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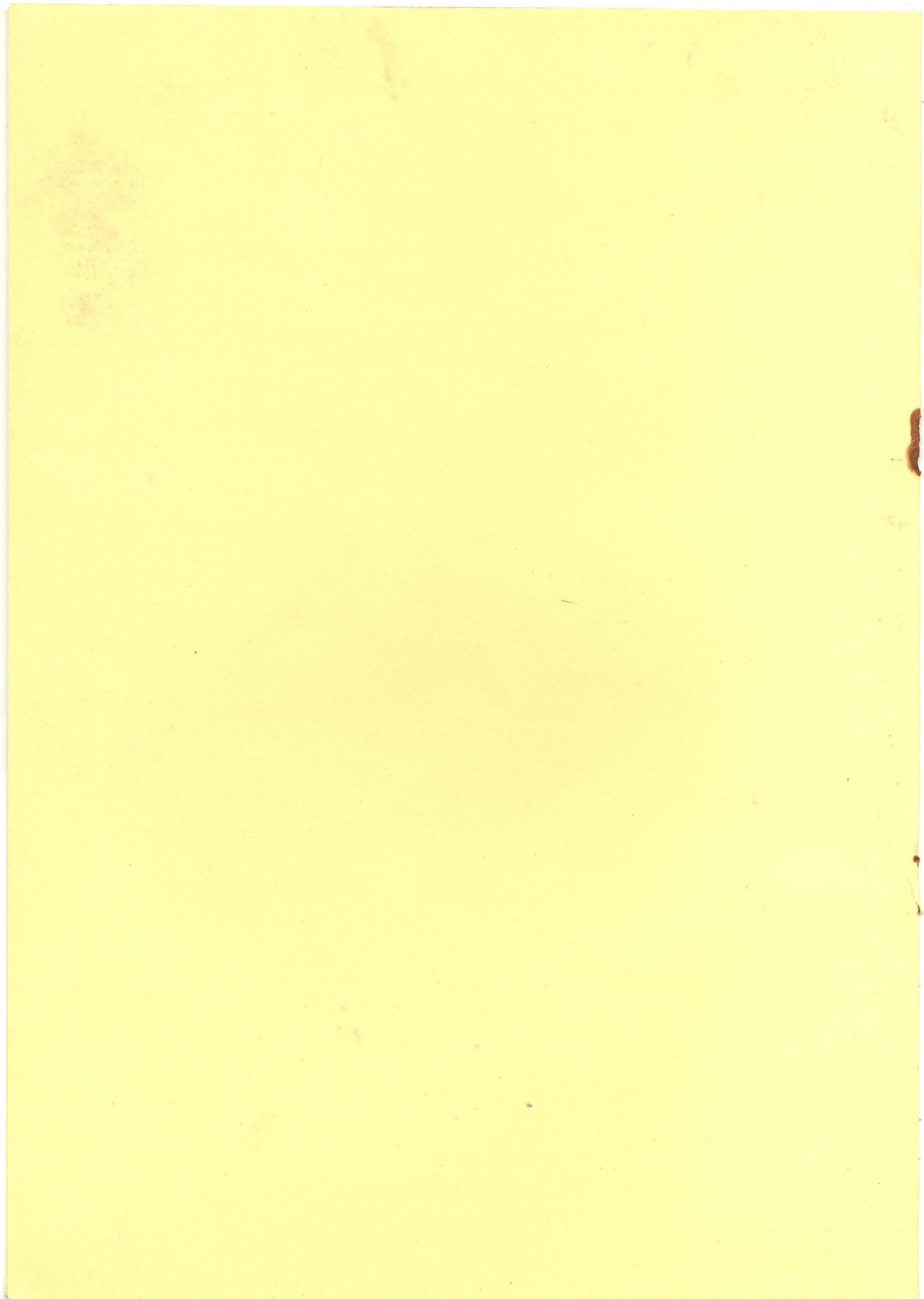
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ELECTRONIC MUSIC ISSUE

- Intermodulation & Ring Modulation
- Hugh Davies's Instruments ●SMA
- West Square Studio ●Reviews & Reports





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# CONTACT

## SUMMER 1977

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### ISSUE 17

EDITOR  
Keith Potter

ASSOCIATE EDITORS  
Hilary Bracefield  
David Roberts  
John Shepherd

EDITORIAL ADDRESS  
Keith Potter  
Department of Music  
University of London  
Goldsmiths' College  
New Cross  
London SE14 6NW

### ELECTRONIC MUSIC ISSUE

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**EDITORIAL ADDRESS** for all contributions, material for review, etc.: Keith Potter, Department of Music, University of London Goldsmiths' College, New Cross, London, SE14 6NW, England.

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**BUSINESS ADDRESS** for any other business: Mrs. Hilary Bracefield, Department of Music, The Northern Ireland Polytechnic, Newtownabbey, Co. Antrim, BT37 0QB, Northern Ireland

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# Intermodulation: A Short History

ON THE EVENING of Saturday July 26, 1969, in a plastic geodesic dome on Tower Hill, a concert was given by four players who were subsequently to become the initial members of the live-electronics group Intermodulation: Andrew Powell (guitars, keyboards), Roger Smalley (keyboards, electronics), Tim Souster (viola, keyboards, electronics) and Robin Thompson (soprano sax, bassoon, keyboards and guitar). (Andrew Powell was succeeded in 1970 by Peter Britton (percussion, electronics, keyboards).) The concert was characterised by the rough and ready technology typical of electronic ventures at that time. Borrowed amplifiers failed to assert themselves. The dial of an ex-army sine-tone oscillator was nimbly controlled by Robin Thompson with his foot. A Hugh Davies-built ring-modulator nestled in its cardboard box on the floor. The 'visuals' (in the original version of my *Triple Music I*, written specially for this concert) consisted of coloured slides of food, footballers and political events, most of which failed to appear or did so upside-down. The whole occasion was dominated by a PA system lent and personally installed by Pete Townshend of The Who, who could be glimpsed lowering behind the loudspeaker columns throughout the show. Those lucky enough to be connected to this (for those days) mighty array of WEM equipment were able to play very loud indeed: I can remember little else.

## TECHNICAL PRE-CONDITIONS

In 1968 Roger Smalley became composer-in-residence at King's College, Cambridge; I followed suit in 1969. At this time both Andrew Powell and Peter Britton were studying music at Cambridge, both supervised to a certain extent by either Smalley or myself.

King's College made an initial loan of £800 with which three VCS3 synthesizers, a Vox electric organ, a Hohner electric piano, two Ferrograph tape recorders and amplification equipment were purchased. Several subsequent smaller grants were made by King's College, but assistance in the purchase of equipment requested later of the Arts Council, the Gulbenkian Foundation and the Vaughan Williams Trust was refused. All subsequent purchases of equipment, maintenance and running costs were financed by the group itself out of earnings.

## INSPIRATIONS

- 1966 Stockhausen group at the Concert Hall, Broadcasting House, playing *Mikrophonie I* and *Prozession*  
Soft Machine at the Round House with Mark Boyle's lights
- 1967 AMM sessions at the London School of Economics, Commonwealth Institute, etc.  
Cage and Cunningham at the Savile Theatre  
Bedford, Cardew and Tilbury recordings at the BBC
- 1968 Victor Schonfield's 'Sounds of Discovery' concerts, including Terry Riley's *In C*, La Monte Young's *Death Chant* and a concert by Musica Elettronica Viva  
Cream at the Savile Theatre  
The Who at the Marquee
- 1969 Sonic Arts Union at the Round House  
*In C* at the Royal Academy of Music with Francis Monkman, Robin Thompson and Darryl Way  
Cardew's *Schooltime Compositions* at the International Students' House, Great Portland Street  
Cardew's long concert at the Round House including Terry Jennings' String Trio and Cardew's *Great Digest Paragraph 2*

## GENESIS

Realisation of Stockhausen's *Plus-Minus* at the Wigmore Hall in May 1968 by Philip Pilkington (amplified clavichord), Roger Smalley (piano), Tim Souster (amplified viola: 'a poisonous sound')



wrote Christopher Grier) and Robin Thompson (woodwinds).

Realisation of *Plus-Minus* in BBC Maida Vale 1 studio by Gavin Bryars (double bass, piano and tapes; mainly of *Eloise* by Paul and Barry Ryan), Tim Souster (jangle-box, viola, table-harp and tapes) and John Tilbury (organ and tapes).

Roger Smalley's *Pulses for 5 x 4 Players* performed by the London Sinfonietta at the Queen Elizabeth Hall in Autumn 1969 (live-electronic manipulation of instrumental sounds).

Cage concert at the Purcell Room, Summer 1969, including *Variations VI*.

## STATEMENT OF INTENT

I formulated this summary of Intermodulation's aims for the programme book of our Round House Prom in 1974.

### What is Intermodulation?

Until recently the term was used only in a technical sense for something to be avoided at all costs: the tendency of certain frequencies when reproduced through loudspeakers to interfere with each other, producing different, unwanted frequencies. Then, when writing about his composition *Telemusik* (1966), Stockhausen used the term in a more loosely metaphorical way to denote the principal electronic technique applied in this tape composition: the integration of many different kinds of highly contrasted music into a new unity.

In 1969 the group Intermodulation was formed with the intention of developing techniques of integration and intercommunication in the field of live-electronics, in which instruments of a more or less conventional nature are extended and transformed by electronic means in a real-time concert situation.

Here the problem of achieving any real integration is intensified by the unpredictable nature of the material concerned; the often completely spontaneous self-expression of four musical human beings, as opposed to the fixed musical objects on tape which may be manipulated in a calculated way in an electronic studio. In seeking a solution to this problem, not only do the players have to be fully and instantly communicative with one another, but they must also develop electronic techniques for the extension and transformation of instrumental sound which enable them to make coherently audible to the listener their reactions to each other's playing.

An example: one player states a musical idea with a certain constellation of pitches, rhythm, timbre and dynamics. A second player may take the pitches of this idea and electronically modulate with them the material he is already playing. A third player may use the rhythm as a means of segmenting the material he is playing. A fourth could imitate or negate the timbre and dynamics of the initial idea, or he could 'simply' remain silent (an important and demanding aspect of free ensemble-playing). The intermodulatory spiral continues with the first player in turn responding to what he has heard, perhaps to an aspect of that idea of which he had not initially been aware and which had only become clear to him through the medium of his fellow players' responsiveness.

This kind of process is not typical of every Intermodulation performance. The group has always played a wide range of music, from semi-improvised pieces, with only a few instructions given by the composer in advance, to pieces with fully notated scores. This stems from the group's belief that the composer today has at his disposal a multiplicity of possibilities, that exclusivity is futile and that all these possibilities are inter-related and mutually influential. Thus when the group performs a text score . . . it brings to it its experience of the performance and/or composition of fixed scores; and when it performs a strictly notated score . . . it tries not to lose hearing the kind of music-making which sometimes arises during the realisation of improvisatory or intuitive music. 'Intermodulations' in the metaphorical sense can be composed as well as improvised. As a BBC recording engineer cryptically noted on his form after a recent recording by the group, . . . 'all intermodulations are intentional'.

## REPERTOIRE

(Works written specially for Intermodulation are marked with an asterisk.)

David Bedford, *Holy Thursday with squeakers*\*

Cornelius Cardew, *Material for harmony instruments, Volo Solo, Song of Pleasure (Schooltime Compositions), Great Digest Paragraph 6*

Brian Dennis, *Programmes*\* (never performed)

Simon Emmerson, *Chile!*

Andrew Frank, *Dreams of Reason*\* (never performed)

Nicolaus Anton Huber, *Von . . . bis . . .*

Adrian Jack, *You told me so yourself . . .*\*

Andrew Powell, *The Old Pavilion*\*

Terry Riley, *Dorian Reeds, Dorian Viola, Dorian Marimba, Dorian Mix, Keyboard Studies*



Frederic Rzewski, *Les moutons de Panurge*

Roger Smalley, *Transformation, Melody Study I,\* Beat Music* (with orchestra),\* *Monody, Zeitebenen,\* Memories\**

Tim Souster, *Triple Music I,\* Chinese Whispers,\* Waste Land Music,\* Quints Jam,\* Spectral,\* Break, Zorna,\* World Music\**

Karlheinz Stockhausen, *Prozession, Spiral, Pole, Expo, Sternklang*, numerous pieces from the collections *Aus den sieben Tagen* and *Für kommende Zeiten*

Yuji Takahashi, *Bridges*

John White, *P.T. Machine*

Collective Compositions, *Set, Performants, Group Composition No.1*

## SOME MEMORABLE CONCERTS

Yeovil Technical College: the complete realisation of the audience participation aspect of Rzewski's *Les moutons de Panurge*.

Dr Schulz's Wandelkonzert on all floors of the German Institute in London which lent the groups present (Intermodulation, Gentle Fire, Scratch Orchestra, Portsmouth Sinfonia, etc.) a faint and transitory aura of unanimity.

Ely Cathedral concert with Riley's *Dorian Mix* played by viola and sax moving slowly along either balcony of the vast Norman nave. We were joined in the Riley and in Cardew's *Material* by musicological superstar Joshua Rifkin playing harpsichord.

John White's *P.T. Machine* played in a moving paternoster lift in Cologne. The spaces between each player in the lift compartments were too great, so the audience, milling around the ground-floor foyer, were only occasionally reminded that a performance was in progress. John White would have approved. Previously we had played *Dorian Mix* Cologne Cathedral square, thus eliciting complaints from a nearby hotel and headlines in the local press such as 'Electronic Noise Alerts Police'.

A concert best forgotten: Central London Polytechnic Canteen. The 'hall' was in use until shortly before the concert, an impossible condition for electronic music. There was no advertising or organisation. I played *Spiral* on the electric guitar for the first and last time.

The strangest programme we ever took part in was organised by an enterprising teacher at a comprehensive school out in the wilds of East Anglia who was also a lay-clerk at Ely Cathedral, where he organised the concert already referred to above in the face of considerable opposition. The school concert began with a 12th century dance played on recorders and percussion, progressed through the centuries with *Sumer is icumen in*, Claude Gervaise, Byrd, Bach, Schubert, Maxwell Davies, Flanders and Swann's 'Elephant Song', a percussion improvisation 'Creation Ritual' by A.R. Waller, and culminated in a realisation by Intermodulation of a part of *Aus den sieben Tagen*, followed by Rzewski's *Les moutons de Panurge*.

## REACTIONS

Reviewers at our concerts, often at a loss to know what to write about the music, turned their attention to our dress. Gerald Lerner's review of our first public concert in March 1970 was evidence for this. He wrote: '... the first work on the programme [was] *The Old Pavilion* by Andrew Powell (who was present in shoulder-length hair, pink jersey, and yellow scarf). Characteristically this work is long, and seems mindless, and calculated to pierce the ear with the equivalent of five dentists' high-speed drills ... Mr Smalley and his colleagues gave the audience a 'collective improvisation'. This, I confess, called for more physical courage than I possess, and I ducked it, unfortunately missing too, a Stockhausen piece called *Set Sail for the Sun*. But I did hear *Transformation* by Roger Smalley, who is not merely trendy as the flowered shirt, matching tie, and shorter hair indicated in this case.... It is a very serious piece but the difference between visual cause and audible effect has a surreal, almost Marx Bros. comedy in it. "Smalley's magic piano", it should be called.' A (largely perspicacious) review of our Edinburgh concert by Conrad Wilson appeared under the heading 'Novel electronic concert in casual gear'.

But perhaps the most misguided review we ever received came (perhaps inevitably) from Peter Stadlen: not wounding to us so much as to Riley and the whole concept of his beautifully frail scores which can blossom into such marvellous music. Under the heading of 'Group of four notes as Prom piece' Stadlen wrote with his characteristically contorted brilliance: 'I wonder who, if anyone, at the BBC examined Terry Riley's *Keyboard Studies* before it was decided to have them performed by the Intermodulation Group at the Albert Hall Promenade concert late last night. It took me rather less than five minutes to copy the score and I cannot believe that Mr Riley took longer over composing it.'

Response to concerts from listeners varied from the rapturous ('That was an experience') to the hostile ('It's taken centuries of civilisation to get away from these sounds'), but most people in this country,



particularly in London, seemed simply blasé ('How do you think it went?'). Radio heightens, rather than diminishes, the impression that one is working in a vacuum. Occasionally, however, people bother to write, and this closing of the circle of communication was, for me at least, the most satisfying and exciting aspect of the whole venture.

### HIC JACET?

The last Intermodulation concert took place in early 1976. At that time Robin Thompson had already departed to take up a course of study at the University of Tokyo, and soon afterwards Roger Smalley became a visiting fellow at the University of Western Australia. This brought to a close a career of over 70 concerts in Britain, West Germany, France, Poland and Iran, and numerous broadcasts for BBC, WDR, Radio Bremen and Hessischer Rundfunk. Intermodulation made no records, but its members played on the DGG recording of Stockhausen's *Sternklang*. Whether the group has played its last note remains to be seen.

In a nutshell my advice to those contemplating forming performance groups themselves is: don't. The relative indifference of audiences and record companies (the BBC was a welcome exception), the lack of financial support from our principal funding organisation, the very low level of concert fees in this country, the sheer drudgery of touring with electronic equipment and the unbelievable complications of taking this equipment through customs: all this often made one wish one belonged to something simple and easy, like a string quartet. But communicating with a live audience and exploring new interactive musical possibilities is very habit-forming: in the summer of 1976 I formed a new live-electronics group, 0dB with Peter Britton and Tony Greenwood.

## *Simon Bainbridge*

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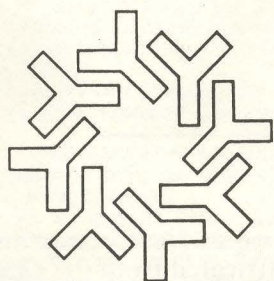
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# YORKSHIRE ARTS

## NORTHERN CONTEMPORARY MUSIC CIRCUIT – YORKSHIRE DATES 1977/78 SEASON

**Gillian Weir Organ Recital:** Huddersfield Polytechnic School of Music 4 October, Leeds St. Bartholomews Armley 6 October

**BBC Northern Singers:** Bradford Cartwright Hall 8 November, Giggleswick School 13 November, Keighley Temperance Hall 15 November, Richmond Comprehensive School 26 November

**Brighouse and Rastrick Band – Maurice Handford/Derek Broadbent:** Ampleforth College 13 November, York Temple Anderson Hall 20 November, Ingleton Ingleborough Community Centre 20 January, Leeds Town Hall 21 January, Huddersfield Town Hall 5 May

**Leonardo Piano Trio.** Scarborough Public Library 22 November, Horbury School 26 November

**Great Jazz Solos:** Dewsbury Town Hall 23 November, Sheffield Hurlfield Campus 26 November, Ingleton Ingleborough Community Centre 3 December

**Lindsay String Quartet:** Huddersfield Polytechnic 12 January, Keighley Music Club 17 January, Leeds University 18 January, York Arts Centre 19 January, Richmond Comprehensive School 21 January

**Rijnmond Percussion Ensemble with Frans van de Wiel, Flute** (by arrangement with Gaudeamus Foundation): Halifax Heath Grammar School 25 January, Wentworth Woodhouse Lady Mabel College 26 January. Other dates in Leeds, Sheffield and York to be arranged.

**Peter Donohoe Piano Recital:** Huddersfield Town Hall 6 February, Scarborough Public Library 7 February, Leeds City Art Gallery (lunchtime) 8 February, Sheffield Hurlfield Campus 14 February, Bradford Central Library (lunchtime) 16 February

**Richard Markham Piano Recital:** Leeds City Art Gallery (lunchtime) 1 March, Bradford Central Library (lunchtime) 2 March, Huddersfield Town Hall (lunchtime) 7 March, Doncaster Danum Grammar School 9 March, Sheffield Hurlfield Campus 10 March

**Dreamtiger Piano Trio:** Huddersfield Polytechnic 13 March, Keighley Temperance Hall 14 March, Sheffield University 15 March, Wentworth Woodhouse Lady Mabel College 16 March, York Arts Centre 17 March, Ingleton Ingleborough Community Centre 18 March

For full details of programmes, and from September onwards copies of the special contemporary music leaflet, contact Richard Phillips, Music Officer, Yorkshire Arts Association, Glyde House, Glydegate, Bradford 5 (Bradford 23051).

## CONTEMPORARY MUSIC FESTIVAL

Plans are being made to hold a festival of contemporary music in Huddersfield centred on the Polytechnic there with the help of Kirklees Leisure Services and the Yorkshire Arts Association in September 1978, and the third competition for young Yorkshire composers will be tied in with this event. For further information contact Richard Phillips, Music Officer, Yorkshire Arts Association, Glyde House, Glydegate, Bradford 5 (Bradford 23051).



## Hugh Davies: Instrument Maker

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**Activities** My title would be misleading if it were taken to mean that Hugh Davies were of importance only as a maker of instruments or that his instrument making could be effectively extricated from the entire pattern of his work to be discussed in vacuo (even if this latter impossibility must be attempted). Everything he does gives the appearance of being interlinked: he has not necessarily striven for such an end, but is pleased nevertheless to discover the integrity that underlies the diversity of his activities. So though a series of roles may be projected upon him — instrument inventor and constructor, composer, performer, exhibitor, teacher, writer on music, director of an electronic music studio, lecturer, translator, etc. — each individually is more or less incomprehensible if the others are disregarded. (All this goes to say that writing an article about Hugh Davies as instrument maker is not so very different from writing an article about Hugh Davies tout court.)

**Amplification** One of the distinctive features of Davies's instruments, and one that distinguishes his work from that of most other instrument makers (in this country at least), is his use of electronic amplification as an essential element in their constitution. Amplification has permitted him the use of a range of objects as vibrating agents that would be inappropriate as part of an acoustic instrument; it produces various possibilities for timbral modification through filtering, etc.; and since it obviates the need for a resonator, construction is simplified, thus saving time and money and facilitating experimentation. He has noted that Harry Partch (for whom he has a high regard), in a period of over 40 years of making acoustic instruments, produced only 45 or so examples. If Partch wanted to obtain a low note he had to build a large instrument with a suitable resonator; through the use of amplification, Davies has been able to create very low sounds from instruments that are quite compact, easily portable and of simple construction. About half (i.e. over 50) of his instruments are amplified, this figure including most of those intended for concert use.

**Beginnings** Davies began making instruments in 1967 as an offshoot of a deep involvement with electronic music. He had been building up a small studio of his own, having very little money and working partly with borrowed equipment. He decided he needed a wider range of sounds than could be obtained either from oscillators or from the simple manipulation of microphone recordings, and devised a series of objects to which a microphone could be attached, recording the sounds made by broken lightbulbs, small springs, combs, etc. Gradually he realised the potential of working with such objects as performance instruments rather than just employing them as studio sound sources.

**Categories** As one might expect, Davies's instruments do not fall into watertight categories; instead there are a number of recurrent themes that are combined and recombined throughout his output. These 'themes' may take the form of the materials used, the type of microphone, the container in which the instrument is placed, the context within which it is used, the manner in which it is played, etc. The broadest division might be into instruments for performance, exhibition (i.e. approaching the status of sound sculptures) and toys, yet even here there is a good deal of overlapping. The most important families of instruments to be dealt with under individual headings in this article are the shozygs and springboards (but the notion of 'importance' brings in a qualitative judgement that Davies might not go along with).

**Composition** Davies is less active as a composer than he was at one time: though composition is still important to him, and he tries to set aside some time every year for composing, his work with instruments seems, he says, to fulfil that particular creative urge. Certainly he approaches instrument making as you might expect a composer would: in an exploratory way, with an eye for the singular effect. (A performer would be more likely to adopt a more pragmatic line of attack, searching for a result that would have a wide range of application and a convenient playing technique.) The small number of instruments that Davies has devised for the purpose of playing in particular pieces (e.g. the Stringboard Mk. I (1971) and Mk. II (1972) for Stockhausen's *Sternklang*) have not, he feels, been the most satisfactory, especially where specific pitches were called for: he prefers to let the impulse come from the materials themselves.

He has rarely been tempted to devise detailed compositions for his instruments. He considered writing out a score (possibly graphic) for Shozyg I and Shozyg II (both 1968), the first of his instruments to be widely circulated, but eventually confined himself to a set of general, verbal instructions to the player that indicated some of the possibilities available. What he requires of anyone who plays his instruments is that he or she should become sensitive to what the instrument is capable of doing and what is natural to it: other than that he has no manifesto on their use.

**Development** Having emerged from what he describes as the 'ivory tower' of the electronic music studio, where the composer retains complete control over the realisation of his music and the performer is redundant, Davies moved to live-electronics where he still retained a strict control over the end-product by



acting as the performer himself or working with others who had a similar outlook. After a couple of years of working in this way his output of instruments underwent further development. He began to make instruments that were not amplified — sound sculptures and sound toys — and that anyone could play and enjoy. This happened with a minimum of introspection as did his progress into areas as much concerned with the visual as with the sonic. His present work embraces a fairly balanced mixture of all these constituents.

**Electronic music** Davies's reflections on the history of electronic music are worth examining. 'If certain things had happened either ten years earlier or later, the whole course of electronic music might have been very different. The tape recorder became available just at the time when electronic music started; some of the very first composers working with electronic music started directly with the tape recorder, some of them were still manipulating gramophone records and developed from that to using the tape recorder. Possibly because of this, the tape recorder was seen as the main piece of equipment in producing electronic music. It wasn't — to take for example one studio, the Cologne studio — until the middle 1950s that filters and ring modulators began to be used. Oscillators were used straight away but no modification equipment, except for reverberation, which was a very standard thing — any radio studio would be able to do that — but more specialised equipment like modulators and filters didn't come in till really surprisingly late. In Paris, none of that; oscillators weren't used either. The early history of electronic music is almost entirely tape manipulation with oscillators. It could easily have happened that if the tape recorder had come five years later, people would have been writing oscillator parts to be played live in concerts along with conventional instruments. In other words, electronic music could have started out as a live thing rather than as something you work on in the studio.'

**Exhibitions** Davies has found that one of the most appropriate ways in which to present his instruments, especially those not suitable as performance instruments, is in exhibitions rather than as a visual artist would. Some places where his instruments have been shown: Birmingham Arts Lab (1973), Baltimore Museum of Art (1973), Rheinisches Landesmuseum, Bonn (1974), The Cockpit, London (1974), Scottish National Gallery of Modern Art, Edinburgh (1975-76), Goldsmiths' College, London (1976), Sixth International Mixed Media and Avant-garde Festival, Ghent (1976), Journées des Nouvelles Musiques pour la Jeunesse, Bourges (1976). Needless to say, visitors to his exhibitions are always encouraged to play the instruments for themselves.

**Feelie box** A sub-category of the shozyg family, where a tactile element is included. Four have been completed: Feelie Box No. 1 [Shozyg III] (1969), The Jack and Jill Box (1969-70), The Lush Box (1969-70), and The Bargain Box (1971-73). All were built in conjunction with John Furnival. These are designed for exhibitions, though ideally they should be installed at bus stops, railway stations, dentists' waiting rooms, hospitals, etc.: anywhere that people have to wait with nothing else to do. Their general principle is to have a number of objects built into a box and amplified; these are explored with hands and fingers through holes in the sides. The Jack and Jill Box is for two people, four hands: 'fur is thoughtfully provided in case the two people wish to hold hands in the middle'.

**Friends** Davies's principal collaborator has been John Furnival, who teaches at Bath Academy of Art, and who has specialised in graphics and mixed media productions (see 'feelie box', 'umbrellas', 'visuals', 'zips'). John Furnival's wife Astrid is a virtuoso knitter and contributed to the Shozip (see 'zips'). Other instrument makers with whom Davies has been associated are David Toop and Paul Burwell (who both make acoustic instruments generally following non-Western models), Max Eastley (who makes sound sculpture that is operated by wind, water or electric motors), David Sawyer (whose acoustic instruments Davies acknowledges as the best crafted) and Michel Waisvisz (the work of this Dutch instrument maker is perhaps closer to Davies's in that it makes use of electronic circuitry).

**Gastrology** Since he became a vegetarian, Davies has brought the same principles to cookery that he has to music: improvisation within a rough framework. (Occasionally he will use a recipe or play a notated composition . . . ) Odds and ends from the kitchen turn up in his instruments quite frequently. Egg, cheese and tomato slicers plucked, stroked and stimulated over a magnetic pickup are rich in tonal possibilities. The Culinary Shozyg for John Furnival (1969-70) is housed inside a breadbin: five of these instruments were used in Gentle Fire's renditions of Davies's *HD Breadbins*. Lazy Garlic [Shozyg IV] (1969) takes its name from a seasoning product which carries on the reverse side of its label the words 'use according to taste': these become the performance instructions (this is another collaboration with John Furnival).

**Humour** Humour is an important ingredient of Davies's work. It is possible, he believes, to be serious and humorous at the same time. The thing he least enjoys in other people's work is lack of humour. His instruments frequently embody visual and aural jokes and a large number of their titles are punning. The Squeak-box Mk. I (1969) is a simple toy consisting of an alphabetically-arranged accordion file filled with doll-squeakers; the title is a multi-layered pun: accordion file/accordion/squeeze-box/squeak-box/squeaker. The Squeak-box Mk. II develops the joke: a piano-accordion has its reeds removed and doll-squeakers substituted. When played in the normal way the discrepancy between what one sees going on and the horrifying aural result is ineffably surreal. Among his numerous instruments based around springs are The Wonderful Widow of Eighteen Springs (Homage to John Cage) (1973) and My Spring Collection (1975). Various visual/verbal games are played with the titles of instruments in the shozyg



family: Shoezyg (unfinished) (built in a shoe), Shozip (1975) (incorporating zips), Sho(zyg?) (1970) (resembling the Japanese sho but not strictly a shozyg at all). A project that is in hand at present is the realisation of Erik Satie's nonsense instrument the Alto Overcoat in C.

**Inspiration** Davies's ideas for instruments usually arise out of the materials themselves; creating instruments to order or following the suggestions that others offer him are not usually so successful. He does not believe in following a pre-conceived system: Sometimes I find at the end of a day I have built a new instrument which I'd never have dreamed of 24 hours earlier.' His flat is well stocked with the necessary resources so that when inspiration descends he can start work at once.

**Junk** As a corrective to the wastefulness of modern society, Davies makes a point of using among the high proportion of 'found' materials in his work a large amount of junk, thus demonstrating that much of what is ordinarily thrown away as worthless may still have a useful life.

**Kids** Davies has recently begun to work quite frequently with children, getting them to construct and play their own instruments. What he attempts to do is not to instruct the children, but to collaborate with them, to say, 'This and this are possibilities; anyone with open ears and open eyes can take up such ideas and develop them in his or her own way.' His approach is effective, he feels, because it is of equal value for both musically trained and untrained children: the musically literate are slightly subverted and opened up to the wider possibilities that exist, and the musically illiterate can find a way into music without having to learn an instrument in the traditional way. One project he recently organised (Bonn, April 1977) involved work with two groups of a dozen or so children aged 8-13 years. First he helped them build instruments from bamboo: there is a wide range of possibilities to choose between — bird-calls, chimes, fipple, notch and transverse flutes, gueros, panpipes, rattles, xylophones, raft and tube zithers. Then they made instruments from materials found at home or in the workshop. Finally both groups combined and devised a collective composition. Each child had up to 15 hours of workshops and rehearsals. Among Davies's aims was to encourage awareness that the resources of the planet don't need to be used and discarded so rapidly, to promote co-operation instead of competition, and to have fun but not, as one person assumed during a discussion following the Bonn performance, to try to convert the children to contemporary music.

**Loudspeakers** Depending upon the occasion for which they are required, Davies has a number of different sets of loudspeakers together with appropriate amplifiers. For exhibitions he has over a dozen small loudspeakers of one watt or less. Among these there are a few that employ the shozyg principle: a clock with a speaker cone replacing the face, an electric fire incorporating a speaker, a clock sprouting a telephone handset, a telephone from which a small horn emerges. For low-budget concerts he has a pair of portable ten watt speakers, while for the fully-fledged variety he has four 50 watt speakers.

**Materials** Among the identifiable components of Davies's instruments these are a few: accordion files, bamboo, bathroom scales, blockboard, book covers, box camera, breadbins, cardboard scenery pillar, card table, cello strings, chains, clocks, coffee tins, combs, crocodile clips, doll-squeakers, door catches, egg-slicers, elastic, electric fire, electrical components, expanded polystyrene tiles, fishing nylon, foam rubber, free reeds, fretsaw blades, fur, furniture castors, glass rods, guitar strings, hinges, hooks, horsehair, key rings, leather shoelace, lightbulbs, magnetic knife strip, man's jacket, marble, metal tubing, microphones, musical box, needle file, oven racks, overcoat, piano-accordion, plastic cups, cutlery and household containers, plywood, projector bulbs, radio set, rubber bands, rubber glove, screws, screwdrivers, seashells, springs (fixed and flexible), syringe, tailor's dummies, tea strainers (metal and plastic), telephones, television sets, threaded rods, 3D photographs, tomato slicers, toothbrushes, washers, wire, yoghurt cartons, zips.

**Microphones** These are of various kinds. Contact microphones are used extensively in shozygs and elsewhere. The models employed are mostly cheap Japanese ones; though giving a poor result on conventional instruments, these are for Davies's purposes preferable to hi-fi models because of their much greater sensitivity. Normal considerations of fidelity to the original sound become irrelevant where the microphone is effectively a part of the instrument: there is no 'original sound' except what emerges from the loudspeaker. Similar to contact microphones in the way they operate are stethoscope microphones which give a particularly good response on low frequencies; the two Stringboards each incorporate one of these. He has also made his own quasi-contact microphones from hearing aids in foam rubber. Magnetic pickups are widely used in instruments featuring springs, notably springboards. These are taken from old telephone handsets, headphones and ex-RAF Spitfire microphones. Gramophone cartridges have been found particularly effective with strings. He complains that it is now hard to come by the old variety which had a large hole (big enough to take, say, a pipe cleaner and a screw that held the stylus in place).

**Modification** Though he has no fundamental objection to electronic modification of the signals produced by his instruments, Davies has used it very rarely. What he has found taking place, however — often not realising what he had done until an instrument was completed — is that he has built quasi-electronic modification into an instrument, so that there is variable reverberation, an effect akin to modulation, or, most often, filtering. The four outer pickups on My Spring Collection have slightly different responses, so that the same vibrating spring will have its overtone structure modified at the output depending upon which pickups are selected. In instruments with two or more contact microphones the distance of a



vibrating object from a microphone will determine by how much the final sound will be masked again, microphone selection will determine timbral quality. Some of the springboards, particularly Springboard Mk.X, also produce quite elaborate filtering effects using a similar principle.

**Non-Western instruments** Davies's instrument-making activities have been paralleled by his interest in non-Western instruments; he now has a collection of about 30. These are mostly winds and strings, chosen because they were cheap and because he found some element of their sound, design or conception intriguing. He has, for example, a snake-charmer's double pipe (drone pipe, melody pipe) that also has a drone string; this combination of instrumental types is reflected in some of his own work that brings together two hitherto separate ideas, e.g. a set of tubular bells that may also be used as notch flutes (1974).

**Organic** When he talks about his work it is noticeable that Davies constantly uses phrases like 'the instrument tells me what to do', 'the materials show me how it should be'. He feels strongly that all that he does should be allowed to happen in what he describes as a natural, organic way.

**Personalia** Hugh Davies, b Exmouth, Devon, April 23, 1943. 1961-64, studied music at Oxford University. 1964-66, personal assistant to Stockhausen and a member of his live-electronic group. 1967-69, concert organiser for Arts Laboratory of London. 1967-present, Director of Electronic Music Studio, Goldsmiths' College, University of London. 1968, published his compilation *Répertoire International des Musiques Electroacoustiques; International Electronic Music Catalog* (MIT Press) (originally published in *Electronic Music Review* of which he was European editor). 1968-69, member of Arts Laboratory Ensemble and played as duo with Richard Orton. 1968-75, member of Gentle Fire. 1969-72, member of Music Improvisation Company. 1971-73, member of Naked Software.

Compositions include: *Contact*, piano (1963); *Vom ertrunkenen Mädchen*, soprano, flute, clarinet, piano (1964); *Quintet*, live-electronics (1967-68); *Interfaces*, tape, live-electronics (1967-68); *Kangaroo*, organ (1968); *Beautiful Seaweeds*, musicians, dancers, slides (1972-73); *Raisonnements*, piano (1973); *Wind Trio* (1973-75); *The Musical Educator*, speaker, musicians, dancers, slides (1974); *Natural Images*, tape (1976).

Compositions for own instruments include *Shozyg I/II/I+II* (1968); *Spring Song* (1970); *HD Breadbins* (1972); *Gentle Springs* (1973); *Music for Bowed Diaphragms* (1973); *My Spring Collection* (1975); *Salad* (1977).

Hugh Davies plays his own instruments on *Gentle Fire* (Electrola 1C 065-02 469); *Music Improvisation Company* (ECM 1005); *The Music Improvisation Company 1968-71* (Incus 17); *New and Rediscovered Musical Instruments* (Obscure 4); *Shozyg I+II* (OU magazine 36-37).

**Quantifications** Instruments: about 125 made or in progress; roughly half of these amplified. Approximately 250 duplicates of instruments, including 100 of the Eargong (1973), c.45 of Lady Bracknell (1971) and 25 of Shozyg I. Microphones: about 210 incorporated into instruments; 40 or so loose for use in concerts; more than 250 spare (since most are no longer available he needs to keep large numbers); grand total in excess of 550. Springs: about 400 in use in one capacity or another, with large quantities in stock.

**Remuneration** Davies manages his finances specifically so that he earns what is necessary to make a living and no more. Unlike most visual artists, his exhibitions are not held in order to sell work. When he does sell an instrument it's usually at little more than the cost of materials which is rarely more than £5.

**Serendipity** Serendipity, 'the faculty of making happy chance finds', is very much in evidence in all Davies's work, which includes entirely 'found' instruments and scores.

**Shozyg** A shozyg is any instrument (usually amplified) built inside an unusual container. The name derives from the container of Shozyg I and Shozyg II: various oddments amplified through two contact microphones are housed in the final volume of *Knowledge*, a 13-part encyclopaedia published by The New World Library. Topics from 'shoal' to 'zygote' are covered in the volume and hence the letters 'SHO-ZYG' appear on the spine. Shozyg I is probably Davies's best-known instrument and has been used in a large number of compositions with indeterminate instrumentation. It also achieves the distinction of being the only one of his instruments to be specified in a score other than Davies's own: there was a part for it in the original version of Harrison Birtwistle's *Medusa* (it was replaced by a synthesizer when the work was revised). The text that accompanies Shozyg I was published in *OU* 34-35; an original instrument was included with 15 de-luxe copies of the magazine.

Other containers for shozygs have included: radio set — The Lush Box; television set — Tellybrella (1969-71) and Moral Music with Water (1969-71); man's jacket — Sound Jacket (1973-74); specially-constructed leather-bound 'book cover' — Lazy Garlic; purpose-built boxes — Feelie Box No. 1, The Jack and Jill Box and The Bargain Box. The Alto Overcoat in C, Culinary Shozyg, Squeak-box Mk.I and Mk.II and Shozip are described elsewhere.

**Springboard** Springboards consist of long, flexible springs stretched upon a wooden board above magnetic pickups. In operation they are somewhat like an electric guitar: springs are generally plucked and may be stopped, though Davies has not fretted the instruments and rarely uses tempered tuning of intervals himself. There are a dozen variations upon the theme in existence with at least two more planned. Springboard Mk.V (1970) is the simplest, with just two springs and one pickup. Mk.I, Mk.II and Mk.IV



(all 1970) all have four springs and two pickups, each in a slightly different arrangement with consequent differences in sound and playing technique. Mk.III (1970) is more elaborate: 14 springs radiate out in a semicircle from a key ring to which they are all joined. The interconnection gives rise to an interesting playing technique: if a spring is plucked, the vibration will travel through the key ring and set up a reverberation in the other springs. The amount of reverberation may be controlled by damping with the other hand (another example of a built-in modification device). The springs in Mk.I-V were all originally the same length, but are now stretched to different extents. A wide range of tuning is available through the selective stretching of portions of a spring. This may have the result — as in Mk.III — of making the shorter of a pair of springs the lower in pitch.

Mk.VI (1973) is the lowest in the range; of its five springs the longest vibrates at about 7 Hz. Mk.VII (1973), with four springs, is the highest and the first of the range to have two-channel amplification. Mk.IX (1974) has been constructed in two versions, one with one-channel amplification, consisting of a long, continuous spring stretched into a *very* irregular hexagon over four pickups, the other using two such springs with two channels.

Developing the reverberation principle of Mk.III are Mk.VIII, Mk.X and Mk.XI (all 1974). The nine springs of Mk.VIII are distributed like the spokes of a wheel around a central key ring. This arrangement introduces a new playing feature: by pulling the key ring to one side, an alteration may be effected in the tension of all the springs and in their relative positions over the pickup. Two concentric key rings are used in Mk.X: five springs radiate out from the larger of the two, and eight more connect this to the smaller, which lies inside it and is positioned over the pickup. Complex changes in filtering and reverberation may be produced in this model by altering through damping the route that the vibration from a plucked spring must travel to reach the pickup. Mk.XI is a similar instrument, but has different radial springs and replaces the outer key ring with a series of short springs, so permitting slightly more subtle filtering.

The two Stringboards operate in a similar way to the simpler springboards, but have conventional instrument strings instead of springs. The Springstring (1972-73) stands midway between the two types: it employs two springs that are coiled for only part of their length and straight for the remainder (another of this type is incorporated into Springboard Mk.VI); this offers the advantage that the straight portion may be bowed.

**Toys** Sound toys are instruments with limited musical potential, but which are fun to play with. The Squeak-boxes belong to this category. The Eargong (1973) (published in an edition of 100 with a poster by Collection OUT) is possibly the most interesting of Davies's dozen or so toys: to an oven rack are tied two cords, which are wrapped around the index finger of either hand and the fingers placed in the ears. If the rack is now nudged gingerly with the knees, vibrations are transmitted from the rack, through the strings, through the fingers, through the skull, and are heard as booming and ringing sounds, quite inaudible to bystanders. (This is essentially a 'found' instrument: the principle is not Davies's own discovery but general knowledge.)

Lady Bracknell is an easily-made instrument: a length of nylon fishing line is extended from a small hole in the bottom of an old coffee tin (re-cycle that rubbish!) one foot is placed on the coffee tin to anchor it to the floor and one hand holds the line taut. If the line is rubbed with wetted fingers, the contraption should make rather upper-class squawking noises, which in the hands of an expert (Mr Davies is one such) can be made to talk convincingly by controlling the tension and speed of rubbing and deftly tilting the tin with the foot.

**Tuning** Davies is not very interested in tuning his instruments to a pre-determined system. Where an instrument does produce clearly-defined pitches, he prefers these to be 'found' rather than imposed. He has no strong antipathy for the tempered scale as such, but when improvising he would prefer to be freed from its limitations.

**Umbrellas** A motif that occurs a number of times in Davies's instruments is that of umbrellas. For the exhibition 'Dorothy's Umbrellas', organised by John Furnival in 1971, Davies collaborated with him on Moral Music with Water (which includes the figurines of a nymph and an old man, both holding umbrellas) and contributed Tellybrella (television-cum-umbrella). The Umbrella Picture and Whirlerbrolly, both begun in 1971, have remained unfinished.

**Visuals** When he started making instruments Davies wasn't sure of his ability to produce visually interesting work, but his collaboration with John Furnival gave him the confidence he needed. He says that if things are allowed to happen organically, then appearances will take care of themselves. The example of the springboards demonstrates that it is not necessary to superimpose decoration upon instruments for them to be good to look at. More recently he has gone so far as to produce some entirely visual pieces such as the Camera Obscure (1975), a kind of kaleidoscope.

**Winds** The fact that no new type of mouthpiece has been discovered for about three thousand years has discouraged Davies from doing very much work with wind instruments. He has made a number of bamboo flutes of which the most interesting is the Multiflute (begun 1973). This may be played as a notch flute, an end-blown transverse flute, a centre-blown transverse flute, a cornett and probably several other things too before it's finished: not surprisingly, it still has a number of snags to be ironed out. Gentle blowing on the amplified fretsaw blades of the Aeolian Harp (1972) produces some extraordinarily beautiful sounds,



though this would not, perhaps, be classified normally as a wind instrument. His chief interest in this area is the development of the possibilities of the free reed.

**Xylophilia** Davies speaks very warmly of the merits of blockboard: 'It's nice wood to work with; I know how to deal with it.' Plywood he finds less satisfactory.

**You** You too can become a Hugh Davies instrument! 'On a day when there is a stiffish breeze, stand so that the wind is blowing from one side (approximately 90 to 120 degrees; the exact position must be determined by trial and error). Open your mouth and let the wind produce quiet notes as it blows past your protruded lips, sounds that are varied by opening your mouth by differing amounts and thus changing its resonant cavity, as in playing a Jew's harp.' You'll be playing Mouth in Wind (1974).

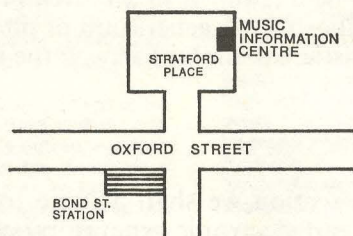
**Zips** In the fake mixer console of the Shozip (1975), twelve zips are mounted in a row to resemble a bank of faders. Each of the zips when drawn to and fro produces a different quiet, unamplified sound (the absence of amplification is part of the joke). Above the console appears the name of the instrument in multicoloured knitting wool, and above that a first-rate forgery of Erik Satie's handwriting. The Shozip was constructed as a tribute for the 50th anniversary of Satie's death; the concept, title and knitting were contributed by Astrid Furnival, the text by John Furnival and the 'mixer' by Hugh Davies.

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# Ring Modulation and Structure

WHEN ELECTRONIC MUSIC STUDIOS were first established in the early 1950s various electronic devices were inherited almost without modification from the telecommunications and recording industries. Electrical wave generators are used both to test audio equipment (amplifiers, telephones, etc.) and themselves to carry information (morse signals, and indirectly radar and sonar). Wartime developments had improved substantially the quality and quantity of such equipment, valve-based at the time. Thus sine, square, ramp and impulse generators were available. From radio-electronics, too, came the *ring modulator*. The development of radio frequency electronics during the 1930s and 40s had thrown up various circuits for the *modulation* of one wave with another. Amplitude modulation was, for example, until recently the predominant form of broadcasting method: a *carrier frequency* was changed in amplitude in a form which encoded the broadcast *signal*. The development of frequency modulation, in which the same signal could be encoded by changing the *frequency* of the carrier, led to much greater fidelity and is now common. The ring modulator is a device which demonstrates one form of frequency modulation. There is in musical terms no need to refer to 'carrier frequency' and 'signal', although older textbooks still use these words. We do nonetheless require two electrical input signals to this device which modulate each other in frequency. The arrangement of a ring of diodes gives the circuit its name.

Textbooks, articles and concert programmes tend to simplify an explanation of the way the ring modulator works. The best known examples are the 'Dalek voice' and, perhaps, the bell-like timbres produced by the ring modulated piano in Stockhausen's *Mantra*. The simplest mathematical explanation is to say that the frequencies of the two inputs *add* and *subtract*. If we had two *pure sine waves* of, say, 100 Hz and 500 Hz we would receive on output the addition, 600 Hz, and the difference, 400 Hz, *simultaneously*. (Some versions separate the two resultant products, but those commonly available, used in the works to be discussed, do not. One should not detect either of the original inputs on the output: better versions of the ring modulator have less 'breakthrough'. Both inputs need to be present to produce any output).

We shall see, however, that as soon as either input becomes more complex, the process of addition and subtraction applies to each and every component frequency of the signals. Even the slightly more complicated case of modulation of a ramp wave, in which a note of 100 Hz has overtones of 200 Hz, 300 Hz, 400 Hz, etc. present, an altogether more extensive set of products will be produced. This simplified approach, inherited from telecommunications use, ignores too the very much more complex case of natural sounds picked up through microphones. These rarely behave according to any rulebook. For example, a piano note — an apparently ordered sound in comparison with many other microphone-captured sounds — has numerous overtones, each of which begins and ends and changes in very unpredictable ways and each of which may be modulated.

Ring modulation is perhaps an overused resource in electronic music in general and live electronic music in particular. One reason for this is its use as an arbitrary colouring device unrelated to other structural aspects of the work. Two domains will be examined in an attempt to overcome this. One concerns the knowledge of the full range of possibilities of the generation of pitch modes as electronic products, the second, a fuller knowledge of the colouristic, i.e. timbral aspect: the reasons for the 'bell-like' qualities too readily used.

## 1 THE PRODUCTION OF MODES

The input frequencies, which in this section we shall assume to be harmonic sounds with a strong fundamental (true of most instruments and electronic generators), we shall call *A* and *B*. Our simplified theory tells us that the result will be two waves of frequency *A+B*, *A-B*.

Now let the *input interval* be called *I*. This may be expressed as the ratio of the input signals:

$$A/B=I, \text{ therefore } A=B.I$$

The *output interval* we may call *R*, and express it as the ratio of the output frequencies, thus:

$$R = \frac{A+B}{A-B}$$

Combining the two equations:

$$R = \frac{B.I+B}{B.I-B} = \frac{I+1}{I-1} = 1 + \frac{2}{I-1}$$

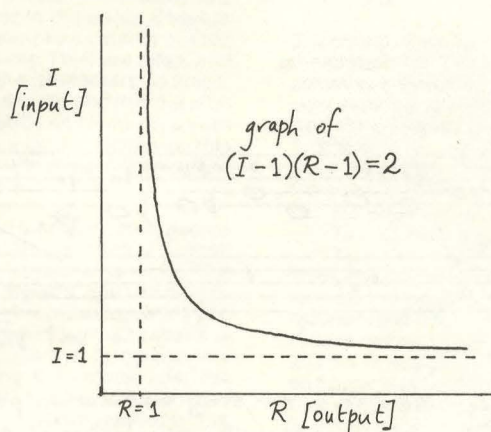


Therefore  $R-1 = \frac{2}{I-1}$

or  $(I-1) \cdot (R-1) = 2 \quad \dots(1)$

Thus if we plot  $(I-1)$  against  $(R-1)$  we obtain a hyperbola, or more simply, if we plot  $I$  against  $R$  we have a hyperbola to the  $R=1$  and  $I=1$  lines. The reason for this is that a *frequency difference* of zero is a unison of *interval ratio* unity. Although the hyperbola has a negative part, we may ignore this as we do not distinguish between positive and negative intervals. This produces Fig. 1 which may be used to compute any input and output interval in any mode or scale system.

Figure 1



The input interval need not be continuous. In the works I shall examine, both inputs are constrained to the familiar equal-tempered system of twelve divisions to the octave. This effectively breaks down the curve of Fig. 1 to a series of points: this is best expressed as a table (see Table 1). This is calculated as follows: if the input interval  $I$  and the output interval  $R$  are equal to  $x$  and  $y$  semitones respectively, and we

Table 1 (intervals reckoned in semitones)

$I$	$R$	$I$	$R$	$I$	$R$	$I$	$R$
1	61.5	19	12.15	37	4.12	55	1.45
2	49.28	20	11.33	38	3.87	56	1.37
3	42.7	21	10.68	39	3.66	57	1.28
4	37.5	22	10.12	40	3.45	58	1.21
5	33.7	23	9.45	41	3.32	59	1.14
6	30.6	24	8.84	42	3.13	60	1.09
7	28.1	25	8.42	43	2.95	61	1.025
8	25.63	26	7.88	44	2.76	62	0.96
9	23.9	27	7.4	45	2.59	63	0.92
10	21.95	28	7.01	46	2.47	64	0.86
11	20.6	29	6.64	47	2.30	65	0.81
12	19	30	6.20	48	2.16	66	0.76
13	17.74	31	5.87	49	2.04	67	0.75
14	16.6	32	5.54	50	1.93	68	0.68
15	15.6	33	5.20	51	1.83	69	0.64
16	14.7	34	4.94	52	1.72	70	0.61
17	13.7	35	4.62	53	1.63	71	0.59
18	12.76	36	4.36	54	1.53	72	0.54



use the symbol  $a$  to represent  $\sqrt[12]{2}$  (the frequency ratio of a semitone), then:

$$I=a^x \text{ and } R=a^y$$

therefore, from (1)  $(a^x-1)(a^y-1)=2$

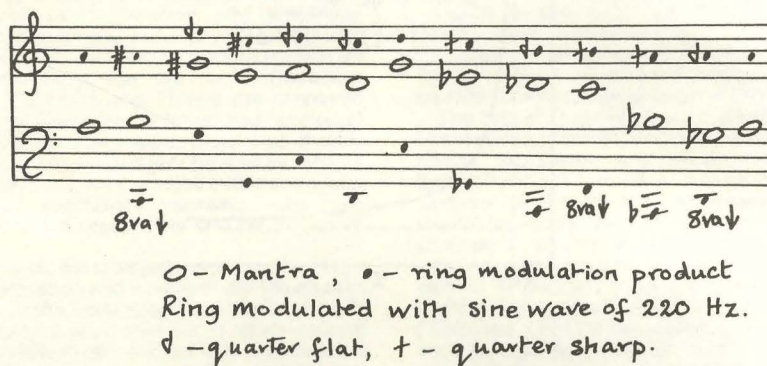
Redistributing and taking logarithms:

$$y = \frac{\log(a^x+1) - \log(a^x-1)}{\log(a)} \dots (2)$$

This leads to Table 1.

I shall examine three examples of works where a well-tempered instrument (in all three a piano) is modulated against a sine wave also constrained to the well-tempered system; the works are Stockhausen's *Mantra*, Roger Smalley's *Monody* and my own *Piano Piece III*. We can now see more clearly the various types of mode generation at work in such pieces. In *Mantra*, the 13 notes of the mantra (see Ex. 1) are used

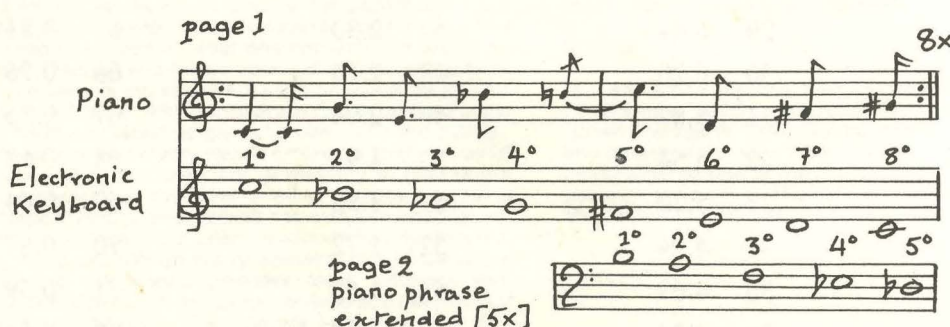
#### Example 1



O - Mantra, . - ring modulation product  
Ring modulated with sine wave of 220 Hz.  
♭ - quarter flat, ♯ - quarter sharp.

not only of course to generate, through expansion and contraction, the pitch material of the whole work,<sup>1</sup> but also *untransposed*, to generate the fundamental pitches of the sine waves used for modulation in each of the 13 sections of the work (see the introduction to the score). Admittedly, wider-ranging glissandi are used, but the confinement of the electronic wave to within an octave of frequency for most of the work has the double-edged effect of reducing interest in the area of timbral variety, but also thereby increasing the possibilities of appreciating the resulting consonance and dissonance structuring, for the composer claims: 'The intervals of the mantra itself are composed such that they move away from the central note, produce increasingly more deviations, micro-intervals . . . and then return.'<sup>2</sup> We may easily read off the resulting tones when the mantra is ring modulated with its first pitch, A=220 Hz (see Ex. 1). This does not entirely fulfil the composer's intention, and with the further confusion of the mantric expansions, at only certain points does this idea of 'cadential' function<sup>3</sup> become apparent. Indeed it probably demands the simplification of line effected in Roger Smalley's *Monody* to make such assertions about the structural functioning of ring modulation apparent. In this work three (or four if available) octaves of sine tone are used, and the various combinations of high tone/low piano, etc. are used in alternating sections. As the piano line is entirely monodic (no pedal and no chords) the modes are clearly created, though the rhythmic energy of the piece may accidentally detract from this. Although on paper Ex. 2 shows a great similarity to the example from *Mantra*, it has an entirely different function in this work. The opening statement is built from a mode: the whole-tone scale on C, plus G (and a passing B natural). The phrase is repeated eight times, being modulated with each note of the mode in turn. The resultant tones will be simple permutations and transpositions of one another: the principle of consistency on which the whole piece is based. On the second page of the work an extended version of the phrase is modulated with the other five chromatic notes

#### Example 2



page 1  
Piano  
Electronic Keyboard  
page 2  
piano phrase  
extended [5x]



not present in the first mode. This results in more complex relationships — yet again the absolute positioning of the sine tones is important: no notes may be arbitrarily shifted an octave either way, and the fifth relationship to the original mode guarantees a considerable degree of consistency.

Smalley has extended this modality in the first section of his *Zeitebenen* which adds modulated viola and soprano saxophone (plus unmodulated percussion) to the music of *Monody*. At several points these are used to reinforce the resultant tones produced by the piano modulation, i.e. they actually play the pitches produced by the ring modulation of the piano. Now as they themselves are modulated with an identical pitch, a resultant of *their* modulation is the piano original: a double reinforcement! (See Ex. 3.)

Example 3 (trills excluded)

The musical score for Example 3 consists of four staves. The top staff is labeled 'Sax (Bb)' and '(A+B)'. The second staff is labeled 'VIOLA' and '(A-B)'. The third staff is labeled 'PIANO' and '(B)'. The bottom staff is labeled 'ELECTRONIC KEYBOARD' and '(A)'. To the right of the staves, there are annotations: 'Also modulated (A+B) - A' for the Sax part, 'Also modulated (A-B) - A' for the Viola part, and 'REINFORCES PIANO ORIGINAL' with an arrow pointing to the Piano part.

My own *Piano Piece III* extends this idea of modality by a further constraint: only those intervals between piano note and sine wave that produce a well-tempered interval are used, accepting an error of up to one quarter of a semitone. From this, twelve-note modes are constructed based on the two-note chords produced (see Ex. 4). Suffice it to say that the construction of modes is only the first step toward the real

Example 4

The diagram for Example 4 shows two channels, 'OUT' and 'IN', each with a staff. The 'OUT' channel has six notes with pitch classes: C#, D, E, F, G, and A. The 'IN' channel has six notes with pitch classes: C, D, E, F, G, and A. Below the 'IN' channel, there are labels for intervals: '15va↓', '8va↓', and '8va↓'. To the right of the diagram, there is a text box that reads: 'The piano repeats middle C and the sine wave changes, or vice versa, producing 11 of the 12 chromatic pitch classes, C missing, f repeated. Other rows may be constructed in which both piano and sine wave alter.'

work of composition! Development of these ideas into more microtonal domains is very fruitful research and may be used retrospectively to explain certain harmonic results in works not consciously composed with these views in mind (e.g. sections of *Mantra*).

## II FROM COLOURING TO KLANGFARBENMELODIE

This heading indicates what is perhaps an ideal; it is, however, quite possible to move away from the oversimple use of ring modulation as a colouring effect. The simple 'A+B, A-B' resultant tone calculations become inadequate, reinforcing the tendencies of classical music theory to reduce 'pitch' (a subjective phenomenon) to 'frequency' (objectively measurable), and to reduce a spectrum of frequencies to its fundamental. I do not wish, however, to complicate the matter to the extent of presenting the full general solution to the process: ring modulation is the multiplication of two wave functions. I want to suggest a compromise both simple enough to be grasped for its musical possibilities and more complex than the oversimplification noted above. Let us consider the simplified Fourier transform of two periodic waves:

$$f(n) = \sum a_n \sin(2\pi n f t)$$

$$F(m) = \sum a_m \sin(2\pi m F t)$$

where  $t$  is time,  $a_n$  is the amplitude of the  $n$ th partial of frequency  $nf$ , and  $a_m$  is the amplitude of the  $m$ th partial of frequency  $mF$ .

The ring modulated product is  $f(n) \cdot F(m)$

$$= \frac{1}{2} a_n a_m \cos(2\pi (nf \pm mF) t) \dots (3)$$



This result bears a resemblance to the simplified result often quoted, but it includes the interactions of the other partials in the two input signals. It may be rewritten as an  $n \times m$  matrix given each of the possible combinations of overtone interaction (Fig. 2a).<sup>4</sup> This may be simplified further by letting  $F = p \cdot f$ , where  $p$  is

Figure 2a

$$\begin{pmatrix} f \pm F & 2f \pm F & 3f \pm F & \dots & nf \pm F \\ & \text{etc.} & & & \\ f \pm 2F & 2f \pm 2F & 3f \pm 2F & & \\ f \pm 3F & 2f \pm 3F & 3f \pm 3F & & \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ f \pm mF & \dots & \dots & \dots & nf \pm mF \end{pmatrix}$$

2b

$$f \times \begin{pmatrix} 1 \pm p & 2 \pm p & 3 \pm p & \dots & n \pm p \\ 1 \pm 2p & 2 \pm 2p & 3 \pm 2p & & \\ 1 \pm 3p & 2 \pm 3p & 3 \pm 3p & & \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ 1 \pm mp & \dots & \dots & \dots & n \pm mp \end{pmatrix}$$

some relationship function, which may usually be assumed to be simply numerical in the case of sustained harmonic tones, hence Fig. 2b. This overtone matrix can now be used both to explain and to predict many timbre resultants, by examining various values of  $p$ : the relationship of the two input signals.

(1) When  $p$  is an integer, i.e. any whole number, then one wave is on the other's harmonic series and results in a related harmonic web. The fundamental may be obscured by the formation of very strong formant regions, the existence of which may be predicted from the amplitude term of equation (3):  $\frac{1}{2}a_n \cdot a_m$ . If  $p$  is relatively low the harmonic relationship will be clear: this case has been covered in the first part of this article, albeit simply in terms of the fundamental. For larger values of  $p$ , the overtone perception is relatively less clear, as we are dealing with very high, closely-spaced frequencies which our ears are less able to distinguish, e.g. Figs. 3a and 3b show the matrices for  $p=3$  and  $p=10$  (intervals between

Figure 3a

$$\begin{pmatrix} 4,2 & 5,1 & 6,0 & \dots & \\ & \text{etc.} & & & \\ 7,5 & 8,4 & & & \\ 10,8 & & & & \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ \text{etc.} & \dots & \dots & \dots & \end{pmatrix}$$

3b

$$\begin{pmatrix} 11,9 & 12,8 & 13,7 & \dots & \\ & \text{etc.} & & & \\ 21,19 & 22,18 & & & \\ 31,29 & & & & \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ \text{etc.} & \dots & \dots & \dots & \end{pmatrix}$$

the two inputs of an octave and a fifth, and two octaves and a major third respectively). N.B. The sign (+ or -) may be ignored in the resulting number. The matrices indicate only which overtones will be present, a number repeated twice may not indicate any particular strength as phase considerations may complicate matters, but in general strong overtones produce strong modulation products and tend to appear in the top left area of the matrix. The  $n \times m$  matrix may then be constructed up to values of  $n$  and  $m$  that are known to be 'reasonably' strong. The above examples indicate that when  $p=3$  the lower eight overtones are present, when  $p=10$ , higher (11-20s) overtones. As indicated, the former will be nearer a fused timbre, the latter a nonharmonic chord (with timbre).

(2) When  $p$  is a non-integer, rational number, i.e. expressible as a ratio. This may not be so different from (1) as each input may be considered to be on the overtone series of a third — much lower — note, i.e. if  $F = p \cdot f$ ,  $p = 15/7$ , say.  $F = 15f/7$ , or  $F/15 = f/7$ , i.e.  $f$  is the 7th,  $F$  the 15th harmonic of the 'ghost fundamental', which may of course be present in the product (see Fig. 4). But because the new fundamental has been inevitably shifted down in the frequency range we tend to be dealing again with high overtone components. The more complex the ratio the more true this is (as above); for ratios such as  $\frac{1}{2}$  or  $\frac{3}{4}$ , i.e. simple intervals, the less true.

(3) When  $p$  is irrational, i.e. ' $\pi$ ' etc., such situations may arise in two distinct circumstances: firstly as mistunings of more harmonic cases, but more often in transitional cases between two defined situations. In both instances beats may sometimes be heard. But with poor differentiation by the ear these are often indistinguishable from other high overtone cases.



Figure 4

$$\frac{f}{7} \times \begin{pmatrix} 7 \pm 15 & 14 \pm 15 & \dots & \text{etc.} \\ 7 \pm 30 & & & \\ 7 \pm 45 & & & \\ \vdots & & & \vdots \\ \text{etc.} & & & \end{pmatrix}$$

'ghost  
fundamental'

Apart from these three cases of varying  $p$  we may see more clearly the effects of other constraints and systems.

(1) The special case of one input signal being a pure sine wave (as in section 1 above) may be seen as  $a_m = 0$ , for  $m > 1$ , i.e.  $F(m) = a \cdot \sin(2\pi ft)$ . The matrix then reduces to a one-dimensional array, row or column, as each overtone of the complex sound is altered and modulated into the two resulting sidebands.

(2) A fallacy of the simplified approach corrected: if we modulate two sounds of 'the same frequency', our first approximation suggests mere octave doubling:

$$A + A = 2A, \quad A - A = 0$$

This covers three cases:

(i) in which one input is complex, the other a sine wave, i.e. piano plays  $A = 220$  Hz, against a sine wave of 220 Hz (as in the *Mantra* example above). Here the complex part is  $n \cdot f$  where  $f = 220$ , so the product becomes  $(n+1)f$ . Now for  $n=2$ , the first overtone, we see the original fundamental is still present in the modulated product. Obviously the original approximation remains adequate for sounds the fundamental of which is substantially greater in amplitude than the first harmonic, but this would be much less true for an oboe, say!

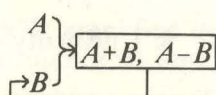
(ii) self-modulation, in which the two inputs are identical. Here too the position is far more complex than octave transposition. Each overtone effectively modulates with every other, and the full array still exists with every integer of the original (untransposed) series: the note does not appear to be transposed, merely to alter in timbre (see Fig. 5).

(iii) two complex sounds of the same fundamental frequency. Here the array will be identical to that for (ii) — Fig. 5, but the amplitude components will, of course, be entirely different. The transient phenomena, even in the steady state wave, will have more pronounced an effect in this case, generating noise components.

Figure 5

$$f \times \begin{pmatrix} 1 \pm 1 & 1 \pm 2 & 1 \pm 3 & \dots & \text{etc.} \\ 2 \pm 1 & & & & \\ 3 \pm 1 & & & & \\ \vdots & & & & \vdots \\ \text{etc.} & & & & \end{pmatrix}$$

(3) Another system that may be tried for steady state waves (the attack and decay characteristics are very noisy and uncontrollable) is octave division by modulation feedback. The result is empirically proven and the explanation here is far from a proof. A signal  $A$  is fed into one input of the ring modulator while the output from the modulator forms the other input:



therefore ' $B = A+B, A-B$ '. This is not easily soluble, but we may explain the empirical result using the matrix.



Using the relationship  $p$  above, the matrix produces Fig. 6 when  $p=1/2$  (i.e. we assume the second recycled input to be based on half the frequency with all its overtones). This yields a wave in which  $1/2.f$  is also the fundamental and all the overtones are present. In other words (amplitude terms aside) the output side can be matched with our assumption about the nature of the second input. It is interesting to note that in practice the amplitude of the signal is important (high gain is needed).

Figure 6 (all values of  $n \cdot 1/2f$  present)

$$f \times \begin{pmatrix} 1 \pm 1/2 & 2 \pm 1/2 & 3 \pm 1/2 & \dots & \text{etc.} \\ 1 \pm 1 & 2 \pm 1 & 3 \pm 1 & & \\ 1 \pm 3/2 & 2 \pm 3/2 & 3 \pm 3/2 & & \\ 1 \pm 2 & & & & \\ \dots & \dots & \dots & \dots & \dots \\ \text{etc.} & & & & \end{pmatrix}$$

\*      \*      \*

Perhaps there should be a moratorium on use of the ring modulator in electronic music (especially live-electronics). The failure of any listening audience to perceive beyond the surface sound is not entirely their own fault! Better modulators, more care with compression and equalisation in practical set-ups may improve matters, but the nagging question cannot be avoided that digital frequency shifters would do the job better,<sup>5</sup> and open up greater possibilities of *structural* use of timbre synthesis and alteration. I have examined the ring modulator in a way that I hope is applicable to other analogue devices, and that may be applied retroactively to works already in existence.

#### NOTES:

<sup>1</sup>See Jonathan Cott, *Stockhausen: Conversations with the Composer* (London: Robson Books, 1974), pp.202-224.

<sup>2</sup>Ibid., p.221.

<sup>3</sup>Ibid.

<sup>4</sup>Each of the following matrices is in effect two superimposed matrices: for addition and subtraction. In Fig. 3, to avoid proliferation, the two results are placed side by side: e.g. 4,2 indicates that 4 results from addition, 2 from subtraction.

<sup>5</sup>See John Schneider, 'New Instruments through Frequency Division', *Contact 15* (Winter 1976-77, pp. 18-21.

#### CONTACT 18

This issue will include:

a feature on La Monte Young by Dave Smith

the continuation of the 'Music and Society' series with an article by Trevor Wishart

'IRCAM — Paris's new boutique?': an on-the-spot investigation into the workings of Boulez' new brainchild by Richard Witts

'Electronic Music Studios in Britain — 8: University of Surrey' by Robin Maconie

many reviews of new scores, books, magazines and records, and reports of events both in Britain and abroad



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## The Scottish Music Archive

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THE SCOTTISH MUSIC ARCHIVE was established in July 1968 to provide a national centre for the collection, documentation and study of the music of Scottish composers; the original conception was that of Frederick Rimmer, Professor of Music at the University of Glasgow. The Archive was set up in premises made available by the University, with Professor Rimmer as Director and James McAdam as Secretary and Librarian. As this latter is a part-time post, there are now also an Assistant Librarian and an Administration Secretary, both full-time. An advisory committee, the Archive's governing body, was formed comprising representatives from the Scottish Arts Council, the Universities of Glasgow, Edinburgh, St. Andrews, Aberdeen and Stirling, BBC Scottish Television and the Royal Scottish Academy of Music and Drama, all of which provide financial support.

The Archive was officially opened on April 16, 1969 and began by concentrating on the acquisition of music written since 1920; some 40 composers were approached initially and within two years about 1,500 items had been collected and a catalogue issued. (A supplement was published in 1972; a new catalogue is planned for the autumn.) While maintaining the task of gathering new music, the Archive has also turned its attention to that of earlier periods; this has proved more difficult as much published music is out of print and manuscript sources lost. Nevertheless, through purchase and bequests, substantial holdings in music by late 19th and early 20th century composers have been acquired. To complement this material a comprehensive reference list of the sources of extant manuscripts is in preparation. Going further back still, the SMA has worked closely with Kenneth Elliott of the University of Glasgow, whose specialist knowledge of 16th and 17th century Scottish music has been invaluable in the collection and documentation of music of the Scottish court. Dr Elliott is currently working on a complete record of the music surviving from that period and has given his extensive microfilm collection to the Archive on permanent loan. In addition, the Archive has also acquired the published editions of 18th century Lowland music that are the fruits of Dr David Johnson's research. It will be apparent that the SMA has avoided the collection of what, for many people, is typically Scottish music — the traditional music of the Celtic heritage; this aspect is covered by the activities of the School of Scottish Studies in Edinburgh.

While the wider claims of Scottish music are met in these ways, the Archive still sees its chief function as the acquisition of music by living composers. Unlike the British Music Information Centre, it is not directly linked to the Composers' Guild, and composers need not belong to the Guild in order to be represented. The field within which the SMA operates is naturally far narrower than that of the BMIC, and its grant-aided status means that, unlike the London-based organisation, the expansion of the library does not depend on donations of scores and tapes by composers or publishers.

In order to qualify for inclusion in the SMA a composer must be Scottish by nationality or descent, or have lived in Scotland for more than three years. The country of residence is not important: Thea Musgrave and Iain Hamilton, for instance, live in the USA, David Gwilt in Hong Kong, and Buxton Orr, Morris Pert and Arthur Oldham have worked or are now working in England. Any composer meeting the requirements laid down by the SMA may apply for admission to it; a selection procedure operates but in practice very few applications are refused.

Every composer who is accepted is asked to lend manuscripts of his works to the library for photocopying, though many prefer to lodge their own autographs or transparencies with the Archive on permanent loan. As the majority of the composers are without regular publishers, the photocopying facilities are also used for the production of copies required for performances. This reproduction of unpublished music does not, however, make the SMA a commercial publisher; in effect it acts as an agent for the composer who retains his copyright on all unpublished material and receives a percentage of the proceeds of any purchase. With the composers' permission a number of sets of parts prepared by the SMA for specific performances have been retained for hire. Orchestral works by Martin Dalby, David Dorward, Sebastian Forbes, David Gwilt, Thomas Wilson and William Wordsworth are among the most often used, especially by the BBC Scottish Symphony Orchestra. The composer again retains the copyright and receives a large proportion of the hire fee.

An aspect of the Archive's work that has recently expanded is the collecting and filing of information on composers and their music. It is intended that the career and works of each composer should be documented under the following headings: biography, list of works, list of first performances, list of recordings, copies of programmes and press-cuttings, journal articles. This information is stored in ring-binders on open shelves.



In addition to printed and manuscript materials the Archive has a collection of over 600 sound recordings, almost 100 of them discs. BBC Scotland has given permission for recordings to be made of all relevant broadcasts on BBC Radios 3 and 4 (Scotland); the equipment for recording and listening was donated by the Pilgrim Trust. For copyright reasons no tape or disc may be borrowed or reproduced for use outside the SMA's premises except by the composer.

As the Archive was founded chiefly to promote the music of Scottish composers, its success can only be measured by the degree of interest it has inspired. There is a constant stream of telephone and postal enquiries from Great Britain and abroad for information and for photocopies of scores and parts for performance; but if the survival of the enterprise depended on the number of enquiries made by students and performers in person, it would have ceased to function by now.

In order to stimulate interest in contemporary Scottish music and in the Archive itself, a number of schemes have been launched. Since 1976 four series of lectures have been given by 16 of the most prominent composers active in Scotland; these informal talks, illustrated from recorded items in the library, have met with varying success, the audiences ranging from a handful to about 20. Every year exhibitions of music and recordings are mounted at the Scottish National Orchestra Promenade Concerts and at the Edinburgh Festival. The latter has proved one of the SMA's most worthwhile ventures; a copy of every recording, with score, is transferred to Edinburgh for the Festival period, together with listening equipment and exhibits of special interest. This year particular attention will be paid to operas commissioned by Scottish Opera: Iain Hamilton's *The Catiline Conspiracy*, Robin Orr's *Hermiston*, Thomas Wilson's *Confessions of a Justified Sinner* and this year's commission, Thea Musgrave's *Mary Queen of Scots*. Material on Hamilton's *The Royal Hunt of the Sun* and *Tamburlaine* and on Musgrave's *The Voice of Ariadne* will also be available.

Plans for the future include the expansion of the Archive premises; negotiations are in progress to provide a listening room and a room to house microfilms, the microfilm reader, manuscripts and a piano. It is also hoped that a regular newsletter containing information on new acquisitions and advance notice of performances of SMA composers' works will soon be produced.

The Scottish Music Archive (c/o University of Glasgow, 7 Lilybank Gardens, Glasgow G12 8RZ, tel. 041-334 6393) is open to the public Monday to Friday, 9.30am to 5.30pm, Monday and Wednesday evenings, 6pm to 9pm, and Saturday, 9.30am to 12.30pm. Full information may be obtained from Paul Hindmarsh (Assistant Librarian).

Would prospective enquirers to the British Music Information Centre in London, featured in our last issue, please note that the telephone number is 01-499 8567 and not as previously given. We apologise to the BMIC, and to the lady who frequently answers 01-449 8567 and is surprisingly charming about referring callers to the correct number, for the inconvenience caused.

#### SCORES, BOOKS AND MAGAZINES RECEIVED

**William Mathias**

Clarinet Concerto (Oxford University Press)

**Phyllis Tate**

Explorations Around a Troubadour Song (Oxford University Press)  
The Rainbow and the Cuckoo (Oxford University Press)

**Trevor Wishart**

Fidelio

Scylla and Charibdis

(both published by the composer and obtainable from Philip Martin Music Books)

Brilliant Corners 5 & 6 (an American arts magazine; for details see 'Foreign Magazines' in this issue)

The Canadian Music Educator, Vol. 17, No. 4 (the official journal of the Canadian Music Educators' Association; for details see 'Foreign Magazines' in this issue)

Parachute 4-7 (a Canadian contemporary arts magazine; for details see 'Foreign Magazines' in this issue)

**Marc Battier, avec la collaboration de Jacques Arveiller**  
Musique et Informatique: une bibliographie indexée (Université Paris VIII Vincennes)

**Brian Cherney**

Harry Somers (University of Toronto Press)

**Stewart Craggs, with a critical appreciation by Michael Kennedy**  
William Walton: a thematic catalogue of his musical works (Oxford University Press)

**Célestin Deliège, trans. unknown**

Boulez: Conversations with Célestin Deliège (Eulenburg Books)

**H. Wiley Hitchcock**

Ives ('Oxford Studies of Composers (14)', Oxford University Press)

**Joan Peyser**

Boulez: composer, conductor, enigma (Cassell)

**Jim Samson**

Music in Transition: a study of tonal expansion and atonality 1900-1920 (Dent)

**Arnold Whittall**

Music since the First World War (Dent)

Inclusion in this list does not necessarily presume a review in either the present or a later issue.

In addition it is hoped to continue to bring readers' attention to more foreign publications in due course, including magazines and other material not generally available in this country. Editors of foreign publications concerned at least partly with contemporary music are invited to send material and suggestions for ways in which we can act together for the mutual benefit of our readers.



## Electronic Music Studios in Britain-7

### WEST SQUARE, LONDON

TWO FACTORS have largely determined the way the West Square Studio has developed in the six years since it began in September 1971. One is to do with its place in the sphere of Adult Education, as a specialist centre at the South Bank Institute within the Inner London Education Authority. The other concerns a deliberate decision made early on to work primarily in the field of electronic music performance, to focus on live-electronics linking instrumental and electronic resources. Much of the activity at West Square from student workshop upwards reflects this orientation towards performer and performance.

From a practical point of view it means that the studio has been able to offer facilities to a relatively large number of people; much larger than would be possible if work was concentrated on individual composition and research: an important point, when it is realised that the very existence of the studio, the provision of equipment, teaching hours and technical assistance, depends on the number of people who want to use it. Not that opportunities for individual work do not exist. On the contrary, students are encouraged to use the studio at other than formal class times for their own or group project work, and over the last three years an increasing number of composers have produced new works at West Square.

Some research is carried on in designing and building devices both for the studio and for performance. This line of development began with the construction of a multiple and variable tape delay table principally for performing Stockhausen's *Solo* for melody instrument with feedback. After two years of struggling with the thorny problems of extended tape transport (up to 40 feet) and some quite disastrous early performances of *Solo*, this apparatus now functions acceptably well: in its way, it is a unique device for concert work. A mark II version in aluminium, again using Revox stereo replay heads but with improved preamps based on ICs, has been designed, and we plan to start building this in the autumn.

Early in 1974 John Dodd joined the studio as our first full-time technician, and this, perhaps more than any other single factor, has made possible the present scope of activity at West Square. Apart from what this appointment meant from a technical point of view, the day to day administration and looking after the use of the studio could be shared between myself and my assistant with the help of some part-time members of staff. The maintenance and repair of equipment which had been a growing problem up until then was now carried out in the studio and, above all, we could look forward to working on technical projects which we had had in mind for some time. The idea of developing a central patching system for the equipment in the studio was considered at this time but abandoned because of the need for mobility. If anything, our attention has turned in the opposite direction towards developing and refining the concept of a 'mobile' studio particularly for concert work.

West Square Electronic Music Studio has developed a strong link with the electronic music studio at the City Literary Institute, sharing facilities and equipment. Contact began in 1973 when we were asked to provide studio time for a group of their students until their own studio was ready. At this time I invited Philipp Wachsmann, who ran the City Lit. group, to start another class at West Square, and shortly afterwards we established an improvisation workshop which has attracted at different times many of the leading musicians in the free music field. This Improvisation Workshop has become an important feature of West Square. Under Philipp Wachsmann's direction, weekly workshop and rehearsal sessions are held for both student and professional groups working with the resources of the electronic studio. They prove invaluable, not only for the players themselves and the development of improvisation but for composers who wish to test and work out in a practical way new sound possibilities.

The building which houses the studio is old, late Victorian with the usual complement of narrow corridors and winding stairs. Considerable ingenuity has gone into adapting for working use that part of it which has been assigned as a studio. Two rooms, each capable of holding up to 15 people in reasonable comfort for lectures, somewhat fewer for practical use, have been set up for teaching and working. A largish open foyer has been made into a technical workshop, and another much larger room is used for part of the week, including all of Saturdays, for group rehearsals and recordings. During vacations when the studio is often very busy this room is available all the time.

The West Square Electronic Music Ensemble was set up as a performing group and comprises musicians and technicians with a common interest in working together to develop the skills and experience essential for the performance of the growing number of works for live-electronics. Working with leading



performers, emphasis is on the realisation of works which explore and extend new instrumental and vocal resources, acoustically and electronically. The Ensemble seeks to integrate and exploit the experience and practice both of the studio and of instrumental performance and to harness this total resource towards a new and particular music theatre: an acoustic theatre in which sound and sound projection are its structural essence.

The West Square Electronic Music Association was formed a little later and registered as a Charity in August 1975. It aims to encourage new composition and in offering the means for realisation and performance actively seeks to bring composer, performer and engineer together to work in an integrated yet flexible medium. The Association has had valuable assistance from the Greater London Arts Association and the Arts Council in commissioning a number of new works and promoting concerts at St. John's Smith Square and the Round House.

West Square Electronic Music Studio  
West Square Annexe  
South Bank Institute  
St. George's Road  
London SE1

#### *Current Personnel*

Director:	Barry Anderson (full-time Head of Music Department)
Lecturers:	Philipp Wachsmann (part-time tutor: Electronic and Improvisation Workshops) Christopher Francis (part-time tutor: Technical Workshop)
Technician:	Lawrence Dipple (full-time)
Design Group:	David Baxter/Ian Chisholm/Lawrence Dipple/Christopher Francis

#### *A selection of works composed in the studio*

Address enquiries for performance or educational use to the address above. We shall refer to the composer where necessary.

Barry Anderson	<i>Piano Pieces 1, 2 and 3</i> (1973; with tape mix and sine tone ring modulation) first performance: St. John's Smith Square, London, June 11, 1975 <i>Topograph</i> (1973; three percussion groups, filtering and ring modulation) <i>The Sun-Tamer</i> (1974; Polynesian creation myths for storyteller, modulated piano, percussion and tape) first performance: Morley College Family Concert, April 1974 * <i>Mask</i> (1976; solo flute, electronic modulation, percussion, speaker and five tape channels) first performance: St. John's Smith Square, London, May 9, 1976 * <i>En face de . . . II</i> (1977; soprano and double bass with tape delay, electronic modulation and four-track tape) first performance: Round House, London, June 20, 1977
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and with Marcio Mattos	three realisations of Stockhausen's <i>Solo</i> for melody instrument with feedback: No. 1 for flute (Christopher Taylor) St. John's Smith Square, London, June 11, 1975 No. 2 for double bass (Barry Guy) St. John's Smith Square, London, May 9, 1976 No. 3 for voice (Jane Manning) Round House, London, June 20, 1977
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Barry Guy	* <i>Eos X</i> (1977; amplified double bass, tape delay and four-track tape) first performance: Round House, London, June 20, 1977
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Marcio Mattos	<i>Mirrors</i> (1975; string grouping with tape delay and live electronics) first performance: Battersea Arts Centre, London, July 5, 1975
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Stephen Montague

**\*\*Strummin** (1974-75; piano and tape)

first performance: Vienna, Austria, October 6, 1975

**\*\*Inundations I** (1975; three pianos, twelve pianists, electronics and tape)

first performance: Intermuse Festival, University of South Florida, USA, January 7, 1976

**\*\*Inundations II 'Willow'** (1976; soprano, piano and tape)

first performance: Como Festival, Italy, September 25, 1976

**\*\*Crisyede** (1976; voice, ocarina, slides and tape)

first performance: Festival of Metz, France, November 26, 1976

**\*\*Fluxus** (1976; live electronics, 16mm film and tape)

first performance: ICA, London, December 12, 1976

**\*Passim** (1977; piano, percussion, electronics and tape)

first performance: Round House, London, June 20, 1977

Haydn Reeder

**Coalescence** (1975; piano, synthesizer and tape)

first performance: Canberra School of Music, Australia, August 1975

Paul Rutherford

**Echo I** (1975; double bass and tape)

first performance: Purcell Room, London, October 30, 1975

\*commissioned by the West Square Electronic Music Association with funds provided by the Arts Council of Great Britain

\*\*published by Edition Modern (Munich)

*List of main studio equipment as at June 1977*

ITAM 10-in 4-out mixer

Three Sony MX12 portable mixers

Quad amplifiers

Tannoy HPD85 loudspeakers

Two VCS3 synthesizers

DK2 keyboard

EMS touch keyboard and sequencer

EMS pitch to voltage converter

WSQ sine/square-wave generator bank (ten modules; voltage control/phase lock)

EMS Random voltage generator

EMS eight-octave filter bank

WSQ two-channel multi filter bank

Twelve-channel tape delay feedback machine (developed initially for Stockhausen's *Solo*)

Scopex 4D 10A oscilloscope

Two Revox G36 stereo tape recorders (high speed)

Six Revox A77 stereo tape recorders (three high speed; three low; three with variable speed control and two with Dolby B noise reduction)

One Teac A3340 four-track tape recorder

Various dynamic, capacitor and contact microphones: AKGD224E/D202ES and Calrec 1000 series, plus comprehensive range of devices and accessories for studio and live performance use, headphones and test equipment

Acoustic instruments include: piano, marimba, vibraphone, crotales, cymbals, pedal timpani

This is the seventh of a series of articles designed to acquaint composers, technicians and other studio users as well as our general readers with current activities in electronic music studios. At present the series will be confined to those in Britain. Studio directors are invited to submit *brief* articles, following the layout displayed above, for inclusion in future issues. It must be stressed that only brief articles will be considered for publication and that, since we normally only have space enough for one studio per issue, a waiting list may develop. The next studio to be featured will be that at the University of Surrey (Contact 18).



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# Reviews and Reports

TREVOR WISHART: SCYLLA AND CHARIBDIS (£1.50)  
FIDELIO (£1.50)

Both these scores are published by the composer and may be obtained from Philip Martin Music Books, 22 Huntington Road, York, YO3 7RL.

RICHARD WITTS

I found the following letter inside a copy of the antiscore of Trevor Wishart's *Journey into Space* in Bury Public Library. It may have been left there either deliberately or accidentally, which says a lot about the sorts of people who read his scores in Bury.

CENTRAL INTELLIGENCE AGENCY  
Penetrations Division  
STRICTLY CONFIDENTIAL

Subject: WISHART, Trevor  
Address: 83 Heslington Road, YORK, England  
Phone tap code: 0904 30143  
Age: 30  
Class Status: C  
Possessions: Wife  
Occupation: Freelance composer

4.7.77

Dear Milton,

You asked for a situations brief on the above subject. To be frank, Milton, he's a headache. For thirty years Culture Operations has ensured that all potential dissidents in the music sector have been steered by the Stabilization Program. But subject is envired in a new situation, outlined below. The Program must be adjusted to contain him plus the factions he represents. You may not be familiar with its content and purpose, so let me cue you.

The Stabilization Program was straightforward:

1. Access agents operate as journalists in the music press sector. They orchestrate the treatment of composers and their output by:

(a) endorsing subjects who refer to

- (i) The Free Spirit of Man or the Free Development of Mankind;
- (ii) preference for free, democratic societies, e.g. USA, UK;
- (iii) totalitarianism as an evil;
- (iv) personal, subjective, independent activities as an ideal;

(b) turning pro-Soviet propaganda back on itself by accentuating the possible deviationary aspects in Communist music (the model example of the Program's success being Shostakovitch);

(c) stressing the 'non-political' nature of music activity, so that the developed pro-capitalist function of music structures are camouflaged yet serve the status quo (this allows too the possibility of a Plausible Denial Strategy, e.g. if this report defected and was openly published, nobody would believe its content).

2. Composers are researchers of future profitable commodities. They are prone to manufacture structures that lie outside, or criticize, the accepted tenets of a Free World philosophy. This is an unfortunate but predictable result of a research mode that requires the Agency's support as an ongoing operation. Any harmful activities may be checked by:

(a) encouraging competition: composers and musicians collaborate only *against* one another;

(b) emphasizing the independence and arbitrariness of their activities;

(c) ensuring that the successful composer is a product of, or attains and remains in, social class B or C. University appointments and composer-in-residence posts with their attendant security have been the effective ploys, and guaranteed an output that reflected this social status;

(d) reinforcing the dissident composer's alienation from the most disruptive elements of the free society to minimize support, e.g. with negative media coverage, emphasizing the exclusivity and abnormality aspects of their work;

(e) direct buying-off through commissions, etc.; composers have insecure funds and are unlikely to refuse gifts.

3. The philosophy/aesthetic of Subversion. Devised by Counter-Intelligence Division. Negative propaganda was generated in music that, bit by bit, 'erodes' accepted attitudes. Composers were encouraged to adopt a degree of clandestinity. A positive social status was endorsed by a revival of the term 'radical'. The Subversion ruse attracted composers with a bent for the dramatic. Historical or mythological subjects were promoted for this

treatment, as though stressing the universal nature of subversion (whether it be Protestant Reform, Cuban slavery, Faust, Christ or Punch and Judy, the more removed from everyday life, the greater the subversive status!). So far this has been the most successful ploy, along with the anti-collective line that was developed.

Well, Milton, the Stabilization Program is burning out. The underlying weakness of Subversion tactics is revealed. A new generation immune to the old anti-Soviet propaganda must be coped with; Red China is their paradigm. New elements affect the Program:

1. post-war education absorbed certain elements of the manual class; composers and musicians are no longer necessarily unified in class orientation;

2. inflation and reduced funding has affected the Program, allowing musicians economic affinities with the bottom-range disruptive elements;

3. composers are seeking a wider market with a more accessible grammar. In itself, this isn't dangerous, but it may abrogate their commodity research function in the service of managerial-class ideology.

Intelligence Directorate's drive for large-scale patriotic affirmation (US 1976, UK 1977) helped to align composers with their true historic function, but piecemeal ideas are no substitute for an overhauled Program.

The following account of subject's recent out-turn may be productive of insights into the new directions that require channeling.

*Scylla and Charibdis* (1976)

This is a 'music-theater' piece somewhat in the English tradition: hysterical vocals, eccentric humor, grotesque images, a structure divided into static blocks, art-object percussion, costumed performers, etc. But there is a difference: it makes a direct statement.

Synopsis: Two countries/multi-national corporations compete against one another for aural supremacy. They each have a champion at either side of the stage, Hell's Angel bikers who produce the full range of vocal sounds through their separate microphones. They throw objects at each other (luxury consumer goods such as TV sets, ornaments, furniture). Behind each protagonist is a metal screen which, when struck by an opponent's missile, emits portions of texts from either the Communist Manifesto or the US Bill of Rights. The two bikers each have a manager (agent-provocateur) who moves around the audience to gain support by asking the public to shout political obscenities into a microphone. The obscenities are selected from two lists, the first of adjectives, e.g. Communist, Conservative, jack-booted, hippie; the second of nouns, e.g. eunuch, running-dog, Democrat, Stalinist. Only the loudest shouter is heard through the sound system. This section is very noisy, and, given the limited sonority, static.

A tranquil section ensues as the protagonists make up. Bird calls, taped 'mood music for young lovers' and manipulated cheering replace the violent vocals and percussion. But the actors slowly reveal the hypocrisy beneath the detente and the violent section returns, stopped suddenly when the entire sound and light systems fail. The audience is ejected. Only when they have all left is the system switched on again to show them that the whole event was a set-up governed throughout by the two powers in league to control and occupy the minds of the public. The overall shape is thus: A DUEL, very loud, vocal sounds/percussion (7 main aural components), B DETENTE, quiet, bird calls/muzak/cheers (3 aural components), A DENOUMENT, as in the Duel, CUT OFF. The piece equates an elaborate sound system with a world power structure, through which all contributational elements are controlled unaccountable operations. It is marked out from the usual run of music-theater works by its clarity of design (hardly subversive), the unity of aural and visual gesture, and the potential variety of action. The system acts as a flexible frame rather than as a rigid process that has to be strictly adhered to.

There are also simple, subtle touches: a battery-operated cassette recorder is inconspicuously located; if you discover it and press your ear close to its tiny speaker, you hear a description of the problems of the Third World. In this manner, subject makes a clear theatrical statement about imperialism. There are, however, weaknesses:

1. It's usually difficult to encourage audiences to participate. At its premiere in Australia (La Trobe University, Melbourne, Sept. 1976) it was apparently impossible to find many willing shouters. At Ghent, Belgium (Nor.media Band, 24.2.77) the audience was strongly divided by those willing and unwilling rather than between one country or another. Audiences, too, are rarely duped by staged power failures.



2. The piece is difficult to stage. The score requires at least 4 microphones, 2 contact mikes, 2 or 3 tape machines, 3 ring modulators (2 with sine-wave oscillators), 2 triggered envelope shapers, stereo amplifier and speakers, and a comparator (a specially constructed device that passes only the louder of two signals). Most of this may be covered by two VCS3 synthesizers, which restricts production to a university or college music department. The Ghent report reveals that it can be effected via manual operations of amplifier and mixer volume levels, rendering *Scylla and Charibdis* open to wider exposure.

Many props are required (subject stipulates two enormous piles of *luxury* goods) that create procurement and storage problems. In fact, most of subject's theater work uses much electronic or mechanical gear, props, costumes and general hardware, discouraging performances outside of his direct participation. 3. The work may be interpreted in another light. The two bikers represent the unkempt, degenerate elements of our free society. They are inarticulate, appear grotesque and mindlessly destroy good-quality produce. The slogans may be comprehended in several ways (even made pointless, e.g. 'You Trotskyite Trotskyite'), losing any functional reference whatsoever in the general uproar — that's the beauty of anarchism. The agent-provocateurs are too shady or caricatured to represent a real power. They are false, and clearly collaborators of the socially disruptive characters on stage. Thus, when the power system disintegrates at the end the moral is: revolution is destruction. The work is defused by its connection with one British tradition: the music-hall and the circus. However, this work is subject's most powerful and all-embracing statement to date.

#### *Fidelio* (1977)

Outline from the score: 'A solitary flautist (or clarinetist) begins to play. After some time a stranger enters carrying a [small] suitcase, from which the same [type of] music emanates. The stranger leaves the suitcase on stage and departs, and the flautist responds by playing a different, more complex music, treating the music from the suitcase as an accompaniment. This process is repeated another four times, until there are five [progressively larger] suitcases on the stage, ALL playing flute music (clarinet music). By this stage the flautist (clarinetist), having adopted more and more elaborate styles of playing, each style being copied by the succeeding suitcase, finds he/she has exhausted all the possibilities. Furthermore he/she is virtually obscured from view by the pile of suitcases. After vainly trying to play something else new, whilst leaping into the air in order to be seen, he/she rushes out to the front of the stage and cries out. The suitcases change from instrumental sounds to aggressive shouts. He/she falls to the ground. The stranger now enters with a large trunk, and piles the body of the player into it and wheels it off stage, returning after a few moments with the trunk, and places the trunk on the top of the pile of suitcases, at which point they all begin to play the music as before. The trunk, however, contains the cry of the flautist which repeats at regular intervals.'

Well Milton, you see the problem? There's no obscurity, no élitist tradecraft trickery, and it has a kind of humour. I've listed the negative and positive points below. First negative:

1. It's clearly expressed, with an overall simple shape. There are seven stages, progressively shorter in time and more complex in aural content. The start of each new stage (2-6) is indicated by the exit of the stranger.

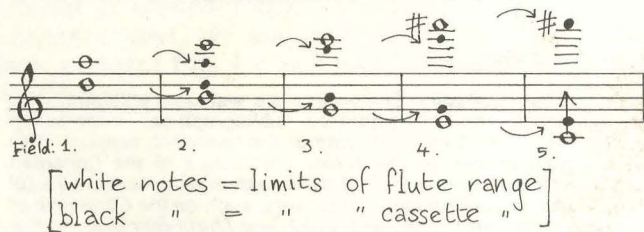
2. It's aurally more seductive than *Scylla and Charibdis*. There is an organic process marked by the widening of pitch areas. The opening plays on a quotation from a Beethoven aria:



transformed in the following manner:



The pitch range is gradually widened by the flutist, always wider than the range heard on the tapes (white notes indicate limits of flute range, black those of cassette):



3. It contains an appealing but not taxing virtuoso element and easy theatricals for the flutist. Wide performance possible if subject achieves adequate score distribution (he publishes privately at his own expense and sells from his address).

And the positive points:

1. The title is obscure. The basic pitch material derives from an arioso by Don Fernando (the visiting minister who allowed Florestan's freedom) in the Act II finale of *Fidelio*. The full text is:

No cruel tyrant is your King,  
To him his subjects are his brothers,  
To all he loves his help to bring.

Sure, the text isn't relayed, and it may be said that the piece doesn't rely on the audience's awareness of the entrant quote. (So why *Fidelio*? She isn't even a part of it.) This British tradition of obscure references and in-games is of immense assistance to the Program.

2. This is a negative *Fidelio*. It's light turning to the black, sinister and pessimistic. When the dissidents start creating positive music, that's when we really need to worry.

3. Equipment problems. The performer needs to construct five differently-sized wooden suitcases, and obtain a large but light trunk large enough to lie in. Six battery-operated cassette machines are required. They must have the same volume levels, all loud enough to penetrate the acoustics of the hall from inside the cases. The cassettes are tricky to coordinate; a small timing error sabotages the entire piece.

4. Cassettes generally give inferior reproduction. So the player would hardly feel either emancipated or intimidated by the second-rate recorded sounds. The work then becomes an exercise in timbral contrast.

5. There is an interpretation problem for the flutist. The cassette tapes have to be recorded prior to rehearsals. The player must establish a clear relationship between tape and live music during the performance, while attempting to play in an improvisatory manner. This balance problem is compounded as the piece progresses.

6. Our agent at the York University premiere (1.6.77) noted a weak theatrical point, not eliminated in the score. When the stranger carries the flutist off-stage in a trunk, nothing happens for a while and no point is made. Why off-stage only to return? (Technically the purpose is to permit the flutist's release, and this could be heard from the auditorium). Actually, I'd be tempted to have a power saw or chopping sounds when the trunk is off-stage, as though the stranger were extracting the eyes (the trunk's emblem).

So, Milton, here's an art-music that alludes critically to monopoly capitalism without the old-style ambiguity of image. This music is potentially damaging through its structural clarity, thought-out scenario, sense of humor and a stronger (more practical) alliance between theater and music performance.

Until Directorate devise a new strategy, there are three lines of penetration that are available:

1. Neutralization. Emphasis upon the anarchic and abnormal aspects of subject's work should minimize its audience potential and economically cripple the performers. At present the Agency's media agents are generating adverse publicity for subject's latest job as a Community Composer in Lancashire, England.

2. Coercion. Subject is in a weak situation as he's a truly freelance composer. UK avant-classical music is at a low grade presently and he's one of the brightest young minds on the market. He might be purchased: UK contacts (ACGB/SPNM) may insulate him eventually.

3. Termination.

Sincerely,  
Dean



CONTEMPORARY CANADIAN COMPOSERS, edited by Keith MacMillan and John Beckwith  
Oxford University Press (Canadian Branch), 1975 (£11.75)  
Obtainable in UK from OUP

HARRY SOMERS, by Brian Cherney  
University of Toronto Press, 'Canadian Composers' series No. 1,  
1975 (\$15.00)

ALAN GILLMOR

*Contemporary Canadian Composers* is a welcome addition to the rather sparse and fragmentary bibliographical information available on Canadian composers of the twentieth century.<sup>1</sup> The book, edited by two of the senior chroniclers of the Canadian musical scene, replaces several earlier attempts to compile useful information about Canada's composers, such as the *Catalogue of Canadian Composers* (1947 and 1952) and *Thirty-four Biographies of Canadian Composers* (1964), both published by the Canadian Broadcasting Corporation and neither readily available nor widely distributed even during its own lifespan.

MacMillan and Beckwith have included biographical sketches of 144 composers who, in the words of the editors, 'represent... the most active and prominent composers from all parts of the country in the period covered' (p.vi). The chronological organisation admits those composers who have produced all or most of their works since 1920. Until the more comprehensive and ambitious *Encyclopedia of Music in Canada* appears (hopefully before the end of the decade) *Contemporary Canadian Composers* will remain an indispensable source of information on the major Canadian composers, most of whom are still living. Unlike the proposed *Encyclopedia*, the MacMillan/Beckwith volume has excluded composers of popular and commercial music, band and church music, and, with a few exceptions, serious jazz figures as well as very young composers who have not yet attracted sufficient public attention. Although these specialist interests are not accommodated, the framework is a reasonable one for a book of modest proportions.

Any reference source, of course, must be judged primarily on the extent and accuracy of its information and the ease with which that information can be extracted. In the latter respect, the book passes with flying colours. Of necessity, a great number of abbreviations are used for bibliographical references, performing and concert groups, publishers and the like, but these are clearly explained at the outset. Each entry consists of a fairly detailed account of a composer's career — more or less depending on the relative importance of each subject — with a brief discussion of his or her music and musical style, followed by a comprehensive list of musical works and primary and secondary literary sources. Included in the list of works, which is further broken down by instrumental category in the manner of *Grove's Dictionary*, is a discography and information about first performances.

The editors have eschewed lexicographical 'objectivity' in favour of providing a brief aesthetic evaluation of each composer's work, with occasional discomfiting results. A case in point is William Aude's article on the Saskatchewan composer Murray Adaskin in which we are informed that his chamber opera, *Grant, Warden of the Plains* (1967), although containing 'many fine passages' (p.1), nevertheless is marred by 'a sentimental chorus culminating in the tonic chord with the third on top' (p.2).

In a work of this scope, it is inevitable that errors of fact and omission will occur, and although the evidence points to a generally sound editorial exercise, there are indications that some of the contributors failed to handle data with sufficient care. A brief examination of the entry for R. Murray Schafer (pp.199-205) will demonstrate the point. The long article on Schafer, by fellow composer Udo Kasemets, is nicely proportioned and most informative. However, the bibliographical appendices contain a sufficient number of minor errors to be the cause of some concern. Schafer's works *East* (1973) and *Four Songs on Texts of Tagore* (1958) are incorrectly dated 1972 and 1962 respectively, and Kasemets fails to mention that *Divan I Shams I Tabriz* (1970) and *Music for Morning of the World* (1970) are part of a triptych called *Lustro*, the third part of which, *Beyond the Great Gate of Light* (1972), is omitted for the list of works altogether. Also missing from the otherwise complete (to mid-1973) list of works — barring seven pieces that Schafer withdrew in August 1968 — is the early piano solo *Polytonality* (1952), the composer's earliest extant work.

In the list of literary works which follows, the page numbers of the articles are not consistently present, several dates and volume numbers are misquoted, and at least one non-existent article by Schafer is listed: 'Money and Music', printed in the bibliography without page numbers, is merely part of the front-cover by-line for 'What is this Article About?' which appears in *The Canadian Forum* for December 1964 and which is given its own separate listing.

Although these are admittedly minor errors, in themselves of small significance, they are sufficient in quantity to lead future researchers temporarily astray, and if other entries contain a similar percentage of factual error (which has not been established) the value of the biographical dictionary is accordingly diminished.

Dr. Cherney's monograph on Harry Somers, one of Canada's most distinguished composers, provides clear evidence that scholarly musical criticism in Canada has arrived at a new level of maturity and professionalism. The Somers book, the first of a projected series of critical studies of major Canadian composers, is

the first truly important document of its kind to have emerged from the morass of journalistic prattle which has passed for critical musical commentary in Canada, and as such it augurs well for the future.

If Cherney's book succeeds as a welcome analytical study of a significant body of music which is still too little known, even in Canada, it fails signally to treat its subject in the round and we are frustrated in our desire to discover the man behind the music. Very near the end of his study Cherney writes, almost apologetically: 'to establish a relationship between the personality of a composer and the qualities of his music is troublesome in some cases, and probably futile in most' (p.151). But surely one of the biographer's fundamental tasks is to illuminate this very relationship. The reader seeks to know more about the influences on Somers and the links between his music and that of his contemporaries. In a technological age it is, perhaps, not surprising that a humanistic approach is overshadowed by a classical passion for underlying form, and in musical biography particularly it is difficult to fuse the analytical with the humanistic in a way that satisfies the demands both of Apollo and Dionysius. Cherney gives us what might be called 'the composer's view', and perhaps it is the composer in the author<sup>2</sup> which restrains him from any significant attempt to penetrate the mask and introduce us to the man. Either that or we must conclude that Canadian composers live inordinately dull and prosaic lives. Moreover, a first biography carries with it certain responsibilities. We value Schindler not for his analytical insights — such as they are — but for the revelation, compounded of innumerable details, of the character and spirituality of a great composer. Later generations will have the scores; Cherney has had access to the man, and it is a source of some disappointment that he has failed to capitalise on this privilege.

The bulk of Cherney's book consists of fairly intensive analyses of Somers' major works, with little to relieve the sombre procession of charts, diagrams, and music examples. The many musical illustrations are welcome, indeed indispensable, considering that Somers' works are still not generally known. Nevertheless, one would have to have access to the full scores to quibble with Cherney's analytical observations in any meaningful way. In keeping with the general tenor of the book, the writing style is correct, if perhaps a bit stiff and perfunctory, even occasionally cryptic. For example, when the author announces that 'the song ["Stillness" (1942)] demonstrates an ability to create and sustain contrasting moods through harmonic and pianistic resources' (p.8) one wonders what kind of atmosphere might have been created through contrapuntal and non-pianistic resources. Or this curiously flat statement: 'The opening of the first movement of [of the Piano Sonata No. 2 (1946)] is the most highly organized two-part writing one encounters until *North Country*' (p.25; italics mine). Here the adjectives convey little information and leave the reader pondering the organisational hierarchy of two-part counterpoint. It is surprising, too, given the author's objective approach to his subject and what might be diagnosed as an anti-romantic bias, that he should allow such a statement as: '... a Kafka-like atmosphere ... achieved by limiting material [in the opera *Louis Riel* (1967), Act II, Scene 2] to low harp, tam-tam, and tom-tom sounds ...' (p.138).

For the most part Cherney has observed the niceties of scholarly writing: his documentation is thorough and his analyses perceptive and meaningful. The music examples are not always conveniently placed, and occasionally the author quotes a source without revealing its origin. Most disappointing in this respect is the decision to print only a selected bibliography, sure to be a source of some concern and annoyance to future Somers scholars who will be eager for every scrap of evidence, however insignificant it may appear to be during the composer's lifetime.

I have, of course, been picking nits. Cherney's book will stand as the first serious attempt to deal with a significant Canadian composer in depth. In its thoroughness, its analytical detail, and its perceptiveness, it sets a high standard for its projected companion volumes. In referring to one of his helpful analytical charts (*Passacaglia and Fugue* for orchestra (1954), pp.66-67) Cherney recognises that 'such a scheme cannot, of course, convey the sense of sheer physical excitement generated by the fugue' (p.65). It is this very sense of exhilaration one feels in the presence of great art which, in the last analysis, the author has failed to communicate to the reader. To be sure, he has made us more aware of Somers' music, but he has not made us more curious about it to any appreciable extent. Nevertheless, we must conclude that with Cherney's study of Somers, the critical literature on Canadian music has acquired a new dimension.

#### NOTES:

<sup>1</sup>But see Alan Gillmor's 'Contemporary Music in Canada', *Contact* 11 (Summer 1975), pp.3-13; 12 (Autumn 1975), pp.15-24 (Ed.)

<sup>2</sup>Brian Cherney (b.1942) teaches theory and analysis, composition, and twentieth-century music history at McGill University and can be considered one of the outstanding Canadian composers of the younger generation. His String Quartet No. 2 was awarded the McMaster University Prize for Chamber Music in 1970.



SCHOENBERG, by Charles Rosen  
Marion Boyars, 1976 (hdbk. £4.50)  
Fontana Books, 'Modern Masters' series, 1976 (ppbk. £0.75)

SCHOENBERG, by Malcolm MacDonald  
Dent, 'Master Musicians' series, 1976 (£4.25)

#### JIM SAMSON

Schoenberg is the most 'discussable' of composers. The musical experience is complex and multi-levelled (we may, so-to-speak, 'move around' within the work) and critical responses have accordingly been divergent. This divergence is apparent even in the technical studies. Take two recent full-length books on the pre-serial compositions: Allen Forte's *The Structure of Atonal Music*<sup>1</sup> and Jan Maegaard's *Studien zur Entwicklung des dodekaphonen Satzes bei Arnold Schönberg*.<sup>2</sup> Both books make use of a sophisticated analytical apparatus to elaborate theories which must be regarded as diametrically opposed: in no realistic sense can we regard them as complementary approaches. They have only one thing in common. They are aimed at a highly specialised market (the average university music student will probably give up after a few pages) and will be of no help at all to the untutored music-lover who genuinely wants to get to grips with music generally recognised as 'difficult'.

It is precisely to this reader that the new studies by Rosen and MacDonald are directed. Yet the approaches taken by these authors are again very different. MacDonald has a word to say about everything Schoenberg wrote, from juvenilia to mature masterpieces. The result is to whet the appetite for some of those works which have somehow eluded us in the past and also to draw attention to the sheer scope and variety of Schoenberg's output: a surprisingly narrow cross-section of his music gets trotted out again and again. A less happy, though inevitable, corollary is the scanty treatment of some major works. A rather different approach would have been necessary in order to do full justice to the Piano Concerto, for instance, or to the String Trio.

It should be said at this stage that MacDonald has the sort of way with words which makes this book a 'good read'. He is intelligent and penetrating on Schoenberg the man and fascinating on the general cultural background, with fresh anecdotal material making the composer come alive where earlier biographies have fallen short. Moreover, with a composer unjustly lumbered with Schoenberg's reputation for cerebration, one can understand the enthusiastic, proselytising tone and, indeed, regard it as a healthy alternative to that of the more technically-based studies.

At the same time it is difficult to sympathise totally with MacDonald's almost aggressively anti-analysis standpoint. Where a work is successful and coherent, I for one want to know why (not that analysis will provide all the answers). The relationship between structure and expressive effect is certainly complex, but it does permit logical insights. Such technical comment as there is in this book is occasionally suspect (has Op. 10 arrived at C major by bar 107) or inadequate (much of the point of Schoenberg's deliberate re-interpretation of classical variation form in Op. 31 seems to have been missed). Nonetheless, the chapter on 'Style', a broad survey of the development of the composer's musical language, is excellent in the main. My slight reservations usually concern comments on 'atonality', a word which, incidentally, MacDonald refuses to acknowledge, where most of us are content to accept it as a term — in search of definition no doubt — which is with us 'for better or for worse'. His discussion of residual tonal qualities in 'atonality' fails to differentiate between tonality as a controlling force in structure (implying a repertory of scalar and/or chordal types) and, more simply, as a stabilising or referential centre. Equally, it doesn't really take into account the very different *harmonic* qualities which distinguish the early serial works from those written between 1909 and 1913. This is not hair-splitting. The distinctions are real and important, and in order to clarify them a more close-to-the-text kind of analysis would have been necessary.

Such an approach is to be found in Rosen's book. There is no attempt here at a comprehensive survey. The method, rather, is to focus closely on selected corners of Schoenberg's output, corners which have the widest possible significance for his music as a whole, and indeed beyond that. You will find no more lucid and cogent account of the meaning of classical tonality and of its subsequent expansion than pp. 36-41 of Rosen. Here, as elsewhere, he reveals a rare capacity for enclosing precise technical comment, invariably peppered with fresh insights, within an eminently readable narrative. I might cite as just one example of these fresh insights the account he gives of those 'large blocks of prefabricated material' which we find in a classical music and of the changing attitudes of 19th century composers towards them. All this by way of introduction to the works written between 1909 and 1913, for Rosen the really challenging works in Schoenberg's output. It would hardly compliment the author to summarise the precise and subtle way in which he demonstrates how 'the expressive values of the stylistic elements were asked to play a structural role' in this music. Enough to say that in a short study addressed to a wide readership (Schoenberg is the first composer to enter the Fontana 'Modern Masters' series), he unveils more of the true significance of these pre-serial works, including *Erwartung*, than many an earnest page of *Perspectives of New Music* etc.

This discussion of 'Atonality' forms one of the two major chapters in Rosen's book. The second, which he calls 'Serialism and Neo-classicism' is no less penetrating. Here he pinpoints — much more precisely and with much greater insight than Boulez — the real reasons for the difficulties experienced by so many listeners (including, I must confess, myself) with this music. The two chapters depend to an extent on premises outlined in an introductory chapter on 'Expressionism', in itself a fascinating discourse on the nature of the 'language' of music, a discourse whose significance reaches far beyond Schoenberg. It is rare and encouraging to find a writer on music who can present complex and 'loaded' ideas in a form which is at once compressed and readable; who can support (as I feel he must) his hypotheses by means of precise technical information while avoiding the pseudo-scientific jargon rightly condemned by MacDonald.

#### NOTES:

<sup>1</sup>New Haven: Yale University Press, 1973.

<sup>2</sup>Copenhagen: Wilhelm Hansen, 1972.

DEBUSSY: IMPRESSIONISM AND SYMBOLISM, by Stefan Jarocinski, trans. Rollo Myers  
Eulenburg Books, 1976 (hdbk. £3.50, ppbk. £2.50)

CLAUDE DEBUSSY AND THE POETS, by Arthur B. Wenk  
University of California Press, 1976 (£14.65)

#### JOHN SHEPHERD

The notion that the art of any particular epoch both reflects and contributes to the social/cultural background of its creation is one that even today is unlikely to pass completely unchallenged. Yet for those wishing to substantiate such a claim, the artistic fervour that was to be found in Paris during the late 1880s and the 1890s is something of a godsend. For it would be difficult to deny that there was at that time a certain 'something in the air' which not only pervaded all the arts, but which also found expression in more general intellectual and political activity. It is in the light of this fervour that scholars have acknowledged a similarity of aesthetic outlook as evidenced in the (earlier) music of Debussy and the 'Impressionist' painters and writers who were his contemporaries.

But beyond assigning to Debussy the somewhat nebulous label of an 'Impressionist' and noting certain musical devices (pentatonicism, the whole-tone scale, parallel chord motion and so on) which, through a 'suspension of functional tonality', seem to be responsible for the creation of 'amorphous atmospheric effects', the exact nature of the aesthetic relationship between the composer and his literary and artistic contemporaries has itself remained cloaked in something of a haze. The books by Jarocinski and Wenk attempt, in their different ways, to dispel this. Jarocinski comes to grips with the central question by examining the adequacy of the 'Impressionist' label as applied to Debussy and then considering the precise points of contact between the composer's aesthetics and those of his literary colleagues. Wenk, on the other hand, seeks, through more rigorous analysis, to illustrate structural parallels between the music of Debussy's songs and the Symbolist poems that they set.

Jarocinski's point of departure is the definition of a symbol as something that 'conveys an imprecise meaning which can be interpreted in various ways' (p. 23). Further, 'the transposition of its meaning has a dynamic character' (p. 24). Whereas Symbolist poetry, with its emphasis on the juxtaposition of seemingly unrelated and vague images and on the sonorous qualities of individual words, largely conforms to this definition of a symbol, Impressionist painting does not. Although there is a desire to move away from what the artist knows to what he 'actually sees', the Impressionist vision, based as it is on the play of light at a precise moment on a precise subject, still seeks to achieve a certain 'scientific objectivity'. There is little of the ambiguity obtaining in the *dialectic* perceptive situation, with its indissoluble interplay between the external world and the individual's psychological predisposition. It is because the simultaneous multiplicity of such moods and images does not lend itself to verbal-rational linear exposition that the Symbolist poets preferred to suggest, rather than to strictly delineate their subject matter.

Jarocinski goes on to argue that music is par excellence the symbolic mode of ambiguity and suggestion and that Debussy used these inherent characteristics to achieve an art-form which is closely related to the aesthetics of the Symbolist poets (with whom, indeed, he had a great deal more contact than with Impressionist painters). Debussy is not primarily concerned with portraying nature through sound, but with evolving in the listener's consciousness the correspondences that exist between different sensations (visual, olfactory, auditory and so on) and between those sensations and the dynamic mental states of the individual. Debussy's world is not one of concrete externals, but internal, fluid and intangible.

This line of thought is backed up not only by well chosen



selections from Debussy's writings on aesthetics (which are then compared with similar writings from the poets — most notably Baudelaire), but also by a highly perceptive discussion of the composer's musical language. Jarocinski is at pains to show that any traditionally based analysis of Debussy's music, even if only 'against the background of functional tonality' (that is, based on the assumption that Debussy merely suspends functional tonality in a 'colouristic manner'), constitutes a fundamental misrepresentation that inevitably leads to claims for a diffuse, sensuous and superficial 'Impressionism'. Such an approach stresses the 'negative' or 'destructive' elements of Debussy's art at the expense of positive aspects which display their own organisational principles. People who subscribe to the label of 'Impressionism', therefore, 'do not notice that all these [musical] procedures point to another and fundamentally different method of organising sound in both its formal and material aspects; to explain this music in terms of the methods and categories of a style hitherto accepted could only lead to dangerous generalisations. Debussy's detestation of 'developments', the ascetic sobriety of his melodic invention ... were looked upon as a form of sensual naturalism ... whereas in reality his musical thought was opposed to any form of illustration, anecdote or programme music, as well as to any kind of subservience to Nature' (p. 154). His whole object was 'to avoid that kind of clarity which Wagner aimed at in his *Gesamtkunstwerk*, in order not to conceal under too transparent musical symbols the obscure and ambiguous significance of men, things and situations' (p. 131).

Jarocinski does not, however, fall into the trap of supplanting one label (Impressionism) with another (Symbolism). While acknowledging that the influence of the Symbolist poets was probably crucial, the author is happy to accept that within the artistic milieu of the time Debussy's contribution is just as individual and just as important as that of his 'non-musical' contemporaries: 'we believe that we must respect [Debussy's] refusal to accept any "label": indeed, in our opinion it would be impossible to find one that could be applied to him. He had been in contact with all sorts of artistic movements: Naturalism, Impressionism, Pre-Raphaelitism, Divisionism, Symbolism, Synthesism, Fauvism, Expressionism. With the exception of Cubism, whose birth and development he had witnessed without enthusiasm, he had learned something from all these movements, and had sometimes been profoundly influenced by them (in the case of Symbolism, for example); but he never sacrificed to any of them his own artistic personality ...' (p. 161).

This book is prodigious not only in putting forward an incisive view of Debussy's relationship with the artistic ambience of the time, but also in acting as an excellent introduction to Debussy, his music and his world. Indeed, one of the few criticisms that could be made of the book is that it at times displays a certain tension between the role of polemic and that of a textbook. On occasion, interesting and suggestive lines of thought become submerged in recitations of fact. Consequently, certain questions arise which perhaps require greater elaboration. One is left wondering, for example, exactly how Jarocinski sees the relationship between the inherent qualities of different symbolic modes (music, writing, painting and so on) and the socially or culturally grounded 'meanings' they articulate. One of Jarocinski's points, it will be remembered, is that music is highly suited to expressing the Symbolist aesthetic (it is no accident in this respect that Symbolist poets and poems alike make frequent reference to music). Yet that same symbolic mode was equally successful in articulating, through functional tonality, the teleological and rational/discursive outlook of educated post-Renaissance man. Conversely, the Symbolist poets managed to turn the inherently 'concrete' nature of referential 'rational' language against itself. It may well be that Debussy brought music (and, indeed, the artistic symbol) closer to its own intrinsic nature, but such implications need to be handled with care.

Criticisms such as these are, however, slight when put against the contribution made by this book. For it is an essential part of that contribution that the book, through an examination of Debussy's relationship with both the immediate and wider (pre-Wagnerian) cultural context, instigates discussions of topics which have for too long been ignored.

Wenk's book explores, at a rather more concrete level than Jarocinski's, Dukas' famous remark that 'la plus forte influence qu'ait subie Debussy est celle des littérateurs. Non pas celle des musiciens.' Through an examination of the relationship between words and music in a selected number of Debussy's songs (settings of Banville, Baudelaire, Verlaine, Mallarmé, Louÿs and Debussy himself) Wenk attempts to gain insights into questions such as 'What was the effect of ... literary associations on Debussy's music? Did it go any deeper than the title page? Did the poets influence Debussy's ideas on music — what it is, what it can do? How did these ideas affect his music?' (p. 6).

It should straight away be said that the book is rich and substantial in its analysis of poetic and musical devices, in its illustrations of the way in which different aspects of Debussy's music parallel poetic construction and in its view of the song as a springboard for the development of Debussy's style. It further demonstrates considerable knowledge of the aesthetic writings and correspondence of both Debussy and the Symbolist poets: the discussion of Baudelaire's influence on Debussy's aesthetic thought is in particular quite excellent. Having said that, however, one must confess to a sense of disappointment on finishing the

book. For although Wenk acknowledges at the outset that Debussy 'was not content with a music which would merely complement the mood of a text, (p. 6), analysis is carried out very much at this level. The connections made between music and poetry are either between a musical device (for example, a certain use of the chromatic scale) and a specific emotion (for example, 'intimacy') or between overall musical form and overall poetic form.

This is not to suggest that the analysis is without sophistication. In his analysis of *L'Ombre des Arbres* (Verlaine), for example, Wenk notes, by reference to Zimmerman's *Magies de Verlaine*, that the intricate system of mirror images and oppositions evidenced in the poem form a closed circle. Both oppositions and circle are directly revealed through Debussy's music. The interval of a tritone which forms a basic structural element of the song 'is the one interval which reflects into itself when inverted, an ideal device to represent the pure essence of reflection, Verlaine's central image' (p. 109). Further, 'a continuation by perfect fifths in either direction from a given note eventually returns to that note by way of the so-called cycle of fifths ... In the chain of fifths at the end of the first half [of the song], Debussy moves outwards along the circle from C# to D. At the end of the piece he returns to C# from the other side, very nearly completing the circle that Zimmerman finds in Verlaine's poem of mirrors. The distance across the circle of fifths at any point is, of course, a tritone.' (p. 110).

Whether or not one finds this kind of analysis convincing is an open question. The point, however, is that Wenk seems unable to consider that musical devices may be significant of themselves, i.e. within a given cultural context. Whereas Debussy was concerned to evoke the fluid interplay of shifting moods and images from *within* his music, Wenk's analysis does not seem to delve beyond external and surface representation. That his method of approach is not terribly sympathetic to Debussy's aesthetic is evidenced in a concluding statement that 'such a strong influence' as that of the 'littérateurs' 'inevitably led to a certain dependence' (p. 272) on the part of Debussy's musical style. Surely the essential strength of Debussy's finest settings is that the music speaks from within itself to the kernel of poetic imagination?

Music which functions in this way nevertheless inevitably involves at the surface level a certain parallelism of construction with the poetic text, and for this reason alone the book remains valuable. Moreover, many people would maintain that the kind of analysis I am suggesting here is impossible simply because it attempts to go beyond the concrete and external. To suggest that the above criticism is a central weakness of the book might therefore be to chide the author for not attempting something he did not intend in the first place. Yet one cannot help feeling that a mode of analysis which on the one hand depends on explicit and reified descriptions of shifting poetic images, and on the other is largely drawn from categories of functional tonal analysis, is not entirely appropriate to the task. But whatever one decides about the methodological basis of this book, there is little doubt that it provides an extremely informative guide to those who wish to examine Debussy's songs for themselves.

ALL KINDS OF MUSIC, three volumes, teacher's notes and three tapes, by John Paynter  
Oxford University Press, 1976 (total price £22.00)

HILARY BRACEFIELD

This attractive series of books and mono tapes (stereo reel to reel tapes and cassettes are also available) is not quite what one would expect from one of the authors of *Sound and Silence*, which has proved such an admirable flashpoint in the explosion in 'creative' music in schools. It seems a slightly defensive attempt to show that Paynter's ideas don't just consist of what I heard one teacher calling 'mucking around banging things and saying it's music' (actually quite unfair!) but that he believes in many different forms of making music and wants to show that the results achieved working through *Sound and Silence* can come by other means as well.

The aims as stated in the Introduction in the teacher's book (p. 1) are laudable enough. The course is to provide 'experience of music in many different styles' and in particular is 'concerned with the uses to which music is put, and what it is that music has to say to us about living, about other people (and ourselves), relating its forms and structures to the circumstances which produce them. What matters is not only that music should be good but that it should be good for its purpose. Paynter goes on to say that *All Kinds of Music* is trying 'to provide a basis for the development of sensitivity and discrimination in relation to sounds and musical patterns', and quite rightly points out that it is only a basis, a springboard: the teacher using the series should find that it will lead to all sorts of interesting and profitable projects.

What, then, are the kinds of music that Paynter offers? Book 1 is entitled *Voices* and includes sections on folk music, carols, songs



about heroes, industrial songs and the blues. There is some information on playing the guitar, and projects include writing accompaniments and actual songs before the book suddenly launches into new ways of making vocal music, with Cathy Berberian's *Stripsody* and some other modern pieces to perform. In Book 2, *Moods and Messages*, Paynter is concerned with music's effects on our feelings. He introduces advertising tunes, music which was written to evoke particular responses in us, national songs and well known tunes, and leads on to projects on writing folk music and playing graphic scores. A long section on playing the tin whistle seems in the nature of an interlude. Book 3, *Sound Machines*, is concerned with instruments and appears the least well thought out of the three books. It intends to encourage group playing of instruments and the arrangement of well known and original tunes for the group and includes ludicrously small sections on learning to play the trumpet, cornet, and clarinet and written instructions without photographs or tape examples on making a whistle pipe. Rhythmic patterns are taught, and in the modern section, at the end as usual (will the pupils get suspicious?) found instruments, prepared pianos and tape music are all discussed.

The books move from the 'known' (music and sounds that the pupils hear around them in the home and street but may not consider worth listening to) through their own experience of singing, playing and imitating this music to the 'unknown' (the hearing and playing of modern experimental music). What is largely left out (except for two examples on Tape 3 and a number of the mood examples, notably by Britten and Copland, on Tape 2) is what we still call 'classical' music of all periods. Of course it can be argued that it is well covered enough in other schemes and is already in the teacher's repertoire, but a look back at the course's aims may lead to the conclusion that classical music has neither usefulness nor relevance for our children today, and that is a pity. Paynter actually says in the introduction (p.8) that he wants children to think and explore like composers. He sets them to compose fairly simply in the style of advertisers, folk singers and film music writers, but nowhere does he suggest, either by notes or by musical examples for listening, the higher peaks of the great composers. Although teachers can find musical examples themselves that may enhance the ideas of Paynter's course, I really would like to have discovered how Paynter himself would weave such music into his course.

What does appear in the course has no doubt been thoroughly tested by the author in many schools, but problems can always arise when an author and his colleagues inevitably get so close to their material that they don't foresee problems that a teacher coming fresh to the books will find. Teachers are warned that they certainly will not be able to pop on the first tape and distribute the books. They will have to do their homework first by listening through the whole tape with the notes and plan their own strategies very carefully. If this is done I think a lot of good work will come out of the course's use. Paynter makes a number of suggestions for group work. Inexperienced teachers and those who haven't done much creative work will have to step warily here, and few of us will be able to afford several sets of each tape as suggested!

I have some grumbles. Most of the taped examples are very short, particularly on the *Voices* tape. An example of a folk singer recorded by Percy Grainger is cut off before one has adjusted to the sound, Steeleye Span sing one verse and chorus of an eight-verse song before disappearing in the middle of a note, and *all* of the risqué *Sick Man Blues* should surely be there for full effect. Paynter wants children to sing or play along with the tapes, but hardly an example is allowed to reach its end. Certainly the sources of most are given, but the teacher can't go out and buy all of them, and I couldn't help wishing that some of the instrumental and theoretical instructions had been left out instead. The teacher's book is rather unhelpful about many of the more esoteric items. The Yorkists perhaps forget that people well known to them might not be to a teacher in Walsall or Yeovil, who hasn't time to do extra research on such a wide variety of topics and has a right to expect that the handbook will do it for him. In Book 1 more help could have been given on blues and jazz and the actual singers. A good bibliography on the industrial songs shines out against the blankness on other topics.

While it is good to have music and scores from Luciano Berio, Henry Cowell, Simon Emmerson, Paul Patterson, Robert Sherlaw Johnson and Trevor Wishart, for example, many teachers would welcome, for their own interest, some information about these composers and their works. Even the features on Britten and Copland could have done with some filling out in the teacher's book. There are some slips: 'Maria' was absent from my Tape 3, Example 5; in the same tape in Examples 6-8 the notes played are down a tone from those printed, though it is not explained why; in Example 31 the piece is played in the key of G and shown in the key of C, not very helpful for children making an arrangement and then playing it with the tape.

All in all I can see that with good teacher preparation and follow-up, this course will provide thought-provoking material for most age groups which will make pupils use their ears more closely, help them to create their own music and introduce them to some of the composers working today. But it doesn't cover *all* kinds of music and must not be considered as the complete course for a year's work. I would dip into the books as my own inclinations led me, and I think that is what their author intended.

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CASELL



MUSIC AND THE BRAIN, edited by Macdonald Critchley and R.A. Henson  
Heinemann, 1977 (£11.50)

ROBIN HIGGINS

Neurology is that branch of medicine concerned with the nervous system. Since the nervous system merges at one end with the psyche, at the other with muscles and sense organs, and is connected through the autonomic nervous system with respiratory, cardiovascular and hormonal mechanisms, neurology provides us with a picture of the whole human machine seen from the vantage point of its central organising networks. This book is about how our machines receive and express musical sounds.

Parts of the machine particularly involved in music making — ear, hands and voice — are isolated and examined in some detail. In all three instances, the descriptions move beyond the traditional review of structure and function. The chapter on the ear and hearing ends with some valuable points about the localisation of sounds in space and the subjective aspects in our perception of loudness. The chapter on the hand develops the idea of hierarchical organisation in the nervous system along a scale from 'most automatic' to 'least automatic' responses. Analogies are drawn between such a scale and the 'subroutines' and over-riding 'programmes' of computer engineers. Hand movements, like any other movements, may draw on any point on this scale. We may have automatic subroutine-like movements dependent on constant feedback, or we may have ballistic movements, launched from an internal programme and not subject to external modification during their course. Such analyses open up the connections between studies on technical dexterity and creative expression in movement (or movement as symbolised in music). The chapter on voice production includes a section on the phenomenal voice, the extension of range which goes with the singer's training, and which bears similarly on this boundary of technique and creative expression.

The more central parts of the machine receive attention in chapters on how we memorise pitch and sequences of pitches, and how we build up abstractions such as a 'semitone', or a duple rhythm, or a proportional lay-out. Such studies have links with those on cerebral dominance, i.e. on the idea that certain areas of the brain may be particularly involved with musical faculties just as certain (by no means necessarily the same) areas are involved with speech. Pitch-memory, levels of symbolic abstraction and cerebral dominance all have links with another issue, synaesthesia, the simultaneous experience of more than one sensory modality. The suggestion that synaesthesia is a faculty we possess when young and often lose is examined critically since it clearly carries important implications for musical education and indeed our imaginative development in general.

An equally pregnant observation occurs in a chapter on music, emotion and autonomic functions, namely that under tranquilisers the autonomic responses that usually accompany an emotion when we listen to music cease to do so. Under tranquilisers a wedge is driven between body and mind in a direction quite contrary to the embodying function of music. Though initially this observation might seem of interest primarily to music therapists, on reflection it begins to carry the same expanding significance as the events described in Oliver Sacks' *Awakenings*.

Other chapters deal with different stages in the machine's conception, growth and decay. On the genetics of musicality, any interpretation in biochemical terms is seen to have little to offer. Similarly, anatomical dissection post-mortem of the brains of musicians yields little clue as to why their owners differed from the non-musical. Beside these negative findings at the extremes of a life-span, many more positive results emerge from the second part of the book, dealing with events which occur when the machine breaks down; the amusias (or the specific impairment of a musical capacity), deafness, musicogenic epilepsy, the occupational disorders of musicians.

Combined with the observations in the first part of the book, these results emphasise three features which are perhaps neurology's most significant contribution to musical understanding. The first feature is the enormous individual variation in perception and execution of sounds by our machines. The second is the provision of some means of classifying these variations in strictly machine-like terms. The third feature arises from the first two and concerns the change over time of these individual (or grouped) variations. One striking example of this may be seen in the shift of cerebral dominance from right to left as a musical faculty becomes more sophisticated.

The book displays two limitations. Perhaps because it was written by neurologists and not musicians the definition of the human machine was often more informed than that of musical sounds, which for the most part tended to be conceived in the context of Western European music only, including its notation, basic structures, modes of learning and dissemination, etc. The nervous system is notoriously adaptable. While it may well be necessary, for a start, to limit our study of its adaptability to one particular cultural setting, the dangers of generalising from such a study, as well as the dangers of being thrown off course while immersed in it, will be obvious.

In the light of a musical view which expands beyond our Western European heritage, many of the tests for musical ability for example seem at best parochial and at worst misguided. To focus on the

relation between such abilities and our nervous system may throw light on our capacity to adapt, but not necessarily to adapt musically. To select children for further musical training on the basis of these tests may be to conserve an ultimately limited or even un-musical milieu rather than an expansive, musical one.

The second limitation is related to the first. In neurology, the human machine tends to be studied not merely as a piece of mechanism, but as such a piece, isolated from its fellows. Again this may be an essential phase in our exploration. But music, usually, is made and experienced in a social context. We write or play it for some sort of social group, however small. The nuances of musical sounds are intimately tied to this social setting. It is open to question what precisely we are measuring when we lop off the social roots of the experience in the cause of scientific experiment.

## FOREIGN MAGAZINES

KEITH POTTER

'Foreign Magazines' rather than 'Foreign Music Magazines' as the title this time, since two of the four publications detailed here are as much, or more, about other contemporary arts than music. This can only be good, for it will, I hope, foster a little more communication between the practitioners of, as well as the audiences for, different art forms. And it also capitalises on a lamentable, but important (inevitable?) reality: namely that contemporary artists of the plastic variety, for instance ('plastic' in at least two senses . . .), are more likely to find a common ground with contemporary composers and improvisers, for instance, than are most classically trained performers. And — allowing, of course, for the trendiness of the art scene — this goes for their respective audiences too.

In addition to the four publications below, we have exchanges in varying states of repair with a number of others. Notable among these is that with the Belgian/Dutch *Interface*, *Documenta Musicae Novae* and their various predecessors: at the time of writing I am much looking forward to receiving the issue of *Interface* containing the report of the International Notation Conference held in Ghent in 1974 and *Documenta Musicae Novae V* which I believe is devoted to Henri Pousseur and Michel Butor. Though this section is devoted to non-British periodicals, I should say here that we have an exchange with the quarterly English journal *Tempo*, which is currently being kind enough to detail our features in each issue in its new News Section, edited by Howard Skempton. *Tempo* can be obtained from Boosey and Hawkes Ltd., 295 Regent Street, London, W1R 8JH. I am keen to hear from lots more editors. Watch this space, as they say.

## BRILLIANT CORNERS

Editor: Art Lange

Quarterly

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Describing itself as 'a magazine of the arts', *Brilliant Corners* 5 & 6 (Spring and Summer 1977 respectively) arrived just in time to be included in this issue, and incidentally via a mention we had in the Canadian magazine *Parachute* (see below): the grapevine works! There's more poetry in these two issues than anything else (Art Lange, the editor, is himself a poet, though none of his own poetry is published in these two numbers), but each contains two features by or about or with a musician. No. 5 has a piece of prose by Alan Axelrod called 'A Song by Charles Ives' and a long interview with improvising soprano saxophone player Steve Lacy, which is actually a translation from the French of the interview by Raymond Gervais and Yves Bouliane published in *Parachute* 4 (Autumn 1976). It's useful to have this available in English and a selected discography is included, but a) the 35 footnotes of the original French version, which not only allow one to follow up more of the records but also other written material as well, are omitted, and b) there's a more up-to-date, and I think better interview with Lacy by Paul Burwell, David Toop, Herman Hauge and Steve Beresford in *Musics* 12 (May 1977), which incidentally draws on the earlier one anyway. No. 6 prints the text of a sort of play-with-music by the American composer Ned Rorem, and Art Lange himself contributes an article called 'A Synergistic Approach to "Jazz"' which discusses some aspects of free jazz, largely that of familiar British musicians such as Derek Bailey, Paul Lytton and Evan Parker; a (very) selected discography is included here too.

Past issues have included Frank O'Hara on the music of Morton Feldman and an interview with Anthony Braxton. I should like very much to see these, though — in common, I imagine, with most would-be readers — I can't afford the \$50 'lifetime subscription' in order to do so.



## THE CANADIAN MUSIC EDUCATOR

Editor: Duane A. Bates

Interim Editor: Barbara L. Keane

Quarterly

Subscription: \$10 per year for which you receive four Newsletters as well as the magazine. This actually constitutes the basic rate per year for membership of the CMEA and also entitles you to free access to their Resource Centre, Information and Loan Services (the Centre is in St. Catharines, Ontario). Add \$0.50 (surface mail) or \$2 (air mail) if you live outside Canada; reduced rates are available for students and retired people.

Obtainable from Professor Sandra Davies, Faculty of Education, University of British Columbia, Vancouver, B.C., Canada V6T 1W5

CMEA in the above information is the Canadian Music Educators' Association, and this is their official journal. We have been sent Vol. 17, No. 4 (1976), in the introduction of which Barbara Keane, the Interim Editor, writes: 'The articles selected for publication... are chosen first, of course, for their inherent usefulness for the music educator in Canada. In organizing each issue, the editors also attempt to choose articles which reflect a geographical and philosophical diversity among the authors.' Most of the issue we have been sent is in English, but the opening article, 'Le Role Des Arts Dans Le Développement De La Personnalité Humaine — Part 1' by M. Maurice Marthenot, is in French. There is an interview with the American composer and teacher Edmund J. Siennicki entitled 'The Composer in the Classroom', 'Towards the Development of Truly Contemporary Listening' by Walter H. Kemp, an advance notice concerning the 13th World Congress of the International Society for Music Education (ISME) which will be held at the University of Western Ontario, London, Ontario, from August 12-20, 1978, 'Rj Staples, Pioneer Music Educator' by Don Cowan, 'Extended Learning Experience in the Arts' by Howard Alexander and 'The Organ World — The View from Now' by G. E. Chubb. All these are quite short; the whole issue has 40 small pages.

## PARACHUTE

Directors of publication: France Morin and Chantal Pontbriand

Music Editor: Raymond Gervais

Quarterly (not three times a year as we previously stated)

Subscription: \$9 per year, \$16 for two years (Canada)

\$15 per year, \$25 for two years (USA and Europe, air mail)

Individual copies: \$2.50 each

Obtainable from C.P. 730 — Succursale N, Montreal, Quebec, Canada H2X 3N4

I first drew attention to this Canadian contemporary art magazine in *Contact 15*, when we had received issue 3 (April, May, June 1976). We have now received issues 4-7 (Autumn 1976 to Summer 1977) which go a long way towards fulfilling the promise of the earlier issue, not least of all in the features and, in particular, interviews devoted to music. No. 4 (Autumn 1976) includes an interview in English with the Italian composer and performer Mario Bertoncini as well as the original French version of the interview with Steve Lacy which was translated into English and published in *Brilliant Corners 5* mentioned above. No. 5 (Winter 1976) has an interview in English with Charlemagne Palestine, a 'Poem to the Music of Derek Bailey' called 'Off the Bridled Path' by Paul Haines and, among other contributions that will be of interest to musicians as well as to other artists, an article by Rene Payant entitled 'Alison Knowles et Dick Higgins: L'importance de l'événement'; this last is in French. No. 6 (Spring 1977) has Philip Glass interviewing Richard Landry (yes: it is that way round...), who does a lot of graphic work as well as music, in an issue devoted largely to the work of artists working outside the big centres: no other features on musicians, but a contribution from, of all people, Tennessee Williams on Lynda Benglis and an article on Robert Rauschenberg by Calvin Tomkins: *Parachute* sure can rattle up the big guns... No. 5 had promised an article in No. 6 on Glass's and Bob Wilson's opera 'Einstein on the Beach' and had contained a short contribution by Glass in French, but neither No. 6 nor No. 7 have come up with it. (Incidentally, *Musics 12* has an extensive review of this work by David Cunningham; the 'book' of the opera is published by E.O.S. Enterprises, New York and is available in Britain from Nigel Greenwilde Inc. Books.)

No. 7 (Summer 1977) commences with a report on what must have been a major artistic event, '03 23 03, Rencontres d'art internationales à Montreal', which took place from March 3-23 this year and included Ken Friedman, Raymond Gervais, Jon Gibson, Alison Knowles, Joan La Barbara, Steve Lacy, Charlemagne Palestine, Steve Reich, Michael Snow and Karlheinz Stockhausen among its many participants. There's also 'George Crumb and the Art Ensemble of Chicago: moving parallel in separate worlds' by Art Lange (more exchange between Chicago and Montreal) and some photographs (*Parachute* is always lavishly illustrated throughout) of *Topographie (solo)* by the French Canadian cellist Yves Bouliane. All the issues we have received contain sections such as 'Information', 'Livres et Revues' and 'Musique au Présent' which document recent work of all kinds and list, for those interested in music, such things as recent records, books and magazines from all over the world, most of them of an 'experimental' nature. One of the

best things about *Parachute* is that you really feel when reading it that it's got its finger on the experimental artistic pulse not only in Canada, which would in itself be quite something, but in particular in the USA, of course, and also much of Europe, including Britain.

## POLISH MUSIC

Editor in Chief: Tadeusz Marek

Quarterly

Subscription: \$4 per year (no other currency rates given)

Individual copies: \$1 each

Obtainable from Export and Import Enterprise 'Ruch', Warszawa, ul. Wronia 23, Poland

*Polish Music* is published by the Authors Agency in Poland and has been running since 1966. In addition to issues 36-39, which appeared in 1975, we have been sent a 'List of Contents' covering the years 1966-74: in this, issue are numbered 1-4 for each year (e.g. 1/66) and not in a continuous sequence. The journal is published in English and German in parallel text; the reader does not require any knowledge of Polish and the journal is presumably intended exclusively as a promotional organ for Polish music in English and German-speaking countries and for others interested in contemporary music, who are more likely to read these languages than Polish.

Each issue is characterised by a fairly large number of short articles rather than in-depth studies. Some of these are reviews: No. 36 (1/75) has no less than four on different but often overlapping aspects of the 1974 Warsaw Autumn Festival. There are some pithy but not very analytical features on or by particular composers, sometimes about a particular work or idea (e.g. Boguslaw Schaffer's typically provocative 'The Multi-Instrumental Orchestra' or an article by Tadeusz Marek on 'A New Polish Opera: "Tamango" by Tadeusz Natanson' (both in 1/75), or the editor's feature in what seems to be an incidental series called 'Composer's Workshop' on Marta Ptaszynska's *Siderals* (2/75) or Zbigniew Wisniewski's own article on his *Kammermusik No. 4* in the same series (4/75)). Another incidental series is entitled 'Polish Music in My Repertory', with contributions from the violinist Wanda Wilkomirska (2/75) and the Czech conductor Vaclav Smetacek (3/75). No. 37 (2/75) is devoted largely to the work of women composers in celebration of International Women's Year, with articles on Maria Szymanowska (1789-1831) and Grazyna Bacewicz (1913-69) as well as the other features mentioned above. No. 38 (3/75) includes an article on 'Polish Music in Britain' by the English composer John Casken, who studied for some time in Poland, and some of No. 39 (4/75) is devoted to studies of the place of music on Polish radio, television and records. Each issue contains 'New Polish Compositions', a detailed list of new works with precise information of forces required and dates. The latter are presumably of composition; many of the works listed are already several years old and the information is compiled 'from the Contemporary Music Compositions Files of the Polish Composers Union Library': could these perhaps be newly published works? And also a 'Music Chronicle' detailing performances of Polish compositions throughout the world. I should like to receive more up-to-date issues of *Polish Music*.

## FIRST INTERNATIONAL CONFERENCE ON COMPUTER MUSIC, MASSACHUSETTS INSTITUTE OF TECHNOLOGY OCTOBER 28-31, 1976

### STEPHEN ARNOLD

Although the Computer Music Conference was described as 'First' and 'International', it was in fact the second (following the one in 1975 held at the University of Illinois at Urbana-Champaign) and it remained a predominantly national (i.e. American) affair. Its Americanness must be partly due to the obvious difficulties of travelling long distances from abroad, especially at the time of year when university and college terms are already well advanced; but it is chiefly a reflection of the fact that the field of computer music in all its forms, as of computer science in general, was pioneered and developed, and continues in its development, principally in the USA.

As can be seen from the listing of papers presented (see below), only eight of the forty were from outside the USA. Of these, one was by Barry Truax from Canada and another (GROOVE again) was by Max Mathews, the pioneer of computer sound synthesis, for many years at Bell Telephone Laboratories at Murray Hill, New Jersey, but now working at IRCAM at Paris. Four of the others were by Italians (one, di Gugnio, now working at IRCAM) and the remaining two by Stan Tempelaars (Netherlands) and Stanley Haynes (UK). (Mr. Haynes's paper was not read to conference as he was unable to attend.) The American contributions came from all parts of the country and reflected a wide range of technical concerns. The



delivery of papers was strictly limited to fifteen minutes, with a maximum of five minutes discussion, which made for extremely intense sessions. Even being a humble delegate was quite hard work: the second day's business, for instance, consisted of twelve papers, two panel discussions, an open discussion, two concerts and studio demonstrations, all shoe-horned into a fourteen-hour day.

The main dissatisfaction I heard voiced, especially by composers, was that papers which discussed specific compositions, or emphasised specifically musical questions, were rare to say the least. The contributions from John Melby and Tracy Lind Petersen were among the memorable exceptions. The opportunity to redress the balance in the panel discussions was not effectively taken: the one entitled 'What Do Composers Want from Technology?' had among its panel members a number of European composers whose poor English severely limited their contributions, with the result that the session degenerated into a rather pointless verbal duel between Richard Hoffman and the chairman, Milton Babbitt.

The concerts were held in the fine Kresge Auditorium at MIT. There were three solely of computer-synthesised compositions. A fourth, presented jointly with the ISCM World Music Days,<sup>1</sup> was to have included three analogue and three digital works, but the Barbaud and Radavanovic works were not given as the tapes were somehow mislaid the night before at the ISCM dinner at the Statler Hilton Hotel in downtown Boston. They were replaced by two works given in the Computer Music Conference concerts, Jonathan Harvey's *Time Points* and Tracy Lind Petersen's *Everything and Nothing*. (The concert will be restored to its intended shape for its broadcasts around the world.)

The original programme is listed below, as are those of the three conference concerts. From these listings, apart from the obvious, understandable and inevitable American predominance, a rather more surprising bias is apparent. Of the thirteen works in these three concerts, six were realised using MUSIC 360, the synthesis program developed by the main conference organiser, Barry Vercoe. A further three were realised on the new MIT system, developed under Vercoe's direction. Ten of the thirteen were realised at Princeton University or MIT; none was the product of a hybrid system. When I later asked Barry Vercoe about these points, he explained that the works presented were chosen by a panel and were the best submitted.

On my travels further west after the conference it became clear to me that a considerable amount of resentment had built up because of the strong 'East Coast' flavour of these concerts.<sup>2</sup> Of course, readers should realise that when one says 'East Coast' and 'West Coast', one is not drawing just a geographical distinction, but referring to a cultural division which is of crucial importance, at least to many Americans. 'East Coast' tends to imply 'deterministic', 'traditional', 'intellectual', 'establishment', even, in the musical world, 'twelve-note'; 'West Coast' tends to imply 'aleatoric', 'experimental', 'revolutionary', 'hippy'. (Perhaps I should add that these adjectives are here being used rather loosely and journalistically.) On the one side of the divide, one might place Babbitt, Carter, Vercoe, Wuorinen, et al; on the other, Cage, Erikson, Oliveros, Reich. By eliminating the 'West Coast' therefore, the conference eliminated from its concert programmes an important facet of American culture. It might be argued that, however the conference organisers view that facet, they had a responsibility to see that it was represented. (One could extend the argument and say that they should have made more of an effort to secure and promote more contributions from outside North America.) The counter-argument is that the selection panel should promote only what it believes to be of genuine worth, rather than try to ensure wide representation merely for its own sake and regardless of merit.

I for one was impressed with the high musical quality, individual character and expert execution of works such as *Artifice* by Paul Lansky, *Templum* by Hilary Tann (originally from Wales), *Two Stevens Songs* by John Melby and *Synapse* by Vercoe himself. *A Little Background Music* was far too modestly titled by its composer, Beverly Grigson.

In spite of the above reservations, and in spite of the fact that a number of the papers presented were comprehensible only to a few specialists, the conference was in my view a great success, bringing home as it did the depth and breadth of research effort in what is surely the most inspiring development in contemporary music making. It was striking to discover many fine musicians who were conversant, not to say fluent, in advanced computer science, and also computer scientists who had a subtle and sensitive grasp of the musical problems of composers. (It is frustrating, and even distressing, to contrast the situation here in Britain, which now seems to me an illiterate society with regard to computer music.)

A number of papers are to be published by MIT Press. A booklet of all the abstracts may be obtained from Professor Barry Vercoe, Department of Humanities, MIT, Cambridge, Mass. 02139, USA, as can a catalogue of *Computer Music Compositions of the United States* (1976) compiled by Carol Melby, (\$5.00). The Second International Computer Music Conference is to take place on October 26-30, 1977, at the University of California at San Diego, sponsored by the Music Department and the Center for Music Experiment at UCSD. For registration or information, write to Computer Music Conference, UCSD — Q037, La Jolla, California 92093, USA. I wonder if anybody from Britain will manage to get there this year.

## NOTES:

<sup>1</sup>The 1976 ISCM World Music Days were held in the USA for the first time during the Bicentennial Year. Between October 24 and 30 thirteen concerts were given, centred on the New England Conservatory at Boston. Sixty-six works of a great variety of nationalities and styles were performed. It was particularly exciting to hear students of the Conservatory (they played fifteen of the works) and of the University of Iowa (four) playing to the best professional standards.

<sup>2</sup>The same kind of grumbles from 'West Coasters' were evident in relation to the selection of American works for the ISCM World Music Days.

## PAPERS PRESENTED AT THE FIRST INTERNATIONAL CONFERENCE ON COMPUTER MUSIC, 1976

### ANALYSIS/SYNTHESIS TECHNIQUES

Analytic Signal Processing in Music Computation — James H. Justice, University of Tulsa, Oklahoma  
Intensity Characteristics of a Synthesis Model for Producing Brass Sounds — Ercolino Ferretti, University of Utah  
Music Synthesis by Optimal Filtering — James F. McGill, Culler/Harrison, Inc., California  
Practical Considerations in the Application of Linear Prediction to Music Synthesis — R. Cann, P. Lansky, K. Steiglitz, and M. Zuckerman, Princeton University, New Jersey  
The Use of the Phase Vocoder in Computer Music Applications — James A. Moor, Stanford University, California

### SYNTHESIS HARDWARE

A Real-Time Computer Controlled Digital Oscillator Bank — G. Di Giugno, IRCAM, Paris.  
Microprocessors: A Multiprocessing Approach to Real-Time Digital Sound Synthesis — Bruce Hemingway and David K. Barton, University of Indiana  
VOSIM Sound Synthesis — Stan Tempelaars, Institute for Sonology, Utrecht, Netherlands  
Real-Time Tone Synthesis from White Noise Using High Speed Digital Speech Processors — David V. James, MIT

### MUSIC INPUT LANGUAGES AND EDITORS

MUSICA: A Language for the Transcription of Musical Texts for Computers — Giovanni B. Debiassi and Giovanni G. De Poli, University of Padua, Italy  
Second Generation Music Input Terminals: The PCS-300 Music CRT — Armando Dal Molin, Music Reprographics, Ltd., New York  
Stylus and Tablet: A Convenient Method for Music Input — Hal P. Shearer and Alan C. Ashton, Brigham Young University, Utah  
Interpretation of a Linear Music Notation for Automatic Playing and Graphing of Classical Music Scores — Alan C. Ashton and Robert F. Bennion, Brigham Young University, Utah  
Computer On-Line Music Editing in a Compositional Environment: Some Special Considerations — Steven Haflich, MIT

### SOUND SYNTHESIS LANGUAGES AND EDITORS

SPIRAL: A Signal Processing Research Language — John W. Amuedo, Culler/Harrison, Inc., California  
An Interactive Graphical Interface for MIT's MUSIC 360 Language for Digital Sound Synthesis — Tom Creutz, University of Nebraska  
OEDIT — An Interactive Orchestra Editing System — Richard Steiger, MIT

### USER PSYCHOLOGY I: CONTROL OF TIMBRE

A Topological Model for the Perception of Context-Embedded Timbres — David Rothenberg, Temple University, Pennsylvania  
Perceptually Based Controls for Additive Synthesis — David L. Wessel, Michigan State University and IRCAM, Paris

### USER PSYCHOLOGY II: KNOWLEDGE BASED SYSTEMS

Capturing Intuitive Knowledge in Procedural Descriptions — Jeanne Bamberger, MIT  
Toward a Theory of User Interfaces for Computer Music Systems — Otto E. Laske, University of Pittsburgh, Pennsylvania

### FACILITIES REPORTS

Outline of the Research at the CNUCE-CNR of Pisa, Italy — Pietro Grossi, Pisa, Italy  
Software Sound Synthesis in the United Kingdom — Stanley Haynes, University of Southampton, England  
Sound Language — George Cohn, Indiana University  
An Interactive Software System for Real-Time Sound Synthesis — Graziano Tisato, University of Padua, Italy

### THE COMPOSER'S EXPERIENCE

Variable Amplitude Modulation by BUZZ — Joel Gressel, Baruch College, City University of New York  
Composing with Cross-Synthesis — Tracy Lind Petersen, University of Utah  
Compositional Approaches to the Combination of Live Performers with Computer-Produced Tape — John Melby, University of Illinois



# DIGITAL SOUND RECORDING AND EDITING

All-Digital Sound Recording and Processing — Loren Rush, James A. Moorer and Gareth D. Loy, Stanford University, California  
A Portable Off-Line Tape Recorder for Recording, Archiving, and Duplicating Digitized Music — Robert B. Ingebreetsen, Thomas Greenway Stockham, Jr., and Richard B. Warnock, Soundstream, Inc., Utah  
Floating Point Encoding for Transcription of High Fidelity Audio Signals — Francis F. Lee and David Lipschutz, MIT

# SYSTEM DESIGN PHILOSOPHIES

Aspects of Computer Music System Design — Bruce E. Rittenbach, La Jolla, California  
Input Languages Affect System Design — Wayne Slawson, University of Pittsburgh, Pennsylvania  
The Inverse Relation Between Generality and Strength in Computer Music Programs — Barry Truax, Simon Fraser University, British Columbia, Canada

# REAL-TIME CONTROLS

An Inexpensive Computer-Driven Organ Playing System — Jeffrey H. Lederer, University of Pittsburgh, Pennsylvania  
An Input Interface for the Real-Time Control of Musical Parameters — Paul Edward Dworak, Carnegie-Mellon University, Pennsylvania  
The Conductor Program — M. V. Mathews, IRCAM, Paris

# INTERACTIVE COMPOSING

Real-Time Interactive Compositional Procedures — Emmanuel Ghent, New York City  
Composing Hybrid Music with an Open, Interactive System — Larry Austin, University of South Florida  
Interactive Woman-Machine Improvisations — Joseph Pinzarrone, University of Delaware

# CONCERT PROGRAMMES AT THE FIRST INTERNATIONAL CONFERENCE ON COMPUTER MUSIC

(Information appears in the following order: composer's name, home institution, title of work, date of composition, place of realisation, technical details.)

# PROGRAMME 1

Jonathan Harvey (University of Sussex, UK), *Time Points* (1970; Princeton; MUSIC 360)  
Hilary Tann (Princeton University), *Templum* (1975; Princeton; MUSIC 360)  
Beverly Grigsby (California State University at Northridge), *A Little Background Music* (1976; Stanford; MUSIC 10)  
Paul Lansky (Princeton University), *Artifice* (1975-6; Princeton; MUSIC 4 BF & Music 360)

# PROGRAMME 2

John Melby (University of Illinois at Urbana-Champaign), *Two Stevens Songs* for soprano and computer (1976; University of Illinois & Princeton; MUSIC 360)  
Richard Hoffman (Oberlin Conservatory, Ohio), *In Memoriam Patris* (1976; MIT; MUSIC 11)  
Barry Vercoe (MIT), *Synapse* for viola and computer (1976; MIT; Music 11)  
Tracy Lind Petersen (University of Utah), *Everything and Nothing* (1976; University of Utah;?)

# PROGRAMME 3

Barry Truax (Simon Fraser University, B.C., Canada), *The Journey* (1972; Simon Fraser University; POD 5 & POD 6)  
P. Howard Patrick (Washington, D.C.), *Suspensions* (1973; Princeton; MUSIC 360)  
Michael Dellario (Princeton University), *Maud* for soprano and computer (1974; Princeton; MUSIC 4BF)  
Ethan Haimo (University of Indiana at South Bend), *Convergence* (1973; Princeton; Music 360)  
Alva Couch (MIT), *Surges* (1976; MIT; MUSIC 11)

# ISCM ELECTRONIC MUSIC CONCERT

Knut Wiggen (Stockholm), *Resa* (1974; Stockholm; computer realised)  
Enrique Raxach (Netherlands), *Chimaera* for bass clarinet and tape (1974; ?; analogue)  
Pierre Barbaud (IRIA, Paris), *Ars Recte Computandi* (1975; CEMAMu; CGM & Saltatio, computer realised)  
Vladan Radovanovic (Belgrade), *Electra* (1974; Radio Belgrade; EMS, analogue)  
Andre Laporte (Belgium), *Harry's Wonderland* for bass clarinet and tape (1976; ?; analogue)  
Benjamin Boretz (Bard College, N.Y.), *Group Variations II* (1973; Princeton and Bell Telephone; MUSIC 360)

# CONTEMPORARY MUSIC NETWORK

# MATRIX Jane Manning (soprano)

Oliver Knussen	Trumpets
Avril Anderson	Mono-Status
Dallapiccola	Machado Songs
Dallapiccola	Goethe Lieder
Michael Tippett	Piano Sonata No. 2
Harrison Birtwistle	Death of Orpheus

# October

2	The Maltings, Farnham
3	The Library Theatre, Luton
4	Clifton Site, Trent Polytechnic, Nottingham
5	Warwick University
8	Bolton Central Library
9	Farnworth Methodist Church Hall, Widnes
10	Huddersfield Polytechnic
11	York Arts Centre
13	Turner Sims Concert Hall, Southampton
14	Christ's Hospital Arts Centre, Horsham

# QUARTERNITY with GORDON BECK - keyboard

(Henry Lowther, Stan Salzmann, Trevor Tomkins, Phil Lee, Chris Lawrence)

# October

18	Great Harwood Sporting Club, Lancashire
19	Liverpool (Jazz Centre Society)
20	Band on the Wall, Manchester
21	Leeds Playhouse (late night)
22	Hurlfield Campus, Sheffield
23	Phoenix Theatre, Leicester
24	Aston, Centre for the Arts, Birmingham
25	Solent Suite, Southampton Guildhall
26	Bridgwater Arts Centre

# SPECULUM MUSICAE Phyllis Bryn-Julson (soprano)

Stravinsky	Three Songs from William Shakespeare
Robin Holloway	The Rivers of Hell *
Elliot Carter	A Mirror on which to Dwell
Stefan Wolpe	Piece for Two Instrumental Units
Donald Martino	Notturmo

\*World première

# November

1	Wigmore Hall, London
2	York University
3	Huddersfield Polytechnic
5	Cambridge University
7	Keele University
8	Royal Northern College, Manchester
9	Leeds University
10	Lancaster University
11	Liverpool University

For further details, please contact:  
Annette Morreau, Music Department,  
Arts Council of Great Britain,  
105 Piccadilly, London, W1V 0AU.  
Tel: 01-629 9495.

Arts Council  
OF GREAT BRITAIN

Autumn Tours 1977



ODALINE DE LA MARTINEZ

The Zagreb Biennale is probably one of Eastern Europe's most successful attempts at Cultural Interchange with the rest of the world. This year's festival, the ninth, consisted not only of seven days devoted entirely to the performance of contemporary music, but also included a symposium on 'New Unknown Music', films, TV and video programmes every day and exhibits such as John Lifton's Green Music and Peter Vogel's *Musical-Cybernetic Environments*. From the outset it was obvious that the festival had not just been 'thrown together' in the last six months, but was the culmination of many months of planning and organisation.

The first day began with a morning concert by the mixed choir of the Ivan Goran Kovačić Student Society and consisting entirely of Yugoslav works. The outstanding piece here was *Kolo Bola* ('Round of Pain') by Stanko Horvat which, based on a poem by Mak Dizdar, was a wonderful mixture of folk and avantgarde techniques producing effective and moving results. On the same day the Opera Company of the Croatian National Theatre presented *Moć Vrline* ('The Power of Virtue'), a stage work with music by Igor Kuljerić and a libretto by Dejan Miladinović, who also directed. The idea of the piece, taken from the novella *Statuette* by Mirko Božić, is that man cannot live alone, cut off from the rest of the world, but that he should join in actively and not go about concerned only with his own problems. The libretto presents the novella's original material intact but in a different sequence, beginning at the end of the story. Unfortunately the music did not equal the story in dramatic power, and as a result I found myself more interested in the stage action.

The second day was slightly more international than the first. In the morning we heard the world premiere of a *Symphony* by Silvio Foretic (a Yugoslav living in Germany) which turned out to be a piece of music-theatre. It was performed by the composer himself at an upright piano and aided by various microphones which amplified his voice as well as multifarious effects from the piano's inside, and was based on the amusing notion of a composer waking up and setting out to write an orchestral piece, but after much consideration throwing down his pen and returning to bed. The early evening saw some excellent dancing from the Festival Dance Ensemble in *Pan*, a series of 'dance tableaux' by Natko Devčić. In the evening the North German Radio Choir of Hamburg under Helmut Franz gave German and Yugoslav works. The singers were outstanding both in their accuracy of pitch and their ability to act. Probably the most interesting work in their programme was *Suci* ('Judges') by Milko Kelemen, Ligeti-like in its build-up of clusters juxtaposed with rhythmic sections. The overall effect was exciting and the length 'just right'. Also performed were two works by Stockhausen, the first part of *Atmengibt das Leben doch erst das Singen gibt die Gestalt* ('Breathing gives life but only song gives form') and a section of *Sing ich für dich, singst du für mich* ('I sing for you, you sing for me'), the latter receiving its world premiere. Although excellently performed, neither of these proved outstanding. There was also a very amusing piece called *Für Stimmen ... missa est (Madrasha 2<sup>is</sup>)* by Dieter Schnebel and a very boring one called *Requiem Hashshirim* by Giuseppe Sinopoli.

The third day was largely devoted to John Cage and Mauricio Kagel. In the late afternoon the English pianist John Tilbury gave a complete performance of Cage's *Sonatas and Interludes* for prepared piano. This, I felt, was very flat, since insufficient contrast was created between the movements: tempi were too similar and the poetic quality of several pieces was altogether lacking. The performance was preceded by a public demonstration of preparing the piano: an excellent idea. In the evening came one of the highlights of the festival with a whole concert devoted to some of Kagel's music-theatre pieces presented by the Oper der Stadt Köln, including *Kontra-Danse*, a 'ballet for non-dancers', *Recitativarie* for singing harpsichord player, *Camera Obscura*, a 'chromatic game with light sources' and *Kantrimusik*, a 'pastorale in pictures'. All the works were marvellously funny and very cleverly conceived. Apart from a slight problem with falling scenery in *Kantrimusik*, the performances went like clockwork.

The fourth day was the real reason for my trip to Zagreb. The Belgrade Chamber Orchestra under Uroš Lajović played a series of works by various composers including one of mine. One that interested me particularly was *Pranam I* for voice, tape and ensemble by Giacinto Scelsi. Michyko Hirayama (soprano) proved a wonderful interpreter of Scelsi's music: her marvellous range and her uncanny ability to create unusual vocal sounds charmed the audience. Later on that day the world premiere of Vinko Globokar's *Carrousel*, with libretto by Eduardo Sanguinetti, was given by the Ensemble Musique Vivante from Paris and some Yugoslav musicians. The performance took place in the large Zagreb Sports Centre, and the audience was able to walk around the stage during the piece. It was, to say the least, an unusual spectacle. The work 'burst', as it were, when some of the audience sounds recorded at the beginning of the performance were played back as part of the 'happening', which eventually finished with a short play parodying a beauty contest. My last impressions were of the singers walking among the audience and singing into the spectators' faces...

The fifth day was entitled 'Non Stop Gratis — Non Stop Gratis — Non Stop'. Music began in the morning with Globokar's *Laboratory I, 1977* (played, as were *Laboratory II* and *III*, by members of the

Ensemble Musique Vivante), followed by the Zagreb Wind Quintet which in turn was followed by a multimedia work by Hans Otte called *What is the difference between you and me?* This last proved to be utterly boring, but it was soon followed by a more interesting concert of mainly French music by the Ensemble Musique Vivante under Diego Masson, in which the best work was *Ricercare* by the young composer André Bon. But there was, of course, more music to come. The St. Sophie Chamber Ensemble for Contemporary Music from Skopje performed two Yugoslav works and one by the Australian David Ahern, and finally the Ljubljana Radio and Television Symphony Orchestra under the American conductor Richard Dufallo gave a concert which ended with *Mirage* by the American composer Jacob Druckman.

The sixth day again began with Globokar, this time his *Laboratory II*, which proved to be much the same as *Laboratory I*. In the late afternoon the Ars Nova Ensemble of Cluj from Rumania gave a concert of Rumanian and Yugoslav pieces, the most interesting of which were Miriam Marbe's *La parabole du grenier* and Anatol Vieru's *Mosaïques pour trois percussions*. The latter created an exciting sound world through the use of soft and rhythmic percussion. In the early evening I attended a concert of electronic music realised at the Radio Belgrade Electronic Music Studio. Of the five works played, the best was Ludmila Frajt's *Nocturno Belgrade*, an evocative piece of gentle night sounds.

Finally on the sixth day came an evening of compositions by Luigi Nono, the whole concert consisting of works which were permeated with communist propaganda of one sort or another. It began with a tape piece entitled *Ricorda cosa ti hanno fatto in Auschwitz* ('Remember what they did to you in Auschwitz'), which as far as I was concerned was the only worthwhile work in the programme. The pieces in the rest of the concert were so overpowered by aimless emotionalism that halfway through I began to get angry with the composer for trying to tamper with my feelings. For me the worst aspect was his use of many Cuban poems and Cuban phrases, not in the sense in which they were originally meant, but used in his own manner. It was almost as if he was working against the very power of the words he was using, and I could not understand how, if he actually felt the force and meaning behind the Cuban material, he could treat it so lightly and carelessly. And then, of course, he tried to give his material more 'meaning' by shrouding it in a cheap emotionalism, unforgivable in a composer of his stature.

Of the seventh day I'm not prepared to write, since I had to take an afternoon plane back to London. I did, however, catch Globokar's *Laboratory III* (his major work *Concerto Grosso (1969-1977)* was played that evening) and had a quick last look at the Lifton and Vogel exhibits.

On the whole, the Zagreb Biennale was for me a very exciting experience: after all, it's no small feat to organise successfully a whole week crammed with contemporary music. There are, however, two small criticisms I should like to make. First, it should be possible for composers to hear their own work rehearsed several times before the performance. (I know that in my own case I didn't hear my piece *until* the performance.) And secondly, I think that the festival should make an attempt to play a few more women composers. This I think it can do without lowering standards. May I suggest Betsy Jolas, Elisabeth Lutyens, Thea Musgrave...

NOTE:

<sup>1</sup>For a detailed discussion, of *Kantrimusik* see Glyn Perrin, 'Mauricio Kagel', *Contact 15* (Winter 1976-77), pp.13-16. (Ed.)

THREE DAYS OF CONTEMPORARY MUSIC, ATHENS  
JUNE 7-9, 1977

SIMON EMMERSON

Quite unexpectedly and at very short notice, I found myself the guest of the Secretariat General for Press and Information for 'Three Days of Contemporary Music', from June 7 to 9, part of a series of 'pre-(Athens) Festival Events', the main festival running from July to September. The exemplary organisation and publicity was the responsibility of the Hellenic Association for Contemporary Music. The three concerts embodied two interwoven strands: one of nationality, Greek and German groups being presented — in fact the HACM collaborated with the Athens Goethe Institute in the preparation of programmes and organisation partly in celebration of the latter's 25th anniversary; the other the relation of acoustic and electro-acoustic musics.

The brunt of the technical production was shouldered by the Gunther Becker Live Electronic Music Ensemble from Düsseldorf. Professor Becker worked for many years in Greece and has developed an obvious special feeling for the country and its people; he has for some years now directed the electronic music teaching at the Robert Schumann Institute in Düsseldorf. The Ensemble consisted of seven performers on this occasion, from several nationalities and consisting of both professional players and advanced students: Nikos Athinaios (keyboards), Francisco Estevez and Raimund Jülich (synthesizers), Albert Gohlke (cello), Karl-Josef Kels (percussion), Michelle Lee (flute) and Emilio Mendoza



(guitar). They were accompanied by two technicians who also effectively performed the synthesizers: Michael Feller and Hans Shlosser. The long apprentice-style training common in many areas of German higher education, which allows for many changes of university or institute over a period of as much as six years for a first degree, means that the transition from student to professional performer can be much smoother. On the other hand, the absence of grants, forcing students to work throughout this period, will be disruptive if employment within the music profession is not available for short periods (as now — even in Germany!). The Ensemble were joined by Greek soloists, the Athens College Children's Choir and four conductors.

The concerts all took place in the Herodus Atticus Theatre which seats about five thousand people and has been in use since ancient times, sitting just under the Acropolis. The acoustics are, I am told, not so good as at the more famous theatre at Epidaurus, and the four-channel works might just as well have been remixed to two, as the four speaker groups were spread across the stage and not around the auditorium. The theatre is the focal point of the Athens Festival and of the Hellenic Weeks of Contemporary Music of which there have now been five. Last year it was the setting for the Xenakis Week, the composer's tumultuous welcome back to his homeland, during which nearly every one of his works was performed to completely packed houses. Perhaps there was a hint of disappointment that other Greek composers did not have quite this pulling power: the 'three Days' averaged about half full, a mere 2,500 people for concerts of contemporary and electronic music! (And very few left in the interval).

The Becker Ensemble had at its disposal a considerable amount of equipment: six EMS synthesizers (VCS3 or AKS), two ARP 2600s, two ARP Odysseys (with keyboard), various keyboards and sequencers (ARP and EMS), three TEAC four-track tape decks and at least three Revoxes, as well, of course, as mixing and amplification equipment. The technicians and performers had to combat the heat (the machinery just is not built for 90 degrees or more!) and the usually badly expressed demands of the composer in his score. Nonetheless few composers seemed to use this array to anything near its full potential.

The very first piece performed turned out to be one of the most interesting of those compositions involving tape: and significantly it was by one of the German composers who wasn't a member of the Ensemble. Johannes Fritsch's *Run-Tits-75-77* combines a pre-recorded tape with synthesizer sounds. The ARP 2600 includes an 'envelope follower', this outputs a voltage proportional to the amplitude (loudness) of any input signal. In this case the pre-recorded tape is both heard over loudspeakers and is 'followed' in the synthesizer, this device then controls 'live' other generators in the machine which therefore accompanies the tape. In much tape music one must be wary of too extensive a use of purely electronic, periodic waves, intrinsically less interesting than concrete materials electronically manipulated. In the search to make purely electronic sources more varied, voltage control has produced some possibilities after an initial phase of cliché so easily produced on, say, the VCS3 synthesizer. Fritsch's piece, some of which was computer synthesized on a PDP11 at San Diego and remixed in the Feedback Studio in Cologne, has a terrific vitality, due to its fast changing densities and timbres: a tangled web of jungle-like magnitude with a remote predecessor in Stockhausen's *Hymnen*. The only other work by a German non-member was also in the first concert and also a tape, but of a much more limited scope: Klaus Hashagen's *Rotation for Synthetic Sounds*, apparently using some simple voltage control techniques and elementary sequencer programming. Unlike the Fritsch work it fell into all the traps of boring predictability. A simple rhythm is phased with itself while various timbre changes are heard. 'The filters,' the composer explains, 'are also an important part of the composition. The gradual opening and closing of the filters of a synthesizer is linked with the control by a keyboard with a low frequency oscillator. The result is a continuous change of timbre.' Such notes are at best irrelevant (for a good composition), at worst explain ironically the banality and triteness of the ensuing piece.

Sandwiched between these two works was a live electronic work, *Crisis* by the Greek member of the Becker group, Nikos Athinaios, for piano and electronic modulation. Here there appeared to be insufficient integration of the modulated sound with the structural aspects of the composition, resulting in a colouristic mess, made worse by the use of complex modulation of the piano (i.e. with square waves etc.) the products of which were noisy and unclear and meshed very badly with the live sound. Two other Greek works in the concert, Michael Grigoriou's *Piano Quintet* and Dimitris Terzakis's *Sonata in C*, looked in very different ways at aspects of the 'new tonality'. Grigoriou uses a collage of tonal (or, more accurately, consonant) passages with those the composer describes as 'more abstract', i.e. presumably atonal or dissonant. But this equation, now quite common in discussion of contemporary music, is very dubious. 'Tonality' is as abstract a phenomenon as any 'atonality'. Nevertheless the seams of the collage were well concealed in this polished work.

The most impressive work in the first concert was the last item, Jani Christou's *Anaparrastasis 3: The Pianist*. We have heard more of Christou's work here than that of most other Greek composers due largely to the English Bach Festival. He was killed tragically young in a car accident in 1970. Having a voracious appetite for multiple projects, he left so much unfinished: for instance,

fragments of a score of *The Oresteia* which was to completely integrate the text with a tape, but also the ambitious plan always referred to simply as *The Project*. At one level this involved the creation of a huge arts complex on one of the Greek islands, incorporating workshops, halls, hotels and open air theatres, as well as provisions for street theatre, all of which had been arranged to some degree of detail at the time of his death, but remain unrealised to this day. At another level, the composer had planned in outline a series of 130 works, which can loosely be described as multi-media, for performance in such ideal circumstances. Only four, however, are performable. 'Anaparrastasis' means 'recreation', and the scores are relatively open. About them John G. Papaioannou has written 'In these works, not only a new form of collaboration between the Arts is achieved, but also a new form of communication with the public e.g. performances in streets in open nature etc.' I hope that such ideas really do generate the actual performances promised: the enthusiasm and energy is undoubtedly available in Greece both in audiences and among performers. This particular score concerns, to summarise in terms that sound trite where the music does not, the agony of a pianist attempting to relate to his instrument, to overcome some kind of agony at being confronted with apparently insurmountable obstacles to performance. Scored for actor, instruments, vocal group, tapes and lights, the dramatic line is simple, steadily building to a terrifying climax. There are four levels of activity: an electronic tape continuum, increasing in density as the three stereo layers are added; the amplified instrumental parts, acting as punctuation and nervous twittering; the vocal group (a large number of children and students) whose crude gut reactions, from quiet whisperings to screams, are at the core of the drama; and the actor ('The Pianist') himself, played by a painter friend of the composer, Gregory Semitecolo, almost silent yet communicating through the density of the sounds. True, such theatre works date slightly (this piece was written between 1968 and 69) and may have a special appeal in Greece. It took at least three days to penetrate through to me why Greek composers and audiences alike were so at home with crowd sounds: they've had them for thousands of years! The vocal group was both inside and outside the drama, and the basic idea of 'hubris', as the pianist appeared to fall before the gods' anger at his egotistical pride, gave the work an added associative dimension.

Day two reversed the emphasis of the first concert and contained works by composers in the Becker Ensemble. Two works featured the (English) flautist Michelle Lee: Raimund Jülich's *Werkstück I* for flute and electronics and Francisco Estevez' *Phonson* for flute, guitar, piano, electric organ and electronics. The former was the more successful of the two, but still suffered from a failure to

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integrate the live and the modulated sound and to produce a coherent form. The latter piece is built from periodic rhythms percussively produced on the instruments and by the instruments and other sources on tape. Here too, I thought there was a complete failure to integrate instrument with instrument, and instruments with tape, and to make the whole something more than just a series of non-evolving sections: it had none of the interest of other types of repetitive music where this is a structural principle.

Two Greek works shared the first half with these: Michael Adamis's *Paramythi* for four-track tape, clarinet, violin, cello, percussion, reciter and live electronics and Nikos Mamangakis's *Music for Piano and Small Orchestra*. With the exception of the Christou, which, incidentally, he had conducted the previous night, Adamis's composition was the first Greek work to show any real degree of integration of instrumental and electronic sounds. The recitation, however, dominated the work, which the composer described as being concerned with 'a projected journey, beyond myth, along the fundamental ideas of Freedom, Creation, Love' from the story Jonathan Livingstone *Seagull* by Richard Bach. The Mamangakis work, which had opened the concert, exists in several versions. The solo piano part, written first, may be accompanied by a small ensemble (leaders of the orchestral sections) or by a larger orchestra, with a children's choir as an optional extra in the last section, which this performance omitted. This was a very fluid work, full of invention and life; the complex piano part was played by John G. Papaioannou, who is also Secretary General of the HACM and a leading musicologist.

Becker's own *Odyssee 77*, a very substantial film/tape work, filled the second half. He has used two new EMS gadgets in its making: the video synthesizer 'Spectron' (similar in some principles to other EMS systems, with shape generators, colour controls etc.) and the 'Vocoder', analysis/synthesis device (which can superimpose recognisable speech patterns on any source material — from noise or other electronic waves to a full orchestra — by first analysing a vocal input into 22 frequency bands, each of which is 'envelope followed', and produces a control voltage which is then used to control the 'material'). Much credit should go to Becker for avoiding the almost inevitable clichés which such a device might create in his manipulation of some of Homer's text, to which he adds some live synthesizer sound. Although I understand the film and tape were not properly co-ordinated in this performance, I must admit that the film caught my imagination to a greater extent.

The final concert consisted entirely of works by Greek composers, with the Becker Ensemble and Greek soloists performing. Haris Xanthoudakis's *ViolonCelloStimmen* for cello, percussion, synthesizer and three four-track tape decks did, I believe, have technical problems both in rehearsal and performance, but the extensive equipment required, amounting to a complex four-channel tape delay system, produced results far less impressive than the layout suggested. This may be a confusion between criticising technical failure and poor composition. Vangelis Katsoulis's "....." op.20, for instruments, tapes and electronics is an extension of two older tape works. The instruments have an almost accompanying function and add very little material of substance, concluding with a simple instrumental duo. Yannis Vlachopoulos's *Adiexodos* ('Impasse') for piano, two percussionists, tape, contact microphones and four synthesizers was the only Greek work apart from the Christou to have been performed abroad, at the ISCM meeting in Bonn earlier this year.<sup>1</sup> Here again the proliferation of technical means has not led to any greater expressive content. The most substantial work in this last concert was Stephanos Vassiliadis's *Aima* ('Blood'), a second version for tapes, chorus, dancers, films and lights. This work had no formal start or finish, beginning with a quiet tape drone during the interval and ending after the last member of the audience had left. This is a collaborative work with the visual artist Thanassis Rentzis. Vassiliadis founded and still directs the Athens College Children's Choir and was a personal friend of and collaborator with Christou in his last years. This work does owe something to the *Anaparasstasis* series in its use of mixed and integrated media. It is a vast collage — too long in its central section — using the word 'blood' in many contexts and languages, spoken by people whose ages range from two to over 90. The dancers stage various interaction rites, mostly pretty aggressive. The tape again acts as a matrix, sometimes at the forefront sometimes in an accompanying manner, against which the action (moving from stage to audience) occurs. The children come on slowly playing recorders and drone instruments (small bells and rattles), and as the work moves to a conclusion they flow out into the audience. The many ramifications of the composer's meanings can immediately be felt.

In conclusion, then, this was a festival which demonstrated the great vitality of Greek composers and audiences. The HACM, incidentally, runs an open studio in Athens, in which, for a very small fee, any composer may work with the Synthi 100 and associated equipment. The Becker Ensemble deserves credit for its technical expertise, but showed too that extensive equipment does not necessarily make for good composition. But perhaps I speak too soon: as the recent '28 German Composers' exhibition run by the Goethe Institute in London in June clearly showed, the musical strength of Germany — indeed that of any country — is almost inevitably built on a foundation of great activity, much of which may not be of a high standard. Is there such a foundation in this country? Suffice it to say that such a festival along the lines of the 'Three

Days of Contemporary Music' — to be held at, say, the open air theatre in Regents Park — is a dream to contemplate seriously.<sup>2</sup>

#### NOTES:

<sup>1</sup>Hugh Davies will discuss some aspects of the 1977 ISCM Festival from his personal viewpoint as a participating composer in the next issue of *Contact*.

<sup>2</sup>For a previous review of contemporary Greek music in this journal, see David Jones, 'Greek Month in London, November 1975', *Contact* 13 (Spring 1976), pp.36-37, which also discusses some recordings, including electronic music.

#### NEW MUSIC DIARY

KEITH POTTER

I must begin by using up some of my valuable space to ask those events organisers who are already in 'contact' to continue to send us details of forthcoming events *as far in advance as possible*, and to urge others to do the same. With a journal that has such futuristic schedules as we do, it's impossible to keep up-to-date unless we hear well in advance, and six or nine months ahead is not too far in terms of planning anything substantial. I'd like to give at least a mention in future to experimental and other activities that don't normally get enough publicity because their organisers can't afford much advertising (even in *Contact*), but I'm well aware that these are the very kinds of events that tend to be arranged at short notice. Still, please tell us as far ahead about as much as you can. Needless to say, I'm afraid I don't have the time to reply to everyone's information and letters: please take it for granted that your communications are most gratefully received, even if we can't act on all of them.

The work of British arts centres outside London deserves particular attention and documentation at this time, I think, and I'm grateful for publications like the regular *Review* from the Arnolfini Gallery in Bristol, an organisation which is continuing to do many interesting projects. Their publication has now been expanded and is both more informative and more meaty than it used to be.<sup>1</sup> Other centres of interest are the Third Eye Centre in Glasgow, which does a less detailed publication,<sup>2</sup> and the Birmingham Arts Laboratory,<sup>3</sup> featured in this diary and the subject of a piece in the next issue. I'd like more information on other organisations, for instance the Musicians' or Arts Collectives in Lincoln, Manchester and Newcastle, which are, I hope, proving that the collective/co-operative idea is not dead, though it's in the nature of these things to come and go. Back in Bristol again, the Musicians' Co-operative there is still going as far as I know and their newsletter can be obtained regularly.<sup>4</sup>

Meanwhile we've not, I'm afraid, yet been able to bring you the promised article on the London Musicians' Collective, though from their most recent newsletter<sup>5</sup> it would seem that things are moving and a really good prospect of an interesting season lies ahead with the occupation of premises shared with the London Film-makers' Co-operative. I hear about events in London at, for example, The City University and the Guildhall School of Music and Drama, the latter of which has recently moved into new premises in the long-awaited Barbican development, but not, for instance, from the Cockpit Theatre in NW8<sup>6</sup> or the Battersea Arts Centre in SW11,<sup>7</sup> to take one progressive institution from each side of the Thames!

Coming at various points on the line between the information bulletin and the fully-fledged 'journal' are such things as Universal Edition's *Musik Vorschau* from Vienna<sup>8</sup> which lists performances of UE works all around the world, the Boosey and Hawkes newsletter *Musica '77*,<sup>9</sup> the latest issue of which announces that they've just taken on the Austrian composer and well-known horn player Kurt Schwertsik as well as British representation for Edizioni Suvini Zerboni (no full details yet, but a catalogue is promised) which should make the music of composers such as Henri Pousseur much more accessible in this country than before. As mentioned above in the 'Foreign Magazines' section, *Tempo* magazine, also run from Boosey and Hawkes, has now started a News Section. Among recent publishers' catalogues received are a new one in Italian for Luigi Dallapiccola (Suvini Zerboni, through Boosey and Hawkes) and two from Schott's,<sup>10</sup> one in German for György Ligeti, but with an essay on the composer in German and English by Imre Fabian, and one in English for Anthony Gilbert which contains a useful survey of his output by Leslie East.

I must attempt to rationalise our coverage of other British magazines devoted at least in part to new music which we'd like to at least mention in each issue. I've already made a reference to the latest issue of *Musica*<sup>11</sup> to hand at the time of copy date in the course of writing about foreign magazines; despite a minor side-swipe at this very column, No. 12 (May 1977) is one of their best, with a lot of news and reviews, interviews with Paul Lytton and David Wheeler and an article on 'Fine Art Orchestras' by James Lampard in addition to other material mentioned by me earlier. By contrast, the second issue of its companion, the basically enterprising *Readings* (no date: it appeared in May),<sup>12</sup> has shrunk in size and number of pages and contains no reviews of music. I hope to discuss the first five or six issues of *Impetus*<sup>13</sup> next time.



We get quite a lot of news about foreign composers, some of whom are their own publishers, and new music groups which I can't possibly detail here. I'd like to present more about such composers as the American Kenneth Gaburo, who has sent us information about the publications of his own Lingua Press,<sup>14</sup> and Allen Strange's Electric Weasel Ensemble<sup>15</sup> who will be in Paris, if not in England, next February; I hope to be able to feature more American composers in our 'Composers Today' format in future issues: Gaburo, for instance, deserves to be known over here and basically isn't at all apart from the odd record. It may be useful to offer my limited information of this nature to anyone in this country who's interested, particularly any prospective promoters. The relevant addresses are in any case available in the footnotes as well.

Finally a word about improvised music on record. We intend to feature Incus and other labels in future issues as we have already done with the more commercially available Obscure records. One very useful source of all kinds of labels for improvised, free and experimental musics of many kinds is to be found in Brighton at the Public House Bookshop.<sup>16</sup> The range of music available from there on both disc and cassette, either over the counter or by mail order, is impressive, and I commend it to everyone interested.

Now on with the reviews, with my apologies to those involved in events to which I went which happened soon after my space-imposed cut-off date: next time ...

#### Monday February 7

Another of the BBC's ex-Round House-type concerts, this time at the Royal College of Music. At least there are still some new and lesser-known British works in the series, even if not nowadays a regular commissioned piece for each concert: next year there look like being no commissions in this series at all, or even in some of the others put on by this country's biggest commissioning body ... Played with Webern's Symphony and Ligeti's *Aventures* and *Nouvelles Aventures* on this occasion was John Casken's *Kagura* for 13 wind instruments which includes a prominent part for partly improvising alto saxophone, here played splendidly by Ian Mitchell. This is not a new piece, for it was begun in Warsaw in 1972 when the composer was still studying there and completed the following year for its first performance by the St. Paul's Orchestra in Birmingham. I don't agree with those who think that Casken's more recent works have not fulfilled the promise of this piece, which has, however, been given quite a number of performances. In fact, I think that it compares far less well with such more recent pieces as *Music for the Crabbing Sun*, reviewed in *Contact* 15. But it was

valuable to hear such a professional performance of it from the BBC SO under Elgar Howarth.

#### Friday February 11

Iain Hamilton got quite a lot of publicity with a number of first performances early in the year of which his new opera *The Royal Hunt of the Sun* at the Coliseum, based on the play by Peter Shaffer, received a good share. I don't want to discuss it in any detail, since it seemed to me a great disappointment after *The Catiline Conspiracy* of three years ago (the relative success of which may well have prompted the staging of *The Royal Hunt*), and I couldn't see (or hear) that there was anything good about the piece which wasn't attributable almost entirely to the original play.

#### Sunday February 13

An 'opera in camera' called *The Rape of the Teagoose* at Oval House,<sup>17</sup> presented by the I.O.U. Theatre from Hebden Bridge, West Yorkshire with curiously but compellingly dramatic and even 'romantic' music from a group of musicians integrated into the drama as actors and singers as well as players and including Phil Minton, Maggie Nichols (solo singer) and Colin Wood as well as the work's composer Lou Glandfield. The work was first performed in Cardiff; the group has since been on a tour of Holland. Oval House is a very good venue for experimental theatre and performance art, in particular, and if I'd stayed until late evening I could have seen Athenea Baker doing, among other things, a 'Total Improvisation keeping contact with the audience' to the music of Philip Glass.

#### Monday February 21

At the Royal Academy of Music this time, the last BBC 'new' music concert in the series was interesting mainly for the British premiere of the Greek composer Georges Aperghis's *Il Gigante Golia*, an original and quite funny piece with rather 'conventional' overtones which I don't imagine is the reason why the composer is thought of as highly as he is elsewhere. A good batch of singers and the BBC SO under Diego Masson also contributed Alexander Goehr's *Naboth's Vineyard*, boring in the extreme without the staging, and Stravinsky's *Renard*, likewise unstaged, the latter introduced, as was the Webern Symphony two weeks earlier, in his inimitable, if slightly deferential manner by Hugh Wood, who presumably won't need so many BBC introducing jobs now he's becoming a lecturer under Goehr's professorship at Cambridge University. Tapes of both this concert and the one on February 7



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have since been broadcast.

### Monday February 28

A strange programme broadcast live on Radio Three, and round the world since it was an EBU International Concert, from the City Hall, Glasgow was a typically Hans Kellerian attempt to present 'a sharply contrasting concert showing aspects of the performer's role in creation'. It included Matyas Seiber's arrangement *From the Art of Fugue* which he made with Alexander Goehr's father Walter and the Fifth Brandenburg Concerto, both played by the London Sinfonietta. But I mention the concert here on account of the inclusion of Earle Brown's *Available Forms 2* for two orchestras, in which the Sinfonietta under John Carewe was joined by the Scottish Chamber Orchestra under the composer himself, paying one of his fairly rare visits to Britain. (Why was this the *only* concert scheduled for his visit?) Apart from on record, this 1962 example of 'the performer's role in creation' is rarely heard and the opportunity was a welcome one. It stood up fairly well as a piece of music despite some differences of opinion and, dare I say, commitment as well as differences in experience of bringing off this kind of music among the performers. It does seem a waste of money and opportunity to send most of a band of 49 players actually bearing little resemblance to the real London Sinfonietta from London to Glasgow for one circa-20 minute piece, and then not to build on that beginning in more performances of this work and perhaps others using similar techniques. At least a repeat performance could have been arranged somewhere else, if not even in London.

### Wednesday March 2

The first of the more familiar London Sinfonietta's four concerts in the Queen Elizabeth Hall, London combining a wide selection of well-known and unknown works by Kurt Weill with performances of no fewer than six brand-new or almost new pieces from six British composers. A very laudable project, and incidentally not only a possible part of the reason for their not having done the Earle Brown work in London, but also a set of programmes anticipation of which made up for not being able to hear the Sinfonietta in London for half the season due to their extensive commitments elsewhere (abroad and on the Arts Council's Contemporary Music Network tour where two of the six British pieces in their London programmes received their premieres).

The Weill collection arose from two programmes presented at the 1975 Berlin Festival devised by David Drew and the subsequent recordings which were issued by DG last year.<sup>18</sup> The concerts included, however, quite a number of pieces discovered or made available for performance since then, though most of the performers were the same. In the sequence of works too long to name which formed the second half of the first concert, pride of place, despite the conclusion with the famous *Mahagonny Songspiel*, must go to the lugubriously intense *Vom Tod im Wald*, sung admirably by Michael Rippon and perhaps the best representation in these programmes of the lesser known side of Weill's music: bleak, sometimes even cold, but tough and resilient in the best works. The conductor for the evening, once again Diego Masson, seemed only there for the ride as far as the Weill pieces were concerned.

Of the two British works which formed the first half of the evening, both first London performances commissioned by the Sinfonietta, little need be said. Robin Holloway's Concertino No. 3 ('Homage to Weill') is a rather obviously unobvious tribute to the composer originally intended for the Berlin Festival concerts but expanding into a much bigger piece which wasn't finished in time. It apparently represents an important change in the composer's style and certainly sounds different from the rather seductive romantic excesses of works like *Domination of Black*, Holloway's 1974 Prom commission, but it merely sent me to sleep. As, despite its link with his opera *The Catiline Conspiracy*, did another offering from Iain Hamilton called *The Alexandrian Sequence*.

### Saturday March 5

Henri Pousseur's visits to this country are rarer even than opportunities to hear very much of his music, so I thought the trip to the Birmingham Arts Laboratory for a long evening of his work, organised as part of Douglas Young's extremely enterprising Arts Today Festival (which, just as enterprisingly as the programmes themselves, took place entirely outside London: mainly in Leicester and Nottingham), would be well worthwhile. If in the event I was disappointed, the fault must lie partly with Pousseur, but also perhaps with the choice of works on this occasion: adventurous and designed to show different sides of his output, but a lot of it remaining firmly on the ground as music and, more particularly, as music-theatre.

The best piece in the early evening concert was the new solo cello piece, <sup>19</sup>8/4 (it's been called lots of things, but that is, I think, its proper title and it's pronounced like the title of George Orwell's book), admirably, indeed beautifully, played by Rohan de Saram, who was as much a collaborator on the piece as merely its means of execution. The precision of microtonal inflexion arising from the attempt at a 19-note scale resulted, I thought, in some ravishing melodies on this occasion, though I must admit that a second performance of the work by the same player (who else is

going to take it on in a hurry? By the way, it is dedicated to him) and sounding to me pretty much the same structurally as the first, on May 1 in the Purcell Room (and subsequently broadcast), made me suddenly have serious doubts: I'm not sure why yet. *Apostrophe et six reflections* for piano was ably played by Peter Hill, but Douglas Young's bombastic accompaniment to de Saram in *Modèle Réduit* for cello and piano spoilt the piece completely.

Following this came, first of all, a TV film performance of the orchestral work *Colours croisées* and yet another indeterminate mix of *Paraboles* or *Paraboles mixes*, a set of dull tape pieces which can be combined ad nauseam. The rather dated (cinema) film of a version (just one of many possible ones and not even one of the 'real' ones in the opera house) of the opera *Voyage de votre Faust* was entertaining but gave, I suspect, only an idea of the potential power of this, Pousseur's magnum opus.

### Wednesday March 9

The second Sinfonietta concert was conducted by Elgar Howarth and, like the first, included a number of Weill UK premieres such as, in this case, *Bastille Music* and *Oil Music*, both arranged by David Drew from theatre music. The powerful *Berliner Requiem* ended the first half and the second half began with another UK Weill premiere, the First String Quartet in B minor, played by the Gabrieli Quartet, which is pretty tepid stuff, though the composer was only 19 when he wrote it, which makes a revival a bit hard.

The new British work in this programme was the first performance of *Silbury Air* by Harrison Birtwistle. Silbury Hill, the biggest artificial prehistoric mound in Europe, to be found in Wiltshire, gives the piece its title. It is obviously connected in the composer's mind with Paul Klee's idea of 'imaginary landscape' and hence with the 'imaginary landscaping' of Birtwistle's music 'through the juxtaposition and repetition of "static" blocks or, preferable for my terminology, objects', as he says in his programme note. These objects are every bit as striking and individual as with every one of Birtwistle's pieces, yet I wasn't quite satisfied at a first hearing with the ways in which they were put together, or, to quote the composer again, 'subjected to a vigorous inverted logic via modes of juxtaposition, modes of repetition, modes of change'. I'd like to hear the piece again soon to find out if I was wrong. It's good to see several pieces by Birtwistle coming out recently, since with his preoccupation with the opera *Orpheus* and his work at the National Theatre, there's been a lot less music from him in the last few years.

### Wednesday March 16

Premieres here from the 25-year-old Dominic Muldowney and the 43-year-old Anthony Gilbert. Muldowney's *3 Part Motet* characteristically makes use of a limited element of music-theatre, sticks thrown impulsively to the ground by the percussionists as they attack four high-hat cymbals, yet despite this rather disconcerting, almost embarrassing, display of 'tantrums', the music coheres in a rather strange way: not entirely unrelated to the work of contemporary composers to whom Muldowney is close (and who are revealed in his choice of source material from Machaut), but still a somewhat individual presentation of, to quote his own words, 'clear, hard-edged musical images that revoice within rigidly patterned forms and an increasing interest in medieval music (and in particular the late medieval motet)'. Gilbert's *Crow Cry* not only has less of that kind of originality (he probably doesn't want that kind!), but is also, again on a first hearing, dull and uneventful to my mind, though actually there must have been a lot of events in such a long piece. The main Weill event in this programme, conducted by Simon Rattle, was the first UK performance of *Happy End*.

### Wednesday March 23

The final London Sinfonietta concert of the four, with a premiere from Peter Maxwell Davies, *A Mirror of Whitening Light*. Davies's operations on more than one level take a number of different forms (naturally) and are variously deducible in different works. But either the music works for a listener or it doesn't: that's obvious enough, I suppose, even though the 'implied alchemy' involved in this piece still relies on the presence of a 'sharp listener who knows his "Liber Usualis"' (quotations from the composer's programme note). *A Mirror of Whitening Light* seemed clear in its structural outlines — perhaps even traditionally 'obvious' — and familiar Daviesish textures, yet came across as a piece of considerable power in its own way. The 'whitening' process of the title — the transformation of a base metal into gold, and by extension 'the purification of the human soul' — worked on one level for me, at least, in a piece which has a rich vein of melody running through it, though for the composer, who has seen the 'mirror' of his title in 'the great cliff-bound bay before my window where the Atlantic and the North Sea meet as a huge alchemical crucible, rich in speculative connotations', it must, as seems increasingly the case with his recent music, work on a level so far removed from that attainable by most listeners that it could be said to belong to a different world. Perhaps, indeed, it does.

To return to earth with Kurt Weill's *Kleine Dreigroschenmusik*, which concluded this final concert, the only non-vocal one of the four, was to come to a brief reconsideration of the success of this



series in presenting Weill's music. For the often less familiar, 'serious', sometimes dark works, less 'characteristic' from our, possibly very unbalanced, view of the more popular of the Brecht-Weill collaborations, the Sinfonietta players and singers engaged for these performances were ideal: the Violin Concerto, for instance (a work which I unfortunately cannot take to easily), was splendidly played by Nona Liddell as the first item in this last concert. But the presentation of the 'popular' works should surely reflect all their overtones, both subtle and unsubtle, of politics and cabaret, of musical and social distinctions of all sorts (multi-levelled, as such music must be). Here these performers, and in particular some of the singers and conductors, seemed out of their depth. And though some seemed to try hard to instil an appropriate sense of style into the music (I specially noted Benjamin Luxon in this respect, and to some extent Meriel Dickinson, both very experienced singers), the whole mode of presentation in the cool and conservative concrete confines of the QEH was against them.

But to end on a happy note: Walter Susskind, who in the last concert came nearer than any of the other conductors to the spirit of Weill, sometimes simply by not making his actual 'conducting' presence felt at all, let the Sinfonietta end the series with as precise but flexible and 'right' a performance of the *Kleine Dreigroschenmusik* as you could wish to hear, and banished all reconsiderations of this kind for at least the duration of the encore.

#### NOTES:

<sup>1</sup>Available from Arnolfini Gallery, 16 Narrow Quay, Bristol BS1 4QA. An annual subscription for six issues costs £1.50, payable to 'Arnolfini Mailing'.

<sup>2</sup>Available from Third Eye Centre, 350 Sauchiehall Street, Glasgow G2 3JD. No price or other details given.

<sup>3</sup>Details of forthcoming events and A.L.M. (Arts Lab Music) Publications available from Melvyn Poore, Music Director, Birmingham Arts Laboratory, Holt Street, Birmingham (note new address).

<sup>4</sup>From Ian Menter, 36 York Road, Montpelier, Bristol 6 or Steve Mulligan, 18 Church Lane, Clifton Wood, Bristol 8. No price or other details given.

<sup>5</sup>Dated June 12, 1977 but including a summary of a General Meeting held on July 3. Annual subscription to the London Musicians' Collective costs £1 which should be sent to the secretary, Paul Burwell, 86 Auden Place, Manley Street, London NW1.

<sup>6</sup>Cockpit Theatre, Gateforth Street, off Church Street Market, Marylebone, London NW8.

<sup>7</sup>Battersea Arts Centre, Lavender Hill, London SW11.

<sup>8</sup>Available from Universal Edition, A-1010 Wien, Bösendorferstrasse 12, Austria. No price or other details given, but possible to arrange to receive this through UE's London office at 2-3 Fareham Street, Dean Street, London W1V 4DU.

<sup>9</sup>Available from Boosey and Hawkes Music Publishers Ltd., 295 Regent Street, London W1R 8JH. No price or other details given.

<sup>10</sup>Available from Schott, 48 Great Marlborough Street, London W1V 2BN.

<sup>11</sup>Available from *Musics*, 48 Hillsborough Court, Mortimer Crescent, London NW6. UK and overseas surface mail subscription for one year (six issues) is £2.40; airmail to USA, Canada, etc. is £4, airmail to Australia, Japan, etc. is £4.50. Single copies, including some back issues, available at £0.40.

<sup>12</sup>Available from the same address as the London Musicians' Collective above, footnote 5. Subscription for three issues is £1 (UK and overseas surface mail) or £2 (airmail USA, Canada, etc.).

<sup>13</sup>Available from 7 Philpot Lane, London EC3. Subscription for twelve issues is £4.50 (UK and overseas surface mail); for airmail rates you have to write to *Impetus* enclosing an International Reply Coupon.

<sup>14</sup>For information write to Lingua Press, 6417 La Jolla Scenic Drive South, La Jolla, California 92037, USA.

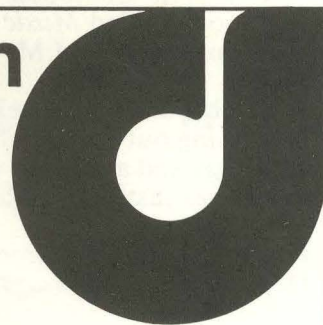
<sup>15</sup>For information write to Allen Strange, Electric Weasel Ensemble, 4 Euclid Avenue, Los Gatos, California 95130, USA.

<sup>16</sup>For a catalogue write to John Kieffer, Public House Bookshop, 21 Little Preston Street, Brighton BN1 2HQ.

<sup>17</sup>Oval House, 52-54 Kennington Oval, London SE11 5SW.

<sup>18</sup>DG 2740 153 (3-record set, £8).

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## CONTRIBUTORS TO THIS ISSUE

**Tim Souster** Composer, viola player and writer on contemporary music. Formerly Stockhausen's teaching assistant in Cologne and then composer in residence in West Berlin on the German Academic Exchange scheme. Now Leverhulme Research Fellow in Electronic Music at the University of Keele. Intermodulation, the live electronic group in which he played with Peter Britton, Roger Smalley and Robin Thompson, ceased operations last year. His new group, OdB, appears on his first commercial solo album *Swit Drimz* which has just been released by Transatlantic (TRAG 343).

**David Roberts** Musicologist. Lecturer in Music at the University of Sussex.

**Simon Emmerson** Composer, performer and writer on contemporary music. Lecturer with responsibility for the Electronic Music Studio at The City University, London. Member of Option Band.

**Paul Hindmarsh** Assistant Librarian of the Scottish Music Archive. At present completing a thesis on the music of Frank Bridge.

**Barry Anderson** Composer. Head of Music at the South Bank Institute, London, where in 1971 he set up the West Square Electronic Music Studio and Workshop. Previously associated with the Mouth of Hermes ensemble as a composer and co-director.

**Richard Witts** Wishes only to say that he lives in the Top Flat, 6 Kingston Road, East Didsbury, Manchester 20, and that he can be reached by phone during the day on 061-736 2983 and in the evening on 061-434 6340

**Alan Gillmor** Canadian musicologist and critic. Associate Professor and Chairman of the Department of Music at Carleton University, Ottawa. Currently spending a sabbatical year in France, where he is continuing his research into the work of Erik Satie.

**Jim Samson** Composer and writer on 20th century music. Lecturer in Music at the University of Exeter. His book entitled *Music in Transition: a study of tonal expansion and atonality, 1900-1920* has recently been published by J.M. Dent.

**John Shepherd** Research Fellow at the Institute of Advanced Studies, Manchester Polytechnic, where he is carrying out a research project concerned with arts in the community. Also completing a thesis on the sociology and aesthetics of music. He is a co-author of *Whose Music? A Sociology of Musical Languages*, which has just been published by Latimer New Dimensions.

**Hilary Bracefield** Recently a lecturer at Worcester College of Education and now teaches in the Department of Music of Ulster College, The Northern Ireland Polytechnic.

**Robin Higgins** Psychiatrist and musician.

**Keith Potter** Composer, performer and writer on contemporary music. Lecturer in Music at Goldsmiths' College, University of London. At present completing a thesis on aspects of 20th century musical notation. Member of a percussion duo with the composer David Jones.

**Stephen Arnold** Lecturer in Music and Director of the Electronic Music Studio at the University of Glasgow. Joint author with Graham Hair (of La Trobe University, Melbourne) of an unpublished book on the music of Milton Babbitt. Awarded a 1976 Winston Churchill Memorial Fellowship to visit electronic and computer music studios in the USA and Canada.

**Odaline de la Martinez** Cuban-American composer and pianist. At present a composition student of Reginald Smith Brindle and Elisabeth Lutyens and carrying out research into various computer music facilities throughout Europe for a doctorate at the University of Surrey.



