New CMA Members

Appleton, Jon; Hanover, New Hampshire, USA
Arnold, Stephen; Glasgow, SCOTLAND
Bolognesi, Tommaso; Urbana, Illinois, USA
Carden, Jack C.; Carrollton, Texas, USA
Chadabe, Joel; Albany, New York, USA
Daniele, Vidal; Venice, ITALY
Darko, Percival K.; Pittsburgh, Pennsylvania, USA
Davis, Det; Rochester, New York, USA
Dierbach, Charles, Newark, Delaware, USA
Digital Laboratories Inc.; Watertown, Massachusetts, USA
Edelstein, Philip; Stratford, Connecticut, USA
Faber, Michael; Hamburg, GERMANY
Green, Mark; Burlington, Ontario, CANADA
Hatley, Jerry; York, Pennsylvania, USA
Henninger, Richard, Toronto, Ontario, CANADA
Hiller, Lejaren A. Jr.; Snyder, New York, USA
Hobbs, James D. III; Evanston, Illinois, USA
Hollander, Laurie; New York, New York, USA
Hull, Steve; Kitchener, Ontario, CANADA
Jansen, Michael; Duesseldorf, GERMANY
Keating, Henry J.; Garden Grove, California, USA
Kolb, William; Austin, Texas, USA
Kornfeld, William; Cambridge, Massachusetts, USA
Leibig, Bruce E.; Stockton, California, USA
Loy, Gareth D.,; La Jolla, California, USA
Lugus, H.; New York, New York, USA
Medlock, Paul J.; Baltimore, Maryland, USA
Molava, Pamela M.; Simsbury, Connecticut, USA
Murphy, Dennis D.; Miami, Florida, USA
Pearson, Mark; New York, New York, USA
Phraner, Ralph A.; San Francisco, California, USA
Pope, Stephen T.; Salzburg, AUSTRIA
Ring, Peter; Kjobenhavn, DENMARK
Schaeffer, Gregg E.; New Brunswick, New Jersey, USA
Spiegel, Laurie; New York, New York, USA
Syntauri; Palo Alto, California, USA
Thies, Wolfgang; Hamburg, GERMANY
Tsitsivas, Haralambos; Glendale, California, USA
University of Delaware; Newark, Delaware, USA
Vollmer, Thomas; La Jolla, California, USA
Wixson, Steve; Birmingham, Alabama, USA
Wood, Patricia Ann; Palo Alto, California, USA
Wyss, Niklaus Peter; San Francisco, California, USA

CMA Board of Directors

Marc Battier, Paris, FRANCE	Dorothy Gross, Minneapolis, Minnesota, USA
James Beauchamp, Urbana, Illinois, USA	Hubert S. Howe, New York, New York, USA
Thomas Blum, Berkeley, California, USA	Curtis Roads, Cambridge, Massachusetts, USA
Donald Byrd, Bloomington, Indiana, USA	John Snell, Stanford, California, USA
James Dashow, Padova, ITALY	John Strawn, Stanford, California, USA

THE COMPUTER MUSIC ASSOCIATION, INC.

Newsletter Vol 2, No 1

January, 1981

Welcome to the fifth issue of the CMANewsletter (CMAN). Included are announcements of upcoming conferences, workshops, concerts, and classes as well as reports on computer music making.

CMA formed a little over a year ago for the purpose of supporting and furthering the art and science of computer music. In October 1980, we had our first annual election of the CMA Board of Directors by the membership. Officers are now in the process of being elected by the Board members. CMA conducted it annual membership meeting at the International Computer Music Conference, Queens College (see minutes, within. The Computer Music Journal, M.I.T. Press, will be publishing an account of the Conference in an upcoming issue). In December 1980, CMA became a nonprofit, tax-exempt corporation recognized by the State of California. Currently, we have approximately 150 members, internationally.

Having finally settled the incorporation business (those of you who followed our saga know it was no easy course) permits us, now, to get on with the organizational set up of CMA; a bank account has been opened and membership cheques have been deposited. For any of you who were wondering what ever happened to your cancelled cheque, it should be returned very soon. Many cheques expired. Slowly, money from our members' dues is becoming available to put into the production of services, such as CMAN, and we will soon be looking to supplement these funds via the world of proposal writing and grants foundations.

Ideas for CMA services, so far, include archival services (a central site for cataloging music and computer program tapes, scholarly papers, program listings, and documentation donated to the archives by CMA members and non-members), concert sponsorships (perhaps connected to the concept of local CMA chapters), CMA Reports and Publications (papers and proceedings distributed by CMA). You can use the survey forms within this newsletter to let us know what services you would like to see from CMA.

One service which we hope will start within the next issue of CMAN is that of an exchange/bulletin board through which members can be more accessible to each

other for the interchange of ideas and computer music artifacts. A new section in the newsletter each quarter will list "works available" by members in either a "wants-to-exchange", "wants-to-offer", or "wants-to-receive" category. As soon as we get your responses, the section will commence (Vol 2, No 2). If you wish to exchange or offer you computer music tapes, programs, papers, etc., send us your address info and list the works and the media. This info will appear on the newsletter "bulletin board". Make sure you state the conditions of the exchange or offer. (CMA is not liable for exchanges between its members or members and the public).

We at the Computer Music Association, Inc. look forward to using this year to develop services for members and for achieving goals which are in line with the purpose of CMA.

-The Best to You in '81,
Thom Blum, CMA Interim Pres.

FOR IMMEDIATE RELEASE

Dec. 12, 1980, Denton, Texas

The 1981 International Computer Music Conference
at North Texas State University

North Texas State University
Denton Texas 76203
School of Music

The 1981 International Computer Music Conference will be held at North Texas State University, Denton, Texas, November 5-8, 1981. Professor Larry Austin of the NTSU School of Music composition faculty will serve as conference director and host. The ICMC is the principle annual meeting for composers, theorists, scholars and scientists active in the growing field of computer music. Plans for the 1981 ICMC center on concerts of computer music, presentation of papers, workshops, panel discussions, demonstrations, exhibits, and meetings of special interest groups. The extensive facilities and musical resources of the NTSU School of Music will be made available for the conference.

Submission of proposals to the conference for presentation of papers and the performance of computer music on tape or with real-time digital synthesis systems must be received by the conference director no later than September 1, 1981. Compositions calling for instrumental/vocal soloists or ensembles must be received by July 1, 1981, to facilitate programming and preparation. Such instrumental/vocal works, to be considered, should involve computer-assisted compositional processes or be combined with computer music on tape or with real-time digital synthesis systems. An advisory panel of representative practitioners in the field will be formed to assist the conference director with conference programming.

An official announcement, call for papers and music, and pre-registration form will appear in early spring, 1981. Meanwhile, further information about and suggestions for the conference can be obtained and directed to:

Larry Austin, Conference Director, ICMC
School of Music, North Texas State University
Denton, Texas, 76203

Minutes
Business Meeting
International Computer Music Conference
Friday November 14, 1980
Academic Building, Room 170
Queens College
Long Island, New York

The meeting was called to order by Thomas Blum, interim president of the Computer Music Association. The first order of business was a short report by Curtis Roads on the status of *Computer Music Journal*. Thom Blum introduced the recently elected members of the board of directors of the Association:

Marc Battier,
James Beauchamp,
Thomas Blum,
Donald Byrd,
James Dashow,
Dorothy Gross,
Hubert S. Howe Jr.,
C. Roads,
John Snell, and
John Strawn

The major item of business was the question of the site for the next international computer music convention. Larry Austin read a letter from Marceau C. Myers, Dean, School of Music, North Texas State University, Denton, Texas, inviting the computer music community to held a convention there. Alexander Brinkman of the Eastman School of Music presented a similar proposal. An offer of the Venice Biennial to host a convention in 1982 was introduced by James Dashow.

The discussion opened with the question of whether the convention should be held yearly or biannually. The question was decided by a vote (all of the votes mentioned here were taken by show of hands) in favor of annual conventions.

Gary Kendall of Northwestern University raised the question of whether to hold the convention in the fall or the spring; the fall season seems especially hectic with a large number of important conventions. John Snell questioned the advisability of holding simultaneous sessions, especially with closely related topics. Hubert Howe explained that Sunday sessions had been eliminated for this year's conference because the facilities at the College were unavailable. This alone necessitated doubling up some sessions. He also pointed out that holding a convention in the spring of 1982 would make it difficult to hold a conference in Venice that fall. After speaking in favor of holding yearly conferences, he concluded by pointing out the advantages of planning conferences two years in advance, and suggested that the sites for the next two conventions be picked. Peter Clements (Toronto) suggested that these matters be decided by the board of the Association. As for holding a convention in Europe next year (in the interest of distributing the sites geographically), Phil Drummond pointed out that this would be difficult to organize, especially given the lack of a proposal for a site outside North America for next year.

By show of hands, it was decided to hold the conferences in the fall, not in the spring. A second vote showed that those present favored holding a 4-day, as opposed to a 2- or 3-day convention. The proposal for holding the conference in Texas next fall was accepted by a show of hands. As for the following year, the Venice proposal met with unanimous approval, grins on the faces and twinkles in the eyes of all assembled.

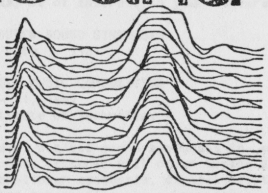
The meeting was then adjourned.

Respectfully submitted,

John Strawn
Acting Secretary/Treasurer
Computer Music Association

call for computer musicians and artists

to speak, exhibit, or perform at:



PCAF '81

Personal Computer Arts Festival

Philadelphia, USA **August 28-30, 1981**

A festival of talks and papers, films and graphics, demonstrations and performances.

The Personal Computer Arts Festival Committee invites persons interested in:

- microcomputer music synthesis
- computer composition tools
- digital sound synthesis and signal processing
- computer-generated visual art (video, film, plots, prints, sculpture, etc.)
- other computer-based creations

to talk, demonstrate, display, or perform at PCAF-81 in Philadelphia August 28-30, 1981.

The Personal Computer Arts Festival, now in its fourth year, will include technical sessions, demonstrations, and exhibits as well as the annual computer music concert and computer graphics film/video spectacular. Past performers have included Jon Appleton, Hal Chamberlin, Laurie Spiegel, and many others in the synthesizer and personal computer fields.

Special groups will be held as suggested by participants.

To participate in PCAF-81, send a 1/2 page description of your presentation topic or performance and include tapes, prints, or slides wherever possible (to be returned). Information should be received before July 1, 1981.

A resource guide to computer music and graphics is being compiled for the Festival. Contributions for the guide should be sent to PCAF-81 no later than June 1, 1981.

PCAF-81 is held in conjunction with the Personal Computing '81 Show at the Philadelphia Civic Center. This show includes one of the largest exhibitions of small computer systems in the country.

PCAF '81 Box 1954

Phila., Pa. 19105

West German Computer Music Workshop

The first West German Computer Music Workshop will be held at the Hochschule fuer Musik und Darstellende Kunst, Stuttgart, West Germany, during the period of July 9 to 14, 1981. Director of the Workshop and principal instructor will be Otto E. Laske, Boston, Ma., USA. The workshop will be held in German. It will deal with programmed composition, sound synthesis (MUSIC11), and problems of music & artificial intelligence. For more detailed information write to Professor Dr. Erhard Karkoschka, p.A. Hochschule fuer Musik und Darstellende Kunst, D-7000Stuttgart, Urbanstr. 14, W. Germany.

THE STUDIO
of electronic music
P.O. BOX M SIMSBURY, CONNECTICUT 06070
TEL (203) 658-5290
Pamela M. Molava, Director

Composers are invited to present ELECTRONIC MUSIC tapes for an October 3, 1981 Concert at the Hartford Public Library, Hartford, Ct.

Samples or finished work may be sent to The Studio of Electronic Music, Box M, Simsbury, Ct. 06070.

1/2 track quarter inch tape at 15 or 7½ ips open reel format - three to fifteen minutes duration: experimental contemporary compositions are particularly welcome.

For questions on concert arrangements, call Pam Molava (203) 658-5290.

MIT Experimental Music Studio
77 Massachusetts Avenue
Cambridge, MA 02139
Rm 26-313 253-7441

December 3, 1980

The following is a short announcement of two forthcoming Special Summer Programs which we believe may be of interest to your readers:

TECHNIQUES OF COMPUTER SOUND SYNTHESIS
June 22 - July 3, 1981

WORKSHOP IN COMPUTER MUSIC COMPOSITION
July 6 - 31, 1981
Massachusetts Institute of Technology

Program 1 explores current methods of digital sound synthesis in concept and in practice. Comprehensive lectures will cover topics such as sound analysis, additive and non-linear synthesis, digital filtering and reverberation, man-machine interaction, microprocessors, and real-time digital synthesizers. Participants will be able to construct and test these networks in high-quality sound using the Music-11 language and the interactive computers of the MIT Experimental Music Studio. All ideas will be developed from first principles. No prior experience is required.

Program 2 provides opportunity to synthesize a complete medium-scale composition in digital sound. Synthesis networks are created interactively by patching oscillators and filters diagrammatically on a screen. Scores are created when notes played on a musical keyboard appear on the screen in standard musical notation to be edited, printed out, or synthesized by the computer. Lecture demonstrations and private coaching by prominent composition faculty. Limited enrollment will ensure 4 - 6 hours/day/participant of computer time in the Experimental Music Studio. The workshop will culminate in a large public concert of completed participant works on Friday, July 31.

Both programs offered by MIT Studio Director, Professor Barry Vercoe.

For further information, please contact:

Director of the Summer Session
Room E19-356, M.I.T.
Cambridge, Massachusetts 02139

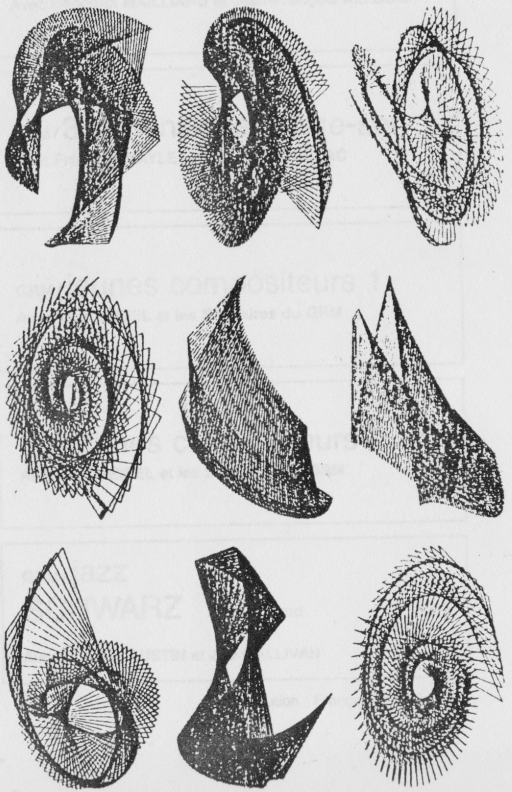
We would greatly appreciate it if an announcement of these programs could be printed in the next possible issue of your publication.
Sincerely,

Barry L. Vercoe
Assoc. Prof. of Music

The Technology in Music and Related Arts Program at Oberlin College produces 6-8 concerts each year. Tape works realized in the audio studio and on digital computers form the bulk of our repertoire. We also program compositions for tape and acoustic media. If you would like your work considered for inclusion on one of our concerts, send tapes and other performance materials to the address shown above. There is no deadline and pieces will be auditioned whenever they arrive. Compositions which call for live performers should be limited to a soloist or to small ensembles of five or less.

CARY NELSON, DIRECTOR
TIMARA PROGRAM
CONSERVATORY OF MUSIC
OBERLIN, OHIO 44074

TIMARA



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	20 h 30	22 h 30
LUNDI 19 JANVIER	MION — Grossier personnage 1980 *Création* REIBEL — Langages imaginaires, 1980 *1re aud.* N. FROGER, Ch. DEFRESSINE sopranos, R. SAFIR tenor, M. PIQUEMAL baryton, A. CAZALET cor, J.N. CROCQ clar., J.P. DROUET perc. Dir. : Guy REIBEL	GRM / synthétiseur Avec le TRIO-GRM-PLUS Laurent CUNIOT, Denis DUFOUR, Yann GESLIN, synthétiseurs
LUNDI 23 FÉVRIER	FERRARI — Presque rien n° 2 1977 PARMEGIANI — L'Écho du Miroir 1980 *1re audition* Avec des images de Michel MOŸ	GRM / ordinateur Avec Benedict MAILLIARD et Jean-François ALLOUIS
LUNDI 23 MARS	DUFOUR — Bocalisas 1977 *Création* BAYLE — Son Vitesse-Lumière 1980 *Création*	GRM / 3 dimensions image-son Avec François BAYLE et Guy VENTOUILLAC
LUNDI 27 AVRIL	TOSI — Qué será Sarah? 1980 *Création* Avec Jean-Pierre DUPUY, piano XENAKIS — La légende d'Eer 1971-77 Musique du "Diatope" *1re audition*	GRM / jeunes compositeurs 1 Avec Guy REIBEL et les Stagiaires du GRM
LUNDI 25 MAI	CHION — Tu 1977-81 *Création de la nouvelle version* ZBAR — Liber duodecim portarum 1981 *Création* Avec l'Ensemble l'ITINÉRAIRE	GRM / jeunes compositeurs 2 Avec Guy REIBEL et les Stagiaires du GRM
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R. Murray Schafer, Editor

In 1975, the World Soundscape Project studied the soundscapes 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.

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R. Murray Schafer

This is the book in which Schafer introduces a new field of study: the soundscape. Adopted by students as the grammar for this new field of research, it has also been enjoyed by general readers and has been praised by leading scientists, artists and sociologists as a work which will have a far-reaching effect on the evolution of human consciousness.

Comments on *The Tuning of the World*:

"It would have been timely in any age, but today . . . it must have top priority."
Marshall McLuhan

"Schafer's book is a consciousness-expanding experience."
Carl Sagan

"Imaginative, erudite and startling."
Alvin Toffler

"Schafer is a very original Canadian . . . *The Tuning of the World* is an unusual sensory experience. The original sections will raise your consciousness of the soundscape to a level of sensitivity you never experienced before."
New York Times

"This is an extraordinary book, fascinating to read and far-reaching in its visionary projection."
Publisher's Weekly

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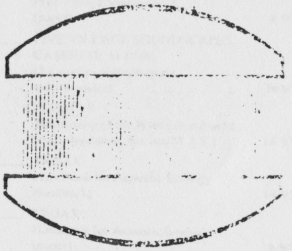
Publications and Recordings



HANDBOOK FOR ACOUSTIC ECOLOGY

Barry Truax, Editor

This book provides a detailed, clearly worded list of definitions and descriptions of acoustic terms from the various arts and sciences which are appropriate for an environmental handbook, and soundscape terms that the World Soundscape Project has invented or adapted.

Included are most of the major terms dealing with sound from the areas of acoustics, psychoacoustics, psychology, phonetics, electroacoustics, communication, and noise control.

"The book is well assembled and should find a place on the book shelves of both the serious student and the interested amateur. It is the unusual blend of subjects which I believe will give the Handbook its wide appeal."

J.B. Large, Institute of Sound & Vibration Research, England

Barry Truax, the editor of this *Handbook*, is a well known Canadian composer whose works for computer and electronic tapes and performers have been performed in nearly every European country and in Canada. His music is recorded on the Melbourne label, distributed by London Records of Canada. He is presently assistant professor in the Department of Communication at Simon Fraser University, Director of the Sonic Research Studio and Director of Research for the World Soundscape Project.

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THE VANCOUVER SOUNDSCAPE

R. Murray Schafer, Editor

A concentrated portrait 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.

In this book are quotations describing the sounds of this city's past, ("earwitness accounts"); articles on its distinctively characteristic sounds; quantitative measurements and analyses of specific sound problem areas.

The AUDIO CASSETTE ALBUM containing 2 cassettes and a 24 page program notes booklet recreate aspects of this soundscape and illustrate the emerging theme of soundscape design.

"Probably the most important piece of urban research done in Vancouver in recent years".

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EUROPEAN SOUND DIARY

R. Murray Schafer, Editor

This is a companion to *Five Village Soundscapes*.

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 their Expedition.

"He awakens a range of sensibilities and perceptions, revealing a broad field of exploration and discovery we would ignore at our own peril."

Yehudi Menuhin

"Murray Schafer is a philosopher of sound, a man who thinks profoundly about what he hears and, just as important, what he doesn't hear. In a sense he's a medieval man for whom the ear still has primacy over the eye, before our visual bias developed. He wants to do for the Soundscape what the Renaissance artist did for landscape when they introduced perspective in their paintings."

William French, Globe & Mail

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011-9	___	TRUAX Handbook for Acoustic Ecology (paper)	6.95

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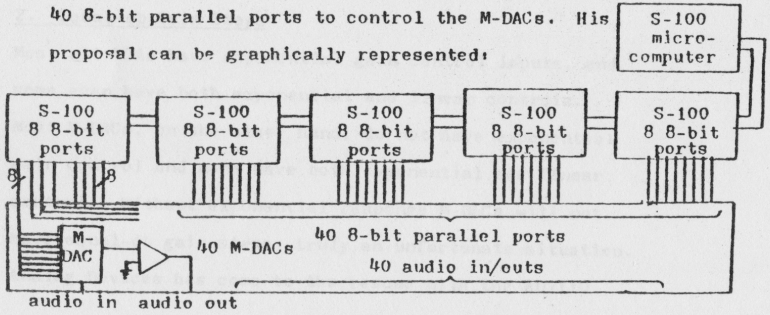
HYBRID SYNTHESIZER AUDIO AMPLITUDE CONTROLLERS

by Mike Yantis* December, 1980

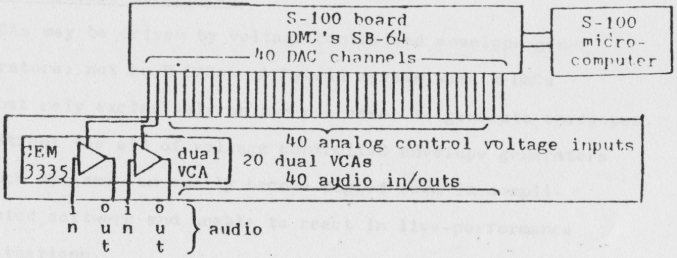
The need for computer control of amplitudes becomes apparent to any hobbyist/musician constructing a hybrid synthesizer (digitally controlled analog synthesizer). One should, as is suggested in Ron Erickson's article "Hybrid Electronic Music Synthesizer,"[1] be able to control a mix of say 4 VCOs' pulse, triangle, and sine waveforms, the resonance of several VCFs, and to control several audio mixers to produce a stereo output from these sources. Erickson fairly suggests that 40 amplitude controllers would be adequate. Erickson chooses to facilitate 40 channels by using 40 multiplying digital-to-analog converters (M-DACs) used as audio attenuators and 40 8-bit parallel ports to control the M-DACs. His proposal can be graphically represented:



1 Ron Erickson, "Hybrid Electronic Music Synthesizer," Computer Music Association Newsletter, Vol. 1, No. 3 (1980).

* Mike Yantis, 1210 E. Pine St., Stayton, OR 97383

Another method of facilitating a 40 channel audio amplitude controller is to use an S-100 multi-channel DAC board (Digital Multi-Media Control makes a 64 channel board called the SB-64). The analog control voltages coming from this board are connected to the control voltage inputs of 20 dual voltage controlled amplifier (VCA) chips (Curtis Electromusic's CEM 3335 is one such chip). This may be visualized:



Besides, quite obviously, reducing the size and complexity of a 40 channel amplitude controller (5 S-100 cards reduced to 1 card, and 40 16-pin chips to 20 14-pin chips), the VCA design has many other advantages over the M-DAC design:

1. Audible Switching Transients

VCAs can easily be designed so that extreme changes at the control inputs do not cause "clicks" at the audio outputs. By simply placing a damping capacitor at the control inputs "clicks" can be prevented without audibly slowing the VCAs' response time. As the following paragraph from Analog Devices points out, M-DACs, however,

are inherently transient prone:

> In general, the application of high-speed-DAC circuits to audio use can give rise to some serious problems. For instance, if the channel gain is to be manipulated while signals are present, large instantaneous gain changes in the presence of signal peaks will almost guarantee annoying audible switching-transients due to the abrupt change in level. As a remedy, one might restrict gain-switching to times when the signal is near zero. A more-pleasing and satisfactory approach is to spread the gain change over about 50ms or more by digitally "ramping" it, using a clock and preset counter.[2]

Both remedies suggested by Analog Devices are not satisfactory. Performers do not want to restrict gain switching only to times when the input signal is near zero; and neither do most hobbyists care to construct 'digital ramping ' circuitry because of added complexities, cost, and board space.

2. Equal-db Gain Steps

Most all VCAs have exponential gain control inputs, and some even have both exponential and linear controls. Most M-DACs, on the other hand, do not have exponential gain control and none have both exponential and linear control. Without exponential response M-DACs will not have equal-db gain steps; truly an unfortunate situation. Analog Devices has come to the rescue with the AD7110 digital audio attenuation device; it is essentially an M-DAC with exponential control, and a bigger price tag.

3. Mixing

Mixing control information from two sources is impossible with M-DACs. With VCAs, however, it is possible to sum a DAC output with a slow VCO, for instance, to produce a tremelo effect.

4. Envelope Generators

VCAs may be driven by voltage controlled envelope generators; not so M-DACs. A hybrid system with M-DACs must rely exclusively on the processor to generate envelopes. Without the aid of voltage controlled envelope generators such systems can easily become bogged down in complicated software and unable to react in live-performance situations.

5. Control Range

VCAs have a much larger control range than M-DACs. VCAs, like CEM's 3335 dual VCA, have a 130 db range; M-DACs, like the AD7110, have an 88 db range.

6. Cost/Size

Finally, the following table should convince the most ardent M-DAC supporter:

2 Analog Devices, Application Guide to CMOS Multiplying DACs, (Norwood, Mass.: Analog Devices, 1978), pg. 37.

M-DAC DESIGN

quantity	item	$/ item	$ total	size/ item	size total
5	8 8-bit parallel output ports S-100 card	150.00	750.00	5x10	25x10
40	AD7110 M-DAC audio atten.	10.00	400.00	16pin	40/16pin
40	op-amp buffers	.50	20.00	8pin	40/8pin
40	resistors	.02	.80		40 res.
80	capacitors	.10	8.00		80 caps.
20	34 pin sockets	3.50	70.00		20/34pin
10	34 pin headers	2.15	21.50		10/34pin
20	feet 34 cond. ribbon cable	.68	13.60		20 feet

TOTAL COST: $1283.10

VCA DESIGN

1	DMC's SB-64 64 channel DAC S-100 card	514.00	514.00	5x10	5x10
20	CEM3335 dual VCA chips	5.50	110.00	14pin	20/14pin
40	op-amp buffers	.50	20.00	8pin	40/8pin
160	resistors	.02	3.20		160 res.
40	capacitors	.10	4.00		40 caps.
40	diodes	.04	1.60		40 diodes
8	20 pin sockets	2.02	16.16		8/20pin
4	20 pin headers	1.25	5.00		4/20pin
8	feet 20 cond. ribbon cable	.50	4.00		8 feet

TOTAL COST: $677.96

Not only is the VCA design electrically superior, it is about ½ the cost of the M-DAC design and about ¼ the size. Also, since only 40 of the SB-64 64 channels are used, additional VCAs may be controlled at little cost or voltage controlled envelope generators may be driven.

The SB-64 may be purchased from:

Digital Multi-Media Control
2338 Patterson #12
Eugene, OR 97405

Those interested in the dual VCA chips may write:

Curtis Electromusic Specialties Inc.
2900 Mauricia Avenue
Santa Clara, CA 95051

Ask for information about CEM's 3310 voltage controlled envelope generator as well.

SOFTWARE AVAILABLE
at the C.S.C. of Padova University

MUSIC
For batch synthesis the well-known programs MUSIC5, MUSIC360, and MUSIC4BF offer the advantage of a possible integration of uses.
The two procedures MU45 and MU54 permit the sharing of data. These programs permit the composer to create instruments by means of modules, obtaining very complex sounds and a large number of simultaneous voices.

ICMS
ICMS (Interactive Computer Music System), which may operate in a multi-programming environment, is available for interactive synthesis. The system features:
- loading and control of operational parameters from a video terminal;
- real time synthesis;
- analysis of acoustic properties of the generated sounds, and immediate visual representation of the complete spectrum for any moment in time;
- storage and access to the library of any previously created or defined score of instruments;
- digital mixing of selected musical material;
- optional printing of any desired information.

ICMS provides an easy introduction to Computer Music even for non-specialists, and it has already been successfully used for a wide range of applications.

MUSICA and NOTE
The language MUSICA permits the transcription of any musical text in traditional staff notation into an alpha-numeric code isomorphic to the original.
This program generates an operational score for synthesis programs by means of a translating procedure, and codes any other alpha-numeric information in order to modify the translating phase and to implement the operational score. The language NOTE interprets a symbolic score coded with the language MUSICA, and provides the operational score for MUSIC5.

EMUS
EMUS elaborates musical structures by means of a structural score. This program has three functions, non necessarily sequential:
- definition or generation of symbolically based material with numeric, graphic or pseudo-aleatoric methods;
- organization of such materials into hierarchical structures, which are then temporally distributed according to the composer's requirements;
- translation of the symbols contained in the temporal structure into the operational score.

The composer can control each function at any point in order to define precisely the final results without working at operational levels.

Analysis Programs
Besides the more specifically musical programs there is a series of programs about acoustical analysis, which are the result of research in voice synthesis: the VAI7 system (VIDE, ASEQ, INTR) for interactive analysis and sound segmentation; analysis and synthesis programs by means of linear prediction code techniques (LPC); other programs for numeric signal processing.

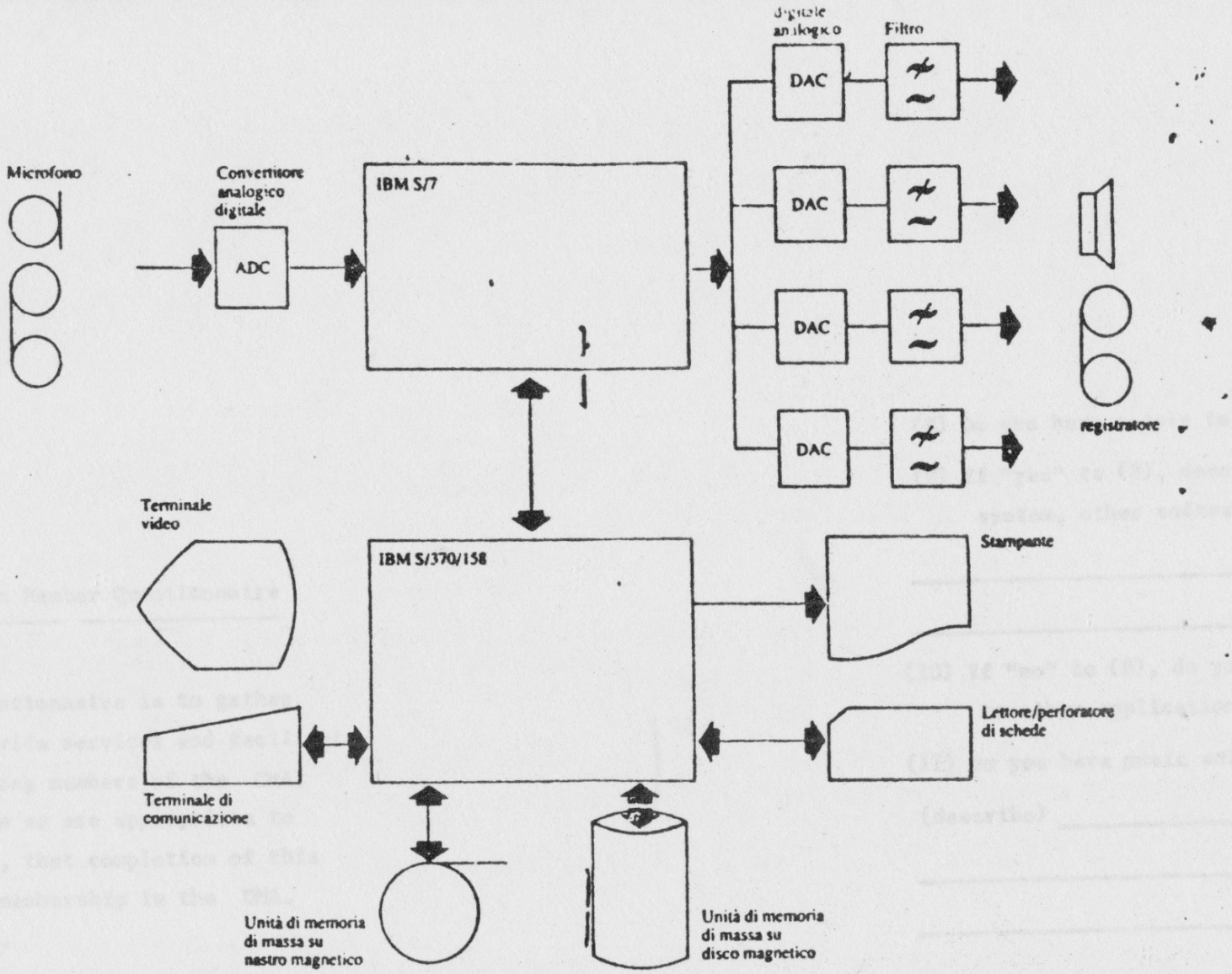
System Organization
All programs are run from time-sharing terminals under TSO (Time Sharing Options) monitor control. A set of coordinated commands permits the composer to run program sequences easily with an operational consistency.
Continually expanding libraries containing fully documented subprograms, scores and instruments are also directly available to the user. The whole system of commands and the library may also be easily accessed from any batch terminal connected with S/370. Different people may simultaneously use the whole system of programs, without interference even for several applications. ■

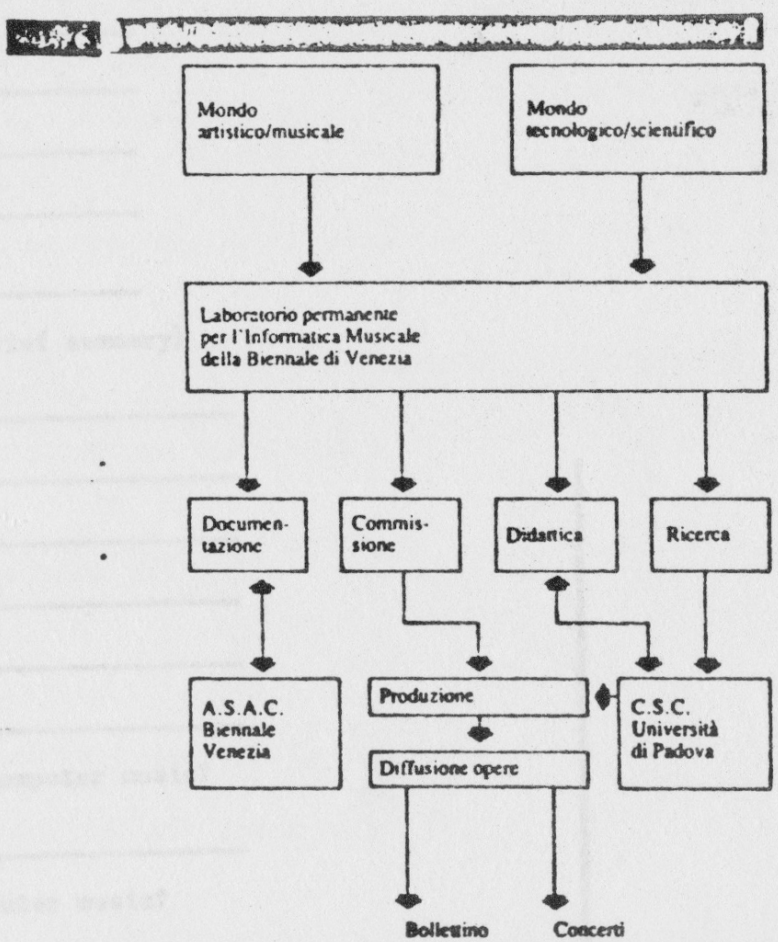
HARDWARE AVAILABLE
at the C.S.C. of Padova University

Computer IBM 370/158
- 1 central unit IBM 370/158, 2 Mbytes of memory (32 bit-word)
- 6 IBM 3350 disk units, 317 Mbytes each
- 6 IBM 3330, 100 Mbytes each
- 4 IBM 2400 tape drives, 9 tracks
- 4 IBM 3270 video terminals with light pen
- 2 IBM 2741 terminals for telecommunications
- 2 IBM 3780 batch terminals
- 1 IBM 3777 batch terminal with printer, 1100 lines/minute, and reader, 300 cards/minute
- 1 IBM 1403 printer, 1100 lines/minute
- 1 IBM 1403 printer, 600 lines/minute
- 1 IBM 3505 reader, 1200 cards/minute
- 1 925/1036 calcomp plotter
- 1 565 calcomp plotter

Minicomputer IBM S/7
- 16 kwords of memory (16 bit-word)
- 2 disks, with a capacity of 1.25 Mwords each (16 bit-word)
- 1 channel attachment that permits memory to memory transmission from S/370 to S/7 at 256 Kbytes/sec. and vice versa
- 12 D/A converters, 12 bits
- 1 A/D converters, 12 bits

Minicomputer NOVA 1200 JUMBO
- 32 Kwords of memory (16 bit-word)
- 1 ASR 33 teletype
- 1 double drive cassette unit
- 1 alpha-numeric video display unit
- 2 disk drives + 1 disk controller
- 1 card reader
- 1 printer
- 1 16-channel 12-bit D/A converter
- 2 12-bit D/A converters
- 1 tape drive, 16 Kwords, 16 Kwords/sec., 800 BPI, 9 tracks, and 1 controller.


Digitale analogico
Filtro
DAC
DAC
DAC
DAC
Microfono
Convertitore analogico digitale
ADC
IBM S/7
registratore
Terminale video
IBM S/370/158
Stampante
Lettore/perforatore di schede
Terminale di comunicazione
Unità di memoria di massa su nastro magnetico
Unità di memoria di massa su disco magnetico


Mondo artistico/musicale
Mondo tecnologico/scientifico
Laboratorio permanente per l'Informatica Musicale della Biennale di Venezia
Documentazione
Commissione
Didattica
Ricerca
A.S.A.C. Biennale Venezia
Produzione
Diffusione opere
C.S.C. Università di Padova
Bollettino
Concerti

Computer Music Association Member Questionnaire

Note: The purpose of this questionnaire is to gather information which may help provide services and facilitate communication and exchanges among members of the CMA. Please answer as many questions as are appropriate to your situation. Note, however, that completion of this form is not a prerequisite to membership in the CMA. Thank you for your cooperation.

(1) name _____

(2) address _____

_____

_____

(3) telephone number _____

(4) background (education, work, etc. - a brief summary)

_____

_____

_____

_____

_____

_____

(5) When did you first begin to work with computer music?

_____

(6) What are your areas of interest in computer music?

_____

(7) What are your current areas of activity in computer music?

_____

(8) Do you have access to a computer music facility? _____

(9) If "yes" to (8), describe the facility (hardware, operating system, other software)

_____

_____

(10) If "no" to (8), do you have access to a computer dedicated to other applications? _____

(11) Do you have music software available which others could use?

(describe) _____

_____

_____

_____

(12) If "yes" to (11), what format (file system, etc.) and medium (e.g., 9-trk tape) is it available on, and for what terms?

_____

_____

(13) What software would you like to receive from others?

_____

_____

(14) If you are a composer of computer music, provide (on a separate sheet) a list of your compositions, your publisher (if any), and information on recordings (commercial or private) and their availability (e.g., rental or sale of tapes or scores).

(15) If you have written papers or books on computer music, provide (on a separate sheet) a list of these papers, their place of publication, and information on their availability.

(16) If you have purely technical interests and skills, please list them on a separate sheet.

(17) If you have any additional comments, please submit them on a separate sheet.

:::::::::::::::
CMA OPEN FORUM
:::::::::::::::

One of the broader purposes of the C.M.A. is to establish links between those interested in the subject of computer applications to music. The Newsletter offers a physical channel for communication and we want this channel to remain as functional and efficient as possible for members and administrators of CMA.

Recently, some questions have been revived within the computer music community as to the actual need for such an Association. (These questions were also raised at the 1977 La Jolla ICMC.) If it is to exist, exactly how can it serve its members? For the moment, there is this Newsletter and it can and should be used to disseminate the following questions and to publish your responses and input.

The questions formulated thus far are below. Please respond to these and pose any others you see as relevant. This forum is open to CMA members and non-members.

1) How do you feel about the general need for a C.M.A.? What specifically specifically should/could it do for you?

2) Should the C.M.A. continue to publish and distribute a Newsletter?
   a) If so, how could its features complement those of the M.I.T. Press Computer Music Journal?
   b) What should the focus of the Newsletter be such that it provides a definite service without overlapping with the Journal?

3) Should C.M.A. membership automatically include subscription to the Computer Music Journal? If so, understand that we will obviously need to cover the cost within the membership fees.

4) What role, if any, should C.M.A. take with respect to the Int'l Computer Music Conferences?
   a) Should it remain totally uninvolved?
   b) Should it be involved in the site selection?
   c) Should it be involved in planning?
   d) Should it be involved in sponsoring, etc., etc.?

5) What questions or suggestions do you have concerning the formation and/or maintenance of such an organization?

6) What other thoughts and considerations do you have concerning any aspect of C.M.A. or your (group's) relationship with it?

It is imperative that we openly pose and seek to resolve these kinds of questions, especially while the Association is in its germination phase. Perhaps it is useful to bear in mind that the degree to which CMA can serve you is directly related to your participation and willingness to provide input and/or feedback.

Your prompt response will be appreciated. Send these and any input to:

Computer Music Association
P.O. Box 1634
San Francisco, CA 94101

Thank You,

[illegible]

Your responses, please...

1)

2)

3)

4)

5)

6)

Proceedings of the 1978 International Computer Music Conference
In Two Volumes
Compiled by C. Roads
Published by the School of Music, Northwestern University in conjunction with *Computer Music Journal*

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All orders must be prepaid. Send to: Northwestern University Press, 1735 Benson Avenue, Evanston, IL 60201, USA; Attn: Order Dept /Mr. Wall.

Proceedings of the 1977 International Computer Music Conference Published by the Computer Music Association

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270 pages, two sided-copy, spiral binding $14.50 + $1.50 postage (4th class) = $16.00 Quantity_____

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!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
C.M.A. Membership Information
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

The Computer Music Association accepts members internationally. Regular membership fees are $6.00/year. Student fees are $4.00/year (please enclose a copy of your current student registration card). All members will be entitled to receive the quarterly C.M.A. Newsletter. All checks must be for U.S. dollars, drawn on a U.S. bank.

All articles or announcements submitted for entry into the Newsletter must be in facsimile form (copy-ready). Materials written in any language are acceptable, however, if not in English, please submit an abstract in a second language.

!!!!!!!!!!!!!!!!!!!!!!!!
Advertising Information
!!!!!!!!!!!!!!!!!!!!!!!!

A limited number of ads can be published in the C.M.A. Newsletter. For rate and deadline information contact the address below.

Newsletter

Journals Department
The MIT Press

28 Carleton Street
Cambridge MA 02142
(617) 253 2889

COMPUTER MUSIC JOURNAL

A quarterly publication of The MIT Press

Editor: C. Roads, MIT
Consulting Editor: John Strawn, Stanford

For Immediate Release

The first survey of the applications of Artificial Intelligence (AI) to music is presented in the special two-part issue of Computer Music Journal just published by The MIT Press. Computer music is the far frontier and the future of modern musical art. This newest development should stimulate advancement into an era of intelligent music systems. In addition, AI research in modeling human musical intelligence will help us to understand better these complex human capabilities.

Expectations are high for the innovative prospects of the merger of AI and music. In recent years, developments in computer music have opened up a new sound world, which has been limited only by an incomplete and unsatisfactory language for explaining music to the computer. This in turn set limits on musical expression. Now, with the application of the flexible and powerful tools of AI, composers will be able to work on computer systems which have a built-in understanding of music. Specific applications include:

*Devices which will be capable of listening to and understanding music. These devices will not only actually hear music, but will be able to perform sophisticated analyses of live or recorded musical sound, on stage or in the studio, as performed by one or one-hundred musicians;
*Use of the computer as an intelligent and interactive assistant for musical score analysis and composition;
*Automatic music transcription from sound to score;
*Improved multi-level graphic representation of scores and sound, in intuitive, natural languages which will be far superior to the current inadequate and rigid protocols in use. This means improved communication between musicians and computer music systems;
*Intelligent music instruments;
*Deeper, generative theories of music.

Other topics covered in the two issues include research underway to explain human musical cognition, and an introduction to LISP, the standard AI language. Future issues of Computer Music Journal will continue to cover a wide variety of applications of computer and digital technology to music.

Review copies of these special issues are available. Contact: Julie Zuckman

COMPUTER MUSIC ASSOCIATION

APPLICATION FOR MEMBERSHIP

The Computer Music Association is interested in helping develop and further of the art and science of computer music. The Association, which has applied for status as a non-profit tax-exempt corporation registered in the State of California, serves as a place for exchanging information about the use of computers and digital hardware and software for musical purposes. In addition, the Association can serve the computer music community by assisting in the organization of the International Computer Music Conferences.

There are three classes of membership: general, student, and sustaining. Student memberships are available to students enrolled in a recognized school, college, or university. Sustaining memberships are available to persons, corporations, or organizations making a substantial donation (currently, no less that $25) to the Association. The Association has members in North America, Europe, Japan, and Australia.

Each member receives a copy of the quarterly *Newsletter* published by the Association.

A limited amount of advertising may be accepted for publication in the *Newsletter*. For rates and further information, contact the Association at the address given below.

To apply for membership in the Association, complete this form and mail to:

Computer Music Association
P. O. Box 1634
San Francisco CA 94101
U. S. A

Membership rates:

regular: $6 per year
student: $4 per year

Make check or money order payable to Computer Music Association.

Name _____

Address _____

_____

Affiliation _____

COMPUTER MUSIC ASSOCIATION
APPLICATION FOR MEMBERSHIP

The Computer Music Association is active in developing and furthering the art and science of computer music. The Association, which is a non-profit corporation registered in the State of California (federal tax-exempt status is pending), serves as a place for exchanging information about the use of computers and digital hardware and software for musical purposes. In addition, the Association serves the computer music community by assisting in the organization of the International Computer Music Conferences.

There are four classes of membership: general, student, sustaining, and institutional. Student memberships are available to students enrolled in a recognized school, college, or university. Sustaining memberships are available to persons making a substantial donation (currently, no less than US$30.00) to the Association. Institutional memberships are available to libraries, corporations, and similar organizations. The Association has members in North and South America, Europe, Japan, and Austrailia.

Each member receives a copy of the quarterly Newsletter published by the Association. Other benefits of membership include membership discounts for CMA Publications, which include the Proceedings of the various International Computer Music Conferences (publications order form available on request).

To apply for membership in the Association, complete this form and mail it to:

Computer Music Association
P.O. Box 1634
San Francisco CA 94101-1634
U.S.A.

Membership rates (effective Jan. 1, 1982)

Regular:	US$12.00 per year
Student:	US$ 8.00 per year
Sustaining:	US$30.00 per year
Institutional:	US$50.00 per year

Make check or money order (drawn in US$ on a US bank) payable to Computer Music Association.

Name _____

Address _____

_____

Affiliation _____

PLEASE POST

Computer Music Association Membership Survey

NAME_____
ADDRESS_____
CITY|STATE_____ ZIP_____
COUNTRY_____
TEL._____ _____

Your Permission to Disclose Address to CMA Members

____ yes ____ no

CURRENTLY EMPLOYED AS_____
CURRENTLY EMPLOYED BY_____ (optional)

BRIEFLY DESCRIBE YOUR BACKGROUND IN COMPUTER APPLICATIONS TO MUSIC_____
_____
_____
_____

DESCRIBE YOUR CURRENT COMPUTER MUSIC ACTIVITIES_____
_____
_____

DESCRIBE BRIEFLY THE HARDWARE/SOFTWARE SYSTEM YOU ARE USING FOR FOR COMPUTER MUSIC_____
_____
_____

(CMA is currently preparing a survey form for studio reports)

DO YOU HAVE SOFTWARE/HARDWARE AVAILABLE FOR DISTRIBUTION TO OTHER CMA MEMBERS_____

BRIEFLY DESCRIBE THE PRODUCTS

_____
_____

LIST TAPE FORMAT (7/9 track, density, etc.)_____
_____

WHAT SOFTWARE/HARDWARE WOULD YOU LIKE TO RECEIVE FROM CMA MEMBERS?_____
_____
_____

Optional: LIST OF YOUR COMPOSTIONS. IF AVAILABLE TO CMA MEMBERS, PLEASE INDICATE TERMS OF OFFER (e.g., price/free, exchange, tape required, etc.). USE SEPARATE SHEETS OF PAPER IF NECESSARY.