

**ABOUT A.R.C.
THE AESTHETIC RESEARCH CENTRE OF CANADA**

A.R.C. was first described in an article written by John Grayson in 1970 titled: *Proposed: The Aesthetic Research Centre of Canada—A Centre Devoted to the Study and Reification of the Senses in Aesthetics*. The spirit of this concept developed into a functional form in 1971 when a Research Program was set up at the Cowichan Centre for Gestalt Learning on Vancouver Island.

Since then numerous research projects in the arts, in perceptual processes, and in other fields were carried out; numerous workshops and seminars for various professional groups, students, and children presented; and international lecture tours conducted. The Cowichan Centre transformed to become the Aesthetic Research Centre of Canada. It is registered in British Columbia as a non-profit, educational and research Arts Organization. It is also recognized as a non-profit, charitable organization by the National Revenue Department, Ottawa.

In 1974 A.R.C. expanded and established a Laboratory of Experimental Aesthetics in Toronto. This Laboratory, under the direction of David Rosenboom, has been amassing a large body of knowledge in the techniques of neurological referencing types of aesthetic experience, biofeedback, the development of the potential for daily conscious awareness and control of a large range of aspects of one's own neurophysiological functioning, (especially with respect to art), the relationship of these data to personal experiences, (especially those that involve practice), and the development of artistic expressions related to these experiences.

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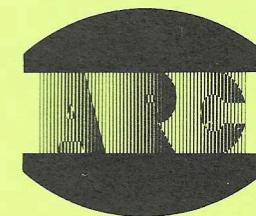
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and Recordings*

from



*The Aesthetic Research Centre
of Canada*

ABOUT A.R.C.'S PUBLICATIONS:

A.R.C. PUBLICATIONS specializes in presenting you with the most interesting and stimulating advances in the fine arts and related disciplines, including the areas of Education, Scientific Research, Aesthetics, Biofeedback, Perception, World Music, and World Soundscape Studies.

This is accomplished through the on going publication of a diverse range of emphatically practical and useful books and records issued in exclusive editions using the highest state-of-the-art engineering and manufacturing standards available.

All of the books listed in this brochure have been adopted over the past year for course work at various universities and colleges in Canada and in the United States.

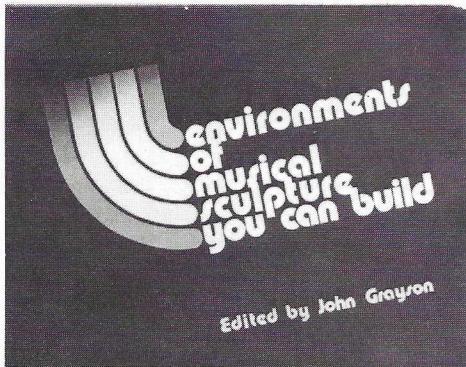
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Thanks to a 1977 patron subsidy, all books are now priced as follows:

Environments of Musical Sculpture

You Can Build (page 2)	\$14.95
Biofeedback and the Arts (page 3)	\$12.95
Sound Sculpture (page 8)	\$14.95
Pieces: An Anthology (page 9)	\$12.95
Record and Journal prices remain the same.	

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ENVIRONMENTS OF MUSICAL SCULPTURE YOU CAN BUILD provides the reader with a methodology on inventing and building his own new musical instruments and sound sculptures using largely the materials readily available in the environment. Over 120 detailed drawings and photographs show sample instruments made in this manner by people from all walks of life—from students to teachers, from housewives to housing contractors. Also included is a pull out Material Analysis Work Sheet to help guide the novice builder through the first stages of the exploration, discovery, formulation, and construction process. In addition, over 70 pages of special 'music' are provided, which anyone can play on his newly invented musical instruments or musical sculptures. This large, 31mm by 23.5mm, 208 page book thus outlines a complete, non-exclusive, community and environmental approach to music making where pleasure, self-motivation, and inner satisfaction are basic ingredients.

An introduction to the concept of Environments of Musical Sculpture, including a special section on Musical Sculpture for use by the deaf and hearing impaired, is provided in Chapter I. A wide variety of Musical Sculptures created out of everyday materials by people from all walks of life are described and documented in detail in Chapter II. A wide cross section of work sheets and material analysis forms used to invent and design musical/sculptural creations constitute Chapter III. Chapter IV presents various musical compositions which anyone can play and includes the score for a full length, eleven act music/theatre production titled **REQUIEM**. This is followed, in Chapter V, by a brief exposition on tuning and the presentation of a simple tuning system for musical sculptures.

Chapters VI and VII describe alternate extensions and applications of the Environments of Musical Sculpture concept, concentrating on the construction details and operational characteristics of long term, permanent, community installations. The numerous drawings and photographs in Chapter VI provide the reader with enough information, as does the entire book, to allow him to duplicate any of the pieces of musical equipment described, which, in this chapter, is An Environment of Musical Sculpture for Exceptional Children, again constructed utilizing community donated materials and other materials readily available in the reader's environment. Chapter VII continues the Community Music concept further by extensively describing a proposed Sound Sculpture Exploratorium.

The final section of the book, Chapter VIII, provides feedback from participants along with a wide cross section of Teacher's Commentaries, as the teachers relate their experiences of working with students in an ENVIRONMENT OF MUSICAL SCULPTURE.

Pages: 208

Size: 31mm x 23.5mm

Binding: Hardcover Only

Price: \$18.95

Order No.: ISBN 0-88985-001-1



BIOFEEDBACK AND THE ARTS: RESULTS OF EARLY EXPERIMENTS David Rosenboom, Editor

A second, updated edition of this informative publication, covering work done by major artists and researchers in the field of biofeedback and the arts and neurological information processing related to aesthetic experience. This book contains articles on practical applications, how-to-do-it information about the electronics involved in work with biofeedback and the arts, research and theoretical modelling reports, philosophical articles, and a gallery of pieces, scores, and ideas. Some authors and artists represented include: David Rosenboom, Richard Teitelbaum, Alvin Lucier, Dr. Edgar E. Coons, Dr. Lloyd Gilden, Jacqueline Humbert, Barbara Mayfield, C. Mark Nunn, etc. This publication serves to fill an information gap that currently exists in this new and expanding field by providing useful information for those interested in engaging themselves in related projects and stimulating ideas for those interested in the concepts.

EXCERPTS FROM THE AUTHOR'S PREFACE:

"Initial infatuation with the breakthroughs of biofeedback research, on the part of many investigators, began with the significant potential of making direct physical connections between an externally generated product, (such as musical sound), and internal experience as represented by the electrical output of the brain. Through much technical research it has been found that the catalogue of information, of both general and highly specific types, that can be extracted from these electrical signals is quite astounding. And in the process we have learned much about the relationship between experience and these externally manifested waveforms and have had to completely reopen questions concerning aspects of subjective experience, states of mind, and their relationship to these signals.

"In our LABORATORY OF EXPERIMENTAL AESTHETICS we have been amassing a large body of knowledge in the techniques of neurological referencing for types of aesthetic experience, biofeedback, the development of the potential for daily conscious awareness and control of a large range of aspects of one's own neurophysiological functioning, (especially with respect to art), the relationship of these data to personal experiences, (especially those which involve practice), and the development of artistic expressions related to these experiences. It is strongly felt, that the knowledge has reached a level of sophistication allowing practical application...."

"Rosenboom and his collaborators are engaged in work that has profound implications for the creative arts. This wide ranging collection includes schematics and construction details for low-cost biofeedback instrumentation, elucidation of some of the problems and possibilities concerning live electronic music performance, and scores for "Brain Music for John and Yoko", etc." Don Buchla in the **Whole Earth Epilog**.

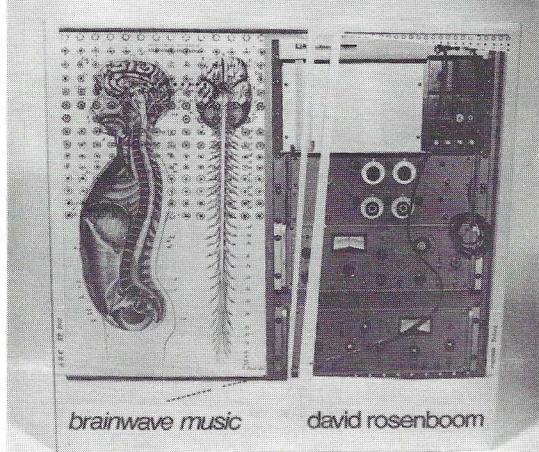
Pages: 162

Size: 28.25mm x 22mm

Binding: Hardbound Only

Price: \$18.95

Order No.: ISBN 0-88985-002-X



Director,
Laboratory of Experimental Aesthetics
and Associate Prof., Faculty of Fine Arts,
York University

EXCERPTS FROM THE ALBUM NOTES:

Side 1:
PORTABLE GOLD AND PHILOSOPHERS' STONES
(music from brains in fours) /1972/18:41/BMI

Electrodes and appropriate monitoring devices are attached to monitor the brain waves of four musicians who have been well rehearsed in the voluntary control of their psychophysiological functions. Monitors are also attached to two of the performers for body temperature and to the remaining two for galvanic skin response. This information is all fed into an analyzing system that extracts such things as, percent time per minute spent emitting Alpha brain waves, average time spent emitting Alpha, the amount of variance in the amplitude of Alpha, the coherence time of any patterns discovered in the brain wave, correlations between brainwaves of two or more performers, relative entropy of the waveforms, relative intensity of various spectral bands in the brain waves, etc.

A sound producing system is set up as follows. Four frequency dividers, capable of producing pulse waves that are some integral division of a sine wave frequency being fed to all four, are set up. These dividers are capable of producing exact pitch ratios that are a function of some control voltage, in this case, voltages from the monitors of skin temperature and galvanic skin response. The resultant precisely tuned chord of pulse waves is fed, then, into a bank of voltage controlled resonant band pass filters, called a Holophone. Relative amplitudes of the filters' outputs can be programmed. The results of the analysis of the performers' brain waves is directly applied to the voltage control inputs of the filters. The relative output amplitudes of the filters are controlled by signals deriving from a Fourier analysis of the brain waves.

When two or more pulse waves of exact pitch intervals are applied to a resonant band pass filter, the filter can extract the harmonics present in the wave form composite. A particular interval will then produce a set of extractable harmonics that forms a mode. The music proceeds as an improvisation within these modal possibilities.

continued....

Side 2:
CHILEAN DROUGHT/composed with JACQUELINE HUMBERT
1974/8:00/BMI

Mechanisms operating in this performance system are based on the assumption that the presence of different relative intensities of energy in the Beta (13-18Hz), Alpha (8-13Hz), and Theta (4-8Hz) brain wave bands represent different states of consciousness in a given subject. These various states will all affect the manner in which he processes information presented to him in his external environment. The score provides for three different vocal interpretations of material derived from the same text, in this case, a news description of a severe drought that occurred in Chile in 1968.

Changes in the vocal collage follow changes in the consciousness states of the soloist, through whose mental filter we are presented with a mix of interpretations of simple information. A piano accompaniment is provided to encase the vocal assemblage and further articulate the feelings aroused.

Beta text realized by Robin Engleman, Alpha text by Dug Spitznagel, Theta text by Jacqueline Humbert & Ellen Band, piano and brainwaves by David Rosenboom.

PIANO ETUDE I/1971/13:44/BMI

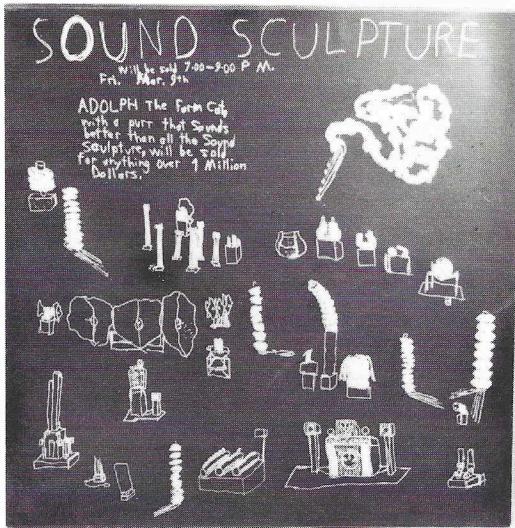
During the course of experimentation with biofeedback and the arts in 1971, I became interested in the relationship between strong Alpha brain wave production by a subject and ideas surrounding endurance and execution of complex, repetitive, motor tasks. I decided to construct a motor task, complex enough in its execution and requiring such endurance as to be difficult to complete, without interrupting the flow, unless one maintained a consistent, non-differentiating state of consciousness, similar to that associated with high Alpha output. PIANO ETUDE I is the task that was constructed as a result of this thinking. It must be performed as if the entire piece were a single, long, smooth motor gesture, made up of thousands of tiny, precise, vibrations, which must be executed perfectly without devoting selective attention to each one.

The similarity of this process to that found in output forms of the nervous system prompted me to further articulate the idea by allowing the brain signals, (unanalyzed, save for some band limiting to reduce noise), to modulate the center frequencies of two band rejection filters, which have the piano sound as their input, directly. The function of the filters is to place a mask over, or carve a hole in, the block of piano sound, eliminating a particular part of the sound spectrum from the output. The location of the mask or hole in the spectrum is what is moved by the unprocessed brain signal. Further, as the average Alpha amplitude increases, the average center frequency of the filters moves slowly upward throughout the performance. The brain waves may first be heard as a low rumble and later as higher frequency, fast pulsations. The filters do have some resonance which causes a slight ringing on either side of the band or mask. The fast pulsations present in the brain signal, made audible through the filters, then, allows one to work with ideas of rhythmic synchrony and phasing of brain rhythms with piano rhythms. The musical material used in composing the etude was taken from the larger composition, HOW MUCH BETTER IF PLYMOUTH ROCK HAD LANDED ON THE PILGRIMS. The average brain wave pulsation frequency during this performance was measured to be about 9.7Hz.

Recorded at Electronic Media Studios, York University and Warehouse Recording Studio, New York, engineers, David Rosenboom, Bill Robertson, & Robert Richards.
Mastered at RCA Canada by Alan Moye.
Album design by Eugene Tellez.

Price: \$6.95

Serial/Order Number: ST1002



THE SOUNDS OF SOUND SCULPTURE: A Cross Section Representing Three Decades of Sound Sculpture.

This A.R.C. record presents you with a representation of the diverse Sounds of Sound Sculpture created over the last thirty years where the sounds are produced physically, without electronics, in real time.

During this thirty year period there developed a rapid evolution in the field of Sound Sculpture. A detailed description of this evolution along with an introduction to all current forms of Sound Sculpture is provided in the A.R.C. book titled: 'Sound Sculpture: A Collection of Essays by Artists Surveying the Techniques; Applications; and Future Directions of Sound Sculpture'.

With the advent of the mechanical age, in the late 19th century, the interest of many sculptors gradually came to be focused upon the object and its transformation through motion—**kinetic sculpture**. As an awareness of the inherent noise in kinetic sculpture developed, some artists formed a desire to sculpt the noise, as well as the moving visual object and thus, in the late 1940's, the field audio-kinetic or Sound Sculpture began its evolution. During the last decade a more complex interrelationship of the sound to the sculptural form has developed. This has evolved, for some artists, to the extent where the sound itself has become the sculptural form. This is exemplified by David Jacobs (Side II, Band 2) as he creates complex aural patterns and forms through his **Hanging Pieces**.

The work of the artists presented on this record represents a good cross section of the possibilities which have been developed to date—the artists are, in a sense, the "founding fathers" of the art. All have been working in the field for twenty or thirty years.

The artists featured on this record:

French born FRANCOIS and BERNARD BASCHET are pioneers in the integration of new musical sounds with visual forms. They exhibited at the Museum of Modern Art over twenty years ago and have since then, continued to show their newest works at different international centres each time.

"Morning-glories of aluminum or stainless steel, they quivered visibly as the sound eddied through them. Innocent of scores or musical heritage, they challenged each demonstrator to discover their potential. As the weeks advanced we heard not only scales but genuine compositions whose crashing metal waves or delicate clickings and pizzicatos held us spellbound."

artscanada

continued.....



This large, 12 page booklet provides descriptions and photographs of the Sound Sculptures heard on the album and is enclosed with each record.

HARRY BERTOIA has been a sculptor for over forty years and his works are to be found in major collections and public areas throughout the Western hemisphere. During the last twenty years he has been gradually incorporating the elements of sound, motion and participatory involvement into many of his sculptures. These musical sculptures are "very much concerned with relating man to his immediate environment as well as to his universe." (*Harry Bertoia: Sculptor*—J.K. Nelson, Wayne State University Press, 1970).

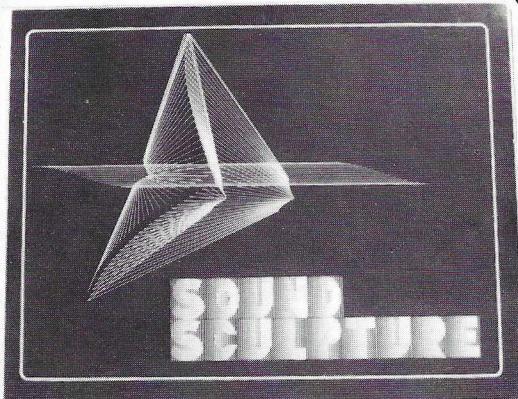
Since the mid '60's Sound Sculptor STEPHAN VON HUENE (Acting Dean, School of Art, California Institute of the Arts) has been experimenting with music, musical systems and their possible visual analogues. These explorations have subtly metamorphosed into his Sound Sculptures. All the parts of his sculptures which move or produce sound are operated and controlled through vacuum and pressure systems. "In effect they are music boxes cleverly (or diabolically, if you will) fused with moving automatia." (*Artforum*). This recording presents for the first time a substantial cross section of his work.

REINHOLD PIEPER MARXHAUSEN, Prof. of Art at the Concordia Teachers College in Nebraska, recently developed a unique series of Sound Sculptures: a group of **Musical Doorknobs**. Just one of these **door knobs** when pressed against an individual's ear and stroked gently, produces a lush and harmonically rich series of musical sounds which are audible only to the person stroking or moving that particular **door knob**. These **plucking sculptures** as Marxhausen calls them, are a delight, especially to children.

DAVID JACOB'S **Wah Wah** Sound Sculptures were described by the New York Times in this manner: "Turned on, the works swell, quake, writhe on the floor, wave funny antennae and bump up and down, while emitting a preposterous cacophony of rumbles, toots, moans, hisses, trumpetings, wheezes, squeaks and thumps which is, at times, surprisingly 'musical' and quite affecting." The **Wah Wah's** appear on Side I. On Side II Jacobs's more recent **Hanging Pieces** are presented in a performance controlled by the artist. These Sound Sculptures are **each** individually capable of producing as many as 5,000 partials, beats, secondary beats and other musical and psychoacoustical effects. "Vibration and the enormity of sound are evident on first hearing, but then comes the awareness of other tones, both from the sculptures and from the mind. The listener senses the interaction of the room, air, rubber, and pipes. Often listeners begin hearing songs", said Jacobs in an interview at a recent exhibition of his works. He is currently Acting Chairman of the Art Dept. at Hofstra University.

Price: \$6.95

Serial/Order No.: ST1001



SOUND SCULPTURE: A Collection of Essays by Artists Surveying The Techniques; Applications; And Future Directions of Sound Sculpture. John Grayson, Editor

This is the first major publication to deal completely with this new art form. It's a collection of over 30 articles and essays by an international cross section of Sound Sculptors who define and illustrate the various kinds of Sound Sculpture being created the world over.

The publication attempts to present as forthrightly and practically as possible the wide range of multi-levelled information necessary for the serious student's understanding of the varied processes and skills involved in sound sculpture. At the same time it is intended to acquaint the general reader with the full range of the multifaceted world of sound sculpture.

It is divided into four parts. The first is devoted to the majority of the senior artists active in the field of sound sculpture and consists, as does the remainder of the book, of articles and illustrative material largely written or compiled by the artists themselves.

Part II consists of a series of diverse essays and articles by distinguished senior artists of strong interdisciplinary background which serve to provide a lattice work of those heritages integral to the field of sound sculpture.

We can be sure that future developments which involve the integration of visual form and beauty with magical, musical sounds through participatory experience (in essence: sound sculpture) will take place which will more completely involve the various energy/perceptual systems of man. A different kind of sound sculpture is developing. Part III centres on this.

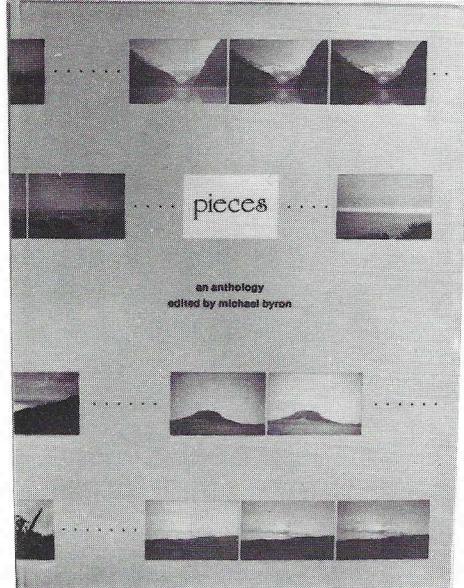
Part IV presents descriptions of innovative and creative applications of everyday, readily available materials for the creation of sound sculpture. This section when coupled with the information provided in the extensive references given at the end of the book will allow even a back-porch hobbyist sound sculptor to begin many interesting projects on his own.

This definitive introduction to the art and history of Sound Sculpturing includes over 150 photos and drawings illustrating, for instance: how to build a Western gamelan [Balinese 'orchestra']; examples of giant Environmental Sound Sculptures; Sound Sculpture created for a new 'people's music'; and so on. Articles by Harry Partch, Francois and Bernard Baschet of France, Harry Bertoia, Alan Kaprow on Stephan Von Huene, David Jacobs, Reinhold Pieper Marxhausen, Charles Mattox, Lou Harrison, Gyorgy Kepes, R. Murray Schafer, David Rosenboom, Walter Wright, David Rothenberg, John Chowning, Corey Fischer, John Grayson, William Colvig, Paul Earls, Ivor Darreg, Tony Price, Luis Frangella, and Max Dean are among the contributing artists.

Pages: 196 Size: 28mm x 21.5mm Binding: Hardcover Only

Price \$18.95

Order No: ISBN 0-88985-000-3



PIECES: AN ANTHOLOGY Michael Byron, Editor.

This unique collection is now in its second printing in a revised edition. **Pieces** introduces you to previously unpublished music in the tradition of the acclaimed series 'Soundings' and 'Source', by providing an outstanding cross section of current music and musical thought. Featured in this large sized, easy to sight-read anthology, are compositions for: various drum and percussion ensembles; shakuhachi (Japanese bamboo flute); voice and harp; solo voice; solo clarinet; and numerous works for solo piano, two and four hands.

The editor, Michael Byron, is a composer-performer whose recent work involves the application of open and pre designed forms to both formalized and 'real-time' composition. His music has been published frequently in **Soundings** magazine, and has been performed throughout the United States and Canada. He is also editor and publisher of **Pieces Profile Series** (a new series of publications, each focusing on an individual composer) and is the editor of the **Journal of Experimental Aesthetics**. Currently, he is Visiting Lecturer at the Faculty of Fine Arts, York University.

This collection of over 30 compositions and essays, includes the following works: **Hummingbird Songs** by Peter Garland; **Wind Hymn, Early Winters, and Illinois Sleep**, all by David Mahler; **Night On Mt. Baldy, and Way Out West**, by Tom Nixon; **Music of Every Night** by Michael Byron; **Sunday Come Down** by Marion Brown; **Let Us Go Into The House Of The Lord** by Harold Budd; **Private Or Collective?**, **Lullaby: God To A Hungry Child**, and **Apolitical Intellectuals**, all by Frederic Rzewski; **Shakuhachi Piece**, and **Threshold Music**, by Richard Teitelbaum; **Continental Divide, How Much Better If Plymouth Rock Had Landed On The Pilgrims, Patterns For London**, and **The Seduction of Sapientia**, all by David Rosenboom; **Avenues To Higher Levels of Psychic Communication And Neurological Referencing**, by John Grayson; **Monody For Solo Clarinet, Three Pieces for Drum Quartet, Wake For Charles Ives, Hocket For Henry Cowell, Crystal Canon for Edgard Varese**, and **Spectral Canon For Conlon Nancarrow**, all by James Tenney; and **Drum** by Stephan Von Huene.

"One of the most stimulating of recent anthologies. **Pieces** gives one an overview of the continuing development of musical thought in North America. It's exciting in selection and useful in many ways."

Lou Harrison

Pages: 176 Size: 23.5mm x 31.5mm Binding: Hardbound Only

Price: \$18.95

Order No.: ISBN 0-88985-003-8

"A stimulating album"

—Contemporary Keyboard Magazine

A.R.C. Records ST1000



**DAVID ROSENBOOM & J.B. FLOYD with
Suitable for Framing. Trichy Sankaran**

Persons involved in the art, piano and mrdangam

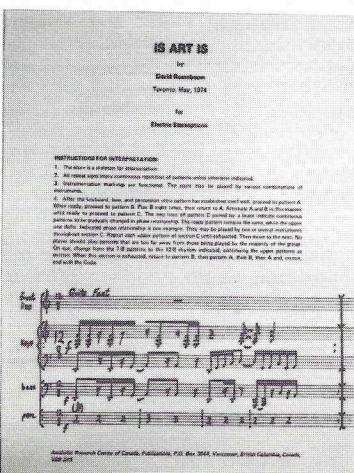
**SUITABLE FOR FRAMING: Compositions for Two
Pianos and South Indian Mrdangam**

In 1972, pianists J.B. Floyd and David Rosenboom began a unique collaboration which was to result in an improvisationally based music. This music grew from and utilized the extended musical materials of cyclical pattern styles and the music gradual, slow changes (both of which had emerged in the mid to late sixties), as well as drawing inspiration from such masters of non-notated forms as Coltrane, Taylor, and Davis.

The results, which this record presents, are stunning explorations in forms of freedom, elucidating the relationship of structure to improvisation, as well as the overwhelmingly powerful constructions of many layered sound, made possible by this unique pairing of accomplished individuals, who superbly and sensitively complement each other's musical identity.

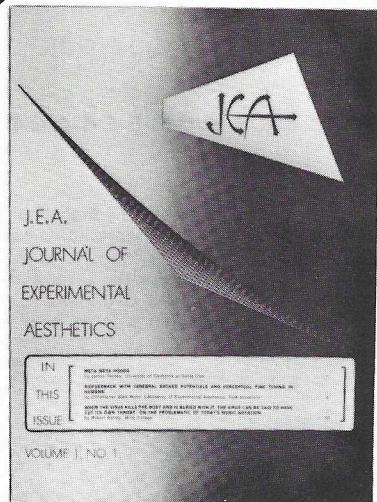
In addition, the activities of these musicians frequently expanded into numerous large and small groups, providing a new means in particular, for cross-cultural interface. This unique facet of their music is exemplified on this recording by their work with South Indian mrdangam master, Trichy Sankaran.

SUITABLE FOR FRAMING is a live recording, the culmination of an extended, 1974-75 European and North American concert tour. It includes the titles: **19IV75** [Floyd-Rosenboom]; **Patterns for London** [Rosenboom]; and **Is Art Is** [Rosenboom]. The album jacket presents art work by the well known film maker/intermedia artist, George Manupelli. Art work—suitable for wall hanging—by Manupelli, along with the score for Rosenboom's **Is Art Is** are included as inserts with the album.



Price: \$6.95

Serial/Order Number: ST1000



**J.E.A. THE JOURNAL OF EXPERIMENTAL
AESTHETICS** Michael Byron, Editor

Each issue of this occasional journal presents a series of original publications devoted entirely to expanded directions in Experimental Aesthetics, approached through a broad, interdisciplinary base. The Journal encompasses a diversity of areas in currently developing art systems and art forms with special emphasis placed on recent applied research in human information processing.

The Editorial Staff of the Journal of Experimental Aesthetics endeavors to provide in each issue both theoretical and practical information through a wide cross section of contributed papers submitted by authors active both internationally and nationally. As well, the Journal will occasionally provide, through special inserts, a window into the people and activities of the Aesthetic Research Centre of Canada.

Volume 1, No. 1 contains:

META META HODOS

by James Tenney,
University of California at Santa Cruz

A significant capsulization of Mr. Tenney's work in composition, structural linguistics, and generative languages for music.

**BIOFEEDBACK WITH CEREBRAL EVOKED POTENTIALS AND
PERCEPTUAL FINE TUNING IN HUMANS**

by Christopher Mark Nunn,
Laboratory of Experimental Aesthetics,
York University

"Mr. Nunn's paper is a must for anyone interested in establishing functional biofeedback systems in electronic media studios as well as for those interested in the relevant background in physics, psychophysics, and psychology. It contains an excellent review of work done to date on the cognitive significance of changes in specific peaks of the auditory evoked response, a practical guide, including circuitry, for implementing a real time, evoked response peak detection and biofeedback system, along with designs for experimental paradigms."

(David Rosenboom)

**WHEN THE VIRUS KILLS THE BODY AND IS BURIED WITH IT, THE
VIRUS CAN BE SAID TO HAVE CUT ITS OWN THROAT: ON THE
PROBLEMATIC OF TODAY'S MUSIC NOTATION**

by Robert Ashley
Mills College

"...Ashley's talk was a positive contribution."
(Cornelius Cardew in 'Stockhausen Serves Imperialism').

The price of a subscription for four sequential issues is:

Individuals in North America	\$15.00
Individuals in Other Countries	\$17.00
Libraries & Multiple Reader Institutions in North America	\$30.00
Libraries & Institutions in other Countries	\$35.00

COMMENTS ABOUT THE WORLD SOUNDSCAPE PROJECT

"The World Soundscape Project represents a significant departure in the field of cultural studies and in the understanding of the place of sound in society and in the environment. The scholarship and imagination, however, have a world-wide import and could be fruitfully extended to other cultures and civilizations. In my opinion, this fundamental approach is making an inroad throughout the world."

G.S. Metraux,
Editor, CULTURES.

"The World Soundscape Project is one of the great pioneer projects of our day, one of the most important, and of enormous value to the whole world."

Yehudi Menuhin

The World Soundscape Project presents "original and interesting research on the impact of the acoustic environment on man—a significant contribution both from the theoretical and practical points of view. This pioneering work is surely leading to the establishment of a science of acoustic ecology."

S. Friedman,
International Social Science Council
UNESCO, Paris.

FORTHCOMING TITLES FROM THE WORLD SOUNDSCAPE PROJECT:

FIVE VILLAGE SOUNDSCAPES IN EUROPE

R. Murray Schafer, Editor

In 1975, the World Soundscape Project studied the soundscape of five European villages, one in each of the countries visited: Sweden, Germany, Italy, France and Britain. The life of each village was centred around a different focal point: industry in Sweden, farming in Germany, wine-growing in an Italian mountain village, fishing in Brittany, and a celebrated school-village in Scotland. Each community also showed a different degree of assimilation of 20th century technology into its traditional village life and sound environment.

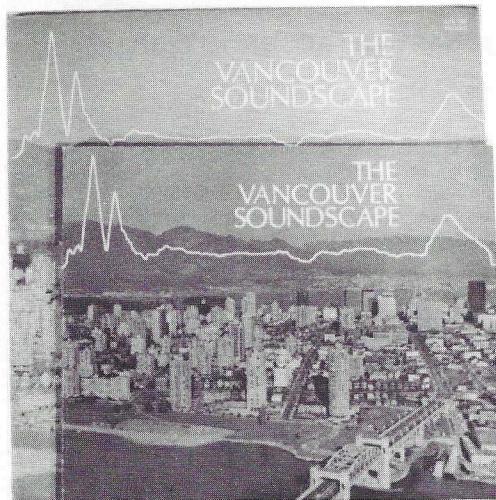
The result of this World Soundscape Study is not only a fascinating account of the unique character of these villages, but it is also a major advance in the development of Soundscape Studies. The villages are situated, as it were, half way between the complexities of the modern, urban environment (as in *The Vancouver Soundscape*) and the intricate balance of the natural environment. Thus, this book clearly shows the effects and implications of technological transition on social behaviour as evidenced through their changing acoustic environments. As a result, the importance of this study reaches far beyond the limits of these specific communities, and will provoke a renewed concern for the acoustic design of urban environments in human terms.

Two LP recordings accompany this book and bring to life the special sound environments of these villages. Featured on one record is a composition that spans 24 hours in the gregarious life of Cembra, the Italian mountain village, on Easter Sunday. The book itself provides a wide range of insights into such aspects as: 1) Soundscape Character, 2) Acoustic Rhythms and Densities, 3) Materials: The Sound of Water and Stone, 4) Acoustic Definition: Community Sound Signals; Acoustic Horizon; Sonic Intrusions; Historical Changes in Definition, 5) Local Reactions: Sound Preferences and Earwitness Accounts.

Over 70 illustrations and photographs are included as part of *Five Village Soundscapes in Europe*.

FORTHCOMING TITLES:

WORLD SOUNDSCAPE PROJECT



THE VANCOUVER SOUNDSCAPE

R. Murray Schafer, Editor

The Vancouver Soundscape is a concentrated study of the sound patterns of a city over its 100-year growth. It presents the basic approach for understanding the various elements that combine to form the sonic environment of a community.

Quotations describing the sounds of this North American city's past, ("earwitness accounts"), articles on its distinctively characteristic sounds, and quantitative measurements and analyses of specific sound problem areas are all related with a set of concepts derived from music, psychology, sociology, and many other disciplines. The two accompanying long-play records included with the book recreate various aspects of the soundscape and illustrate the emerging theme of soundscape design.

Some of the techniques and methods used to compile the total sound image of the city include: **Sound Profile Maps**; **Isobel Contour Maps**; **Sound Event Time Charts**; **Radio Rhythm/Intensity Measurements**; and **Soundwalking**.

Basic concepts defined for the first time include the idea of **Keynote**, **Signal** and **Soundmark**—terms used to relate sounds to their own environmental, physical and psychological (i.e. perceptual and associative) context. This context as an aggregate is called the **SOUNDSCAPE**, which, like the analogous term **landscape**, refers to the perceived image of the environment as much as to the physical, measurable environment.

The Soundscape is conceived as an unfolding cultural composition, and provides a fascinating portrait of the culture living within it.

FORTHCOMING TITLES

WORLD SOUNDSCAPE PROJECT

A DICTIONARY OF ACOUSTIC ECOLOGY

Barry Truax, Editor.

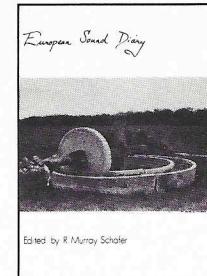
This book provides for the first time under one cover a detailed, clearly worded, easily understood list of definitions and descriptions of acoustic terms useful to those involved with, or interested in **any** aspect of sound or soundscape design—from the generation of sound, to its environmental and physical behaviour, on to its perception and processing. There are over 500 entries in this dictionary, supplemented with over 140 illustrations and graphs.

In these times, as the world is gradually saturated with an overpopulation of sounds, particularly technological sounds, the subject of sound is becoming fashionable for discussion and study. It is necessary for anyone whose interest has been stimulated to have a clear understanding of what sound is, how it functions, and how it is measured.

Tolstoy once said that if you can't explain a concept to a fifteen year old in fifteen minutes, it is probably specious. Readers may not find every one of the Dictionary definitions that immediately intelligible (particularly if they come to the subject with little or no background) but they should find it a useful reference document to be used in association with enquiries into all fields of sound or soundscape studies.

Here are a few of the over 500 terms defined in the **Dictionary of Acoustic Ecology**:

Acoustic Ecology; Acoustic Impedance; Acoasma; Allophone; Articulation Index; Audiocentric; Auricle; Binaural Hearing; Broad Band Noise; Canyon Effect; Cent; Clairaudience; Click; Combination Tones; Community Noise Equivalent Level; Composite Noise Rating; Compression; Critical Bandwidth; Crosstalk; Damage-Risk Criteria; Decay; Decibel; Degauss; Destructive Interference; Differential Threshold; Diffraction; Doppler Effect; Duty Cycle; Ear Cleaning; Echo; Echolation; Effective Perceived Noise Level; Electronic Music; Emulsion; Equal Loudness Contours; Field Pattern; Filter; Flanging; Fletcher-Munson Curves; Fourier Analysis; Frequency Modulation; Gramophone; Graphophone; Harmonic Series; Helmholtz Resonator; Heterodyne; Hyperacusis; Impact-Noise Analyser; Impulse Sound; Infrasonic; Inharmonic; Inverse-square Law; Isobel; Just Tuning; Kunstkopf; Law of Superposition; Limiter; Localization; Loudness; Masking; Mel; Metacommunication; Minimum Audible Field; Modulated Carrier; Monophonic; Moozak; Node; Noise and Number Index; Occupational Deafness; Onset Transients; Oscilloscope; Parabolic Reflector; Particle Velocity; Perfect Pitch; Phase; Phon; PNdB; Preferred Noise Criterion; Psychoacoustics; Radio Spectrum; Rarefaction; Rectification; Resonance; Rise Time; Sabin; Sacred Noise; Schizophonia; Semicircular Canals; Sensory-Neural Hearing Loss; Shock Wave; Sibilance; Silence; Sonic Boom; Soniferous Garden; Sound Analyser; Sound Level Meter; Sound Pressure; Sound Shadow; Spectrograph; Speech Interference Levels (SIL); Standing Waves; Steady State Sound; Stereoausis; Stochastic Process; Subharmonic; Supersonic Transport; Tempo; Tempophone; Tenth-Octave Band Analyser; Threshold of Pain; Traffic Noise Index; Transient; Triangle Wave; Ultrasonic; Visible Speech; Vocal Stop; Volley Theory; Voltage Control; Weighting Network; Wind Screen; Zeitdehner....



EUROPEAN SOUND DIARY

R. Murray Schafer, Editor.

Each week the diaries of the World Soundscape researchers, as they travelled throughout Europe, were collected and a few passages selected from each, and subsequently fitted together to tell the story of their discoveries, hopes and surprises. The result is an impressionistic and engaging account of a fascinating Soundscape Expedition. Here are a few brief excerpts:

"In the National Library in Vienna, Howard and I are lead into the old reading room, where it is so quiet my head seems to pound. A whole new scale of sounds comes into the foreground: heartbeat, nervous system, sizzle, breathing. The sound level meter bottoms out on the A-scale at 25, but registers a whopping 52dBC, indicating a heavy concentration of very low sound pressure. Where were these deep vibrations coming from?.....

Spent a good day with firemen here, recording and measuring the sirens, and in conversation. We learned something new, for our morphology file: the melodic motif of the Austrian fire sirens (and generally of all European emergency warning signals) apparently derived from the days in the 19th and early 20th centuries when trumpeters blew warnings from the fire vehicles as they sped their way through the streets. When electrical horns were introduced, the characteristic interval of the perfect fourth was retained in the design of the new devices.....

Vienna was the home or working place of poets and many great classical composers. Their statues and plaques are placed throughout the downtown section of the city. But let us listen to the environments in which their admirers have placed them. Beethoven sits looking out upon Lotheringerstrasse. He listens to the ambience of auto noise, ventilator noise from an underground parking lot, construction work, and tram bells. Brahms sits weeping over the sounds of Karlsplatz being ripped up for a new subway station. The Viennese have also not accorded Mahler's plaque with much respect. He is kept hard at work near a ventilator system in front of the Konzert Haus. We measured the sound levels at the feet of our artistic heroes and came up with these remarkable results.....

But at last it happens. It is 9:15a.m., and the tape is rolling to record the great Salvatore Mundi bell of the Cathedral, which is rung only on occasions when the archbishop performs mass. It is Palm Sunday, warm and bright and that 14,000 kilogram bell is making my bones rattle. What a sound! People are gathering in the square for the traditional procession. Children, dogs, men and women. Salvatore Mundi pounds out for 10 minutes. The Domplatz is overflowing with the sound.....

Trento. Bedtime, our first night in Italy and a gentle rain is falling out in the courtyard below, myriad drops falling from eaves and tree branches. Very little other sound—it is midnight. I taped a low sequence on the Nagra, and measured it at 50-52 dBA and 53-55 dBC—no low frequency rumble, or at least if there is, it is being nicely complemented by the higher frequencies of the rain. It should make another interesting spectrum display....."

Also included in the book is a compilation of techniques used by the researchers in field recording and environmental sound documentation with sample results presented from a wide variety of countries visited. As well, **Soundwalks** describing "earcleaning" exercises for sonic walking tours of several major cities in Europe are included. **European Sound Diary** is further enhanced with over 100 illustrations and photographs.

FORTHCOMING TITLE:

**THE ART OF DRUMMING:
SOUTH INDIAN—MRDANGAM**

by Trichy Sankaran

(Foreword by Palghat Mani Iyer)

Acknowledged as one of the foremost rhythmic virtuosi in India, Prof. Sankaran's book represents years of work at cross-cultural, musical understanding. This book is a major step forward in bringing an understanding of a non Western tradition to Western readers & practitioners.

Written specifically for the Western reader, it provides, in simple form, basic knowledge on the technique and theory of South Indian drumming. General subject areas include: 1) the role of Mrdangam in South Indian music, 2) the technique of playing, 3) a brief theory related to the performance practice today, and 4) Mrdangam lessons in notation.

Specific chapter headings include: Mrdangam; The Function of the Two Heads in the Art of Drumming; Tala Theory; Solkattu; etc.

The text is amply illustrated with numerous photographs.

Along with Prof. Sankaran's book, a full length stereo LP record will accompany the book. The record will contain demonstrations of the Mrdangam lessons given in the book, along with examples of solo composition and improvisation.

Here is a brief excerpt from the author's Preface:

"The purpose of this book is to make available in simple form for Western readers some basic knowledge on the technique and theory of South Indian drumming. As there has been an ever growing interest in listening to the South Indian percussion instrument, **mrdangam**, and also in learning the art of playing **mrdangam**, I have made a humble attempt in putting forth the role of **mrdangam** in a South Indian music concert, the technique of playing, a brief exposition of theory related to contemporary performance practise, and **mrdangam** lessons in notation. Having performed widely with eminent artists in India and also abroad, and having taught many North American students the art of drumming in the past years, I wish to present in book form the information and materials which I have been taught by my teachers, and also those which I have developed during the years of my performance and teaching. I hope that this book will be of some help to students of Indian music, drumming students in particular, as well as to general readers, in understanding the theory and technique of South Indian drumming."