all-time albums (and the only electronic music album so chosen). Their most recent joint album, Folkways' own *McLean-Electro-Symphonic Landscapes* (FTS 33450) as the leading album in a James Aikin review, prompted the following comment on Folkways' catalog of electronic music, "But during the past few years they've released, with little fanfare, upwards of a dozen albums of electronic music, including some of astonishing sophistication and depth." (Contemporary Keyboard, July, 1979).

KEVIN HANLON (1953) studied composition and theory for five years with Barton McLean at Indiana University at South Bend before attending Eastman for his Masters degree, where further study and work with Adler, Schwantner and others produced a work which won the Louis Lane Prize for the best ensemble work of the year ('77). He later rejoined McLean in Texas for doctoral study and experience at its well-equipped Electronic Music Center. Subsequent awards have included the Bearns Prize ('78) at Columbia University, BMI Award ('79), Sonavera Electronic Music Award ('79) for *Through to the End of the Tunnel* and an Amherst College choral competition award ('79). As this goes to print (1980), he is one of the finalists for the Prix de Rome. His conducting and performance at Eastman and the University of Texas (where he is assistant conductor of the New Music Ensemble and the Electric Sinfonia) have also brought him acclaim. Hanlon is a prodigious composer in all genre of music, and one of the promising young talents of his generation.

REED HOLMES (1952) studied composition with David Van Vactor and Allen Johnson at the University of Tennessee in Knoxville. Later study with Kenneth Jacobs and several honors including the Van Vactor Award and the Percussive Arts Society Award propelled him into serious composition effort. Holmes is currently (1980) studying with Barton McLean and is Assistant Director of the Electronic Music Center at the University of Texas-Austin. Along with his skill in composition and ability as a theorist, Holmes is an expert on the works of Berio. *Nova* has been performed extensively throughout the country.

OTHER AVAILABLE RECORDINGS BY THE COMPOSERS

Priscilla McLean: DANCE OF DAWN and Barton McLean: SPIRALS. CRI (Composers Recordings, Inc.): American Contemporary Electronic Music, CRI SD 335. CRI: 170 W. 74th Street, New York, N.Y. 10023.

Barton McLean: DIMENSIONS II For Piano and Tape, THE SORCERER REVISITED (earlier version), GENESIS (both electronic works). Orion Records, ORS 75192. Orion: 5840 Busch Drive, Malibu, Calif. 90265.

Priscilla McLean: INTERPLANES (two pianos): Advance Recordings, FGR 19-S. American Society of University Composers. Advance: from European-American Publishing Co., 195 Allenwood Rd., Clifton, N.J. 07012.

Barton McLean: DIMENSIONS I for Violin and Tape: Advance Recordings: American Society of University Composers. See above.

Priscilla McLean: VARIATIONS & MOZAICS ON A THEME OF STRAVINSKY: Louisville Orchestra First Edition Records, Jorge Mester, Cond., LS762. Louisville Orchestra: 333 West Broadway, Louisville, Ky. 40202.

Barton McLean: DIMENSIONS II for Piano and Tape: David Burge, pianist. Composers Recordings, Inc. (CRI SD 407). 170 W. 74th St., New York, N.Y. 10023.

Priscilla McLean: INVISIBLE CHARIOTS and Barton McLean SONG OF THE NAHUATL. Folkways FTS 33450.

Kevin Hanlon: SECOND CHILDHOOD (toy ensemble) and Reed Holmes: AROUND THE WAVES (electronic). Advance Recordings (ASUC). European-American Publishers.

Barton McLean: DIMENSIONS III and IV for Saxophone and Tape, and Kevin Hanlon: VARIATIONS FOR ALTO SAXOPHONE AND TAPE DELAYS. Albert Regni, Saxophone. CRI (also Karl Korte's SYMMETRICS for Saxophone and Percussion Ensemble). CRI SD 431.

Miscellaneous Data

LIST OF WORKS

Barton McLean: *The Sorcerer Revisited* 9'10". 1974, revised in 1976, 1978. Realized in McLean home studio. ASCAP.

Barton McLean: *Heavy Music for Four Crowbars* 4'10". 1979. Realized in McLean home studio. ASCAP.

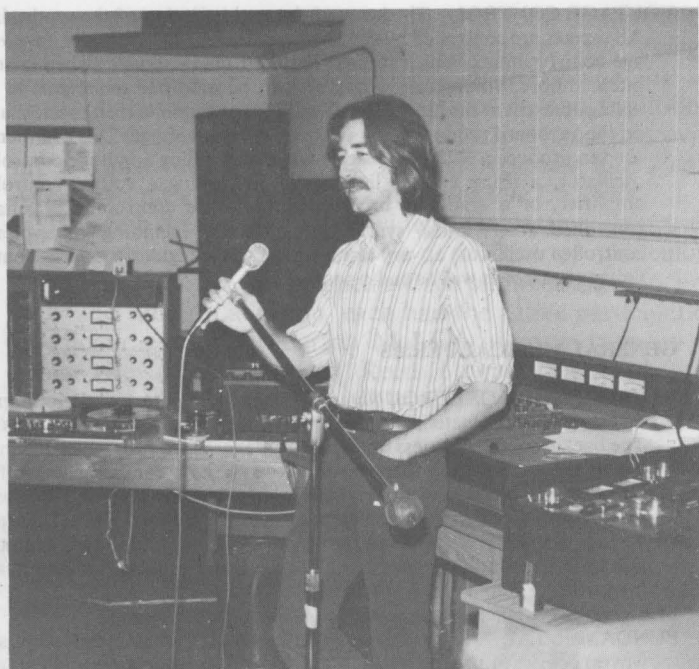
Priscilla McLean: *Invisible Chariot Mvt. I: Voices of the Invisible* 6'25". 1977. Realized in McLean home studio and Indiana University of South Bend. BMI

Priscilla McLean: *Night Images* 5'57". 1973. Realized in McLean home studio. BMI.

Kevin Hanlon: *Through to the End of the Tunnel* 9'28". 1975, revised in 1979. Realized at the University of Texas-Austin Electronic Music Center. BMI.

Reed Holmes: *Nova* 6'. 1978. Realized at the Electronic Music Center of the University of Texas-Austin.

Grateful acknowledgement is expressed to the Department of Music, Fiora Contino, Chairperson, The University of Texas-Austin, for its support of recording projects.



Kevin Hanlon recording *Through to the End of the Tunnel* at the EMC at the University of Texas at Austin.

Glossary of Terms. Although all of these items are to be found in the recorded dialogue and are intended to broaden its usefulness, this glossary does not pretend to be comprehensive in its approach outside the context of this recording.

ELECTRONIC MUSIC TERMS

ANALOG Refers to electronic music production with microphones, synthesizers, and tape recorders, as opposed to **DIGITAL**, which utilizes computers. An analog device has the capability of producing variation in a continuous unbroken manner, as in the ordinary wrist watch with its continuous dial sweep. The digital watch, on the other hand, progresses in discrete steps.

ATTACK Refers to the mode in the envelope generator of the same name (see **ENVELOPE**). It produces a gradual or instant rise in level (of pitch, volume, timbre, or whatever).

DECAY Refers to the envelope generator mode of the same name (see **ENVELOPE**). It produces a gradual or instant drop in level (of pitch, volume, timbre, or whatever).

DECK (As in tape deck) Any tape recorder existing without peripheral equipment such as speakers or amplifiers. All professional tape recorders are "decks."

DIGITAL (As opposed to **ANALOG**) Digital devices produce variation in discrete steps or increments, the basic unit existing in an on-off configuration. In order to approximate the continuous unbroken mode of an analog device (such as the computer generation of audio signals) a very much more complex and expensive digital mechanism must be utilized. That is why many systems today are "hybrid," in that they use digital means (i.e. sequencers) to control analog synthesizers (see **DIGITAL SEQUENCER**).

DIGITAL SEQUENCER In the context of this album, the computer does not generate audio signals directly, but is employed in controlling the pitch, rhythm, volume, and timbre of analog synthesizers. It is programmed by input from a keyboard which is played in the traditional manner. The computer then remembers and stores this information and plays it back upon command. During playback, various operations may be performed on the sequence, such as changes in speed, rhythm, pitch, timbre, etc. The Synthi 256 digital sequencer used in *The Sorcerer Revisited* and *Invisible Chariots* can store 256 notes apportioned in three channels (so that 3 part counterpoint is possible). Much longer digital sequencers exist at present, produced on devices capable of storing thousands of events.

DIGITAL SEQUENCER CLOCK A voltage-controlled pulse wave oscillator which controls the speed of the sequencer. By controlling the clock, one can speed up, slow down, or vary the rhythm of the sequence. Also pertains to many analog sequencer clocks.

EDITING Any operation performed on a segment of an already-existing

tape recording or digital sequence, usually designed to alter or correct it. Tape splicing is a form of editing.

ENVELOPE An envelope is a graphic description of how a particular sound varies over a given period of time. The term is usually broken down into the basic parameters it controls, such as "pitch envelope," "volume envelope," etc. For example, a wolf whistle would have the following pitch envelope:

ENVELOPE FOLLOWER A device which senses the volume envelope of a signal (usually picked up by a microphone or other source external to the synthesizer) and then converts it into a control voltage capable of controlling a synthesizer device. In *Heavy Music* the volume envelope of the crowbar is converted, via the envelope follower, to a pitch envelope (through controlling an oscillator) producing a glissando analogous to the crowbar volume decay.

ENVELOPE GENERATOR A standard synthesizer control device used to create envelopes which are then used to control pitch, volume, timbre, or rhythm. An envelope generator has several segments, each of which is time variable via a knob setting or control voltage, typically from .01 to 2 seconds, or up to 10 seconds. The segments are attack, initial decay, sustain, and release (or final decay). Once the envelope generator is triggered, each segment follows the next in order.

FILTER (voltage-controlled filter) A synthesizer device used for the control of timbre. According to the characteristics of the voltage controlling it (often an envelope generator) it eliminates certain frequency areas of the audio signal. The lowpass filter used in all the works on this album eliminates high frequencies and lets the low ones pass through. The highpass filter does the opposite (see **RESONANCE**).

INPUT An electronic signal entering an audio device. In tape recorders, inputs are recorded on the tape. In synthesizers, inputs to modules are used either (1) as audio signals to be modified by the module (as in filters), (2) as control voltages to control the module, or (3) to trigger the module (only envelope generators and certain other esoteric modules may be triggered).

MIXING Two or more audio signals are blended together using a mixer, which gives the composer independent control over the volume level of each.

MODULE Any audio device which can be plugged into the main unit and can be removed without affecting the other modules. In modular synthesizers the individual modules can be rearranged on the rack for optimum ease of use and repair. (see **SYNTHESIZER**).

MUSIC CONCRETE Electronic music produced by recording acoustic (live) sounds with a microphone and by tape recorder manipulation. The term implies the absence of synthesizers.

OSCILLATORS (voltage-controlled oscillators) The basic sound source of the synthesizer. The various waveforms produced by the VCO, in order from dullness to brightness, are sine, triangle, square, pulse, and sawtooth (ramp).

OUTPUT An electronic signal leaving an audio device. In tape recorders, outputs come from the tape playback. In synthesizers, although a few devices have no input (keyboards, white noise generators), all have an output. Synthesizer outputs are either (1) audio, which can be heard as sound and (2) control, which usually are not heard but are used to control other devices. An output from one device usually connects to an input of the next device in the patch (see **PATCH**).

OVERDUBBING Recording on one channel of a multitrack tape recorder in synchronisation with other already-existing tracks.

PANNING The spatial placement of audio (or control) signals between two or more channels, resulting in, for example, a signal seeming to travel from one speaker to another.

PATCH The totality of connections between modules of a synthesizer set up for a particular sound, usually by means of patch cords.

PEAKING See **RESONANCE**.

PHASE SHIFTER A sound modification device imparting a "swishing" effect. Can be voltage-controlled. It alters the phase relation, particularly of the upper harmonics, of an audio signal.

PLAYBACK MODE The setting of the tape recorder controls to play.

RECORD MODE The setting of the tape recorder controls to record. It is, of course, often desirable to put the deck in playback mode while recording.

RESONANCE Refers to the filter, which has a resonance, or peaking control, which accentuates the one frequency beyond which the filter eliminates material. This frequency, called the "cutoff frequency," is adjustable via dial or voltage control. When the resonance control is turned up, a sine wave tends to be present at the cutoff frequency more or less, depending on the frequency of the incoming signal. As the latter changes, the resonance produces some eerie effects.

REVERBERATION The lengthening of the decay of a signal imparting the realism of a live concert hall. Many reverb devices use springs. Others are digital, and some use metal plates.

RING MODULATOR A synthesizer device accepting two signals, which interact in such a way that the resulting output is much richer than if the

two signals were merely mixed. A ring modulator has its own characteristic sound quality, and can easily be overused.

SAMPLE AND HOLD A synthesizer device which is used to generate patterns (usually in these works, pitch patterns) capable of being random, controlled, or anywhere in between. The pattern is determined by the waveform or other signal sampled. Since VCO waveforms (sine, triangle, square, pulse, ramp) have periodic and predictable characteristics, the patterns generated from their being sampled are also fairly predictable. White noise, which is completely random in frequency content and sounding like radio static when used as an audio signal, produces completely random patterns when sampled.

SEQUENCER (analog) A synthesizer device which produces a series of voltages and triggers (which can be used as notes when controlling other devices) upon command. Each single step in the sequence can be preset independently by means of dials. Each "note" has its own dial. See also **DIGITAL SEQUENCER**.

SWEEP (as in filter sweep) A broad, unidirectional gestural effect produced by controlling the cutoff frequency of the lowpass filter with resonance added so that, as the filter is opened and closed (swept) a powerful timbral effect is produced.

SYNTHESIZER A generic name for a host of electronic music devices of different designs. All synthesizers have various sound sources (such as oscillators), control devices (such as envelope generators or keyboards) and sound modification devices (such as filters and voltage-controlled amplifiers) which can be connected in various ways to produce different effects. To the extent that these devices are modular and can be accessed independently, they are more flexible and powerful in their ability to produce a wider variety of sound material. To the extent that the connections are prewired and predetermined, they are easier to play but less flexible. Many of these latter units, designed for a few quick, simple effects in rock or pop music, are closer to electric organs than synthesizers.

TAPE DELAY Recording a signal on one tape deck and playing it back on another a distance away, using only one reel of tape strung between the two decks. Since the recorded signal on deck 1. takes time to reach deck 2. to be played, this is the time of the delay. In live performance, the sound is heard immediately, and then the delayed sound heard again a few seconds later. This, of course, can be recycled over and over again. The recording of *Through to the End of the Tunnel* is essentially a tape delay technique in live performance.

TAPE LOOP A closed loop of tape is inserted into the playback mechanism of the tape deck, producing a continuous repetition of the material. The length of the tape loop determines the length of the pattern.

TRIGGER A sharply rising voltage which initiates an envelope generator. In *Heavy Music*, the volume level of the crowbar sound, upon exceeding a threshold, produces a trigger which then triggers the envelope generator, which controls the oscillator that is paired with the crowbar sound in the ring modulator, producing a rich, glissando or sliding effect.

VARIABLE SPEED A special tape recorder feature which enables one to vary the speed (and thereby vary the pitch and tempo) while playing.

VOLTAGE CONTROL The heart of the sophistication of the synthesizer. All aspects are controlled by varying the voltage. Most modules have voltage control inputs, which means that their characteristic (whether it be pitch, timbre, volume, or whatever) can be modified analogous to the voltage present at the input. In this way, for example, a rising scale played on the keyboard produces, at its output, a rising voltage. This can then be used to produce a rising pitch scale while controlling a voltage-controlled oscillator, a rising volume level while controlling a voltage-controlled amplifier, or a gradually brighter timbre while controlling a voltage-controlled filter. Most synthesizer modules, including the voltage-controlled oscillators at very low frequency, are regularly used as control voltage sources as well as audio sources.

GENERAL MUSICAL TERMS

BACKGROUND-FOREGROUND Although both terms describe important aspects of the material of a composition, they have differing functions. The background, being less obtrusive, serves as a bed over which the more active and ear-catching foreground interacts. As a composer, it is often important to know the musical function of one's material. Knowing whether or not it is foreground or background material is a vital first step.

DEVELOPMENT SECTION A section in which considerable manipulation of pitches and rhythms takes place. Techniques such as imitation and inversion are employed.

FLEXATON A metallic percussion instrument with a twang.

FUNDAMENTAL All pitched and many non-pitched sounds (except sine waves) consist of the fundamental frequency, the lowest component, and its overtones (partials, harmonics), which are higher. In most cases, the fundamental defines the pitch and the relative strength of the overtones (of which there may be many) defines the timbre of the sound. Both fundamental and overtones are made up of sine waves.

GLISSANDO A continuous gestural or timbral sweeping effect, either up or down, producing a rush of notes.

IMITATION A technique of pitch manipulation in which a particular melodic idea is repeated in another voice at a different pitch level before the first voice has ceased.

INVERSION A given series of pitches is altered to reflect the mirror image, intervalically, of the original. What went up goes down and vice versa.

MUTING Damping the string with a soft device (finger, rubber), thereby dulling the sound.

OSTINATO A repetitive melodic idea. Tape loops, and electronic sequences often produce ostinati.

OVERTONES See **FUNDAMENTAL**.

PEDAL TONE A sustained tone, often in the bass, which holds through the other more active musical activity.

TIMBRE The distinguishing characteristic "color" of a sound. Timbre is, for example, what distinguishes a trumpet sound from that of a flute.



Reed Holmes at the Electronic Music Center (old studio), University of Texas at Austin.