

## Unit Delta Plus



**Unit Delta Plus studio**

Unit Delta Plus was an organisation set up in 1966 by Delia Derbyshire, Brian Hodgson and Peter Zinovieff to create electronic music and also promote its use in television, film and advertising. The Unit Delta Plus studio was based in Peter Zinovieff's townhouse in Deodar Road, Putney, London.

In 1966 they held an electronic music festival at the Watermill Theatre near Newbury, Berkshire, England. Delia said of the event: "We had an evening of electronic music and light effects. The music was indoors, in a theatre setting, with a screen on which were projected light shows done by lecturers from the Hornsey College of Art.

It was billed as the first concert of British electronic music; that was a bit presumptuous!

John Betjeman was there... he sat in the front row and went to sleep... it was quite a social occasion."



**Million Volt Rave Flyer**

Perhaps the most famous event that Unit Delta Plus participated in was the 1967 Million Volt Light and Sound Rave at London's Chalk Farm roundhouse, organised by designers Binder, Edwards and Vaughan (who had previously been hired by Paul McCartney to decorate a piano). The event took place over two nights (January 28th and February 4th 1967) and included a performance of tape music by Unit Delta Plus, as well as a playback of the legendary Carnival of Light, a fourteen minute sound collage assembled by McCartney around the the time of the Beatles' Penny Lane sessions.

Unit Delta Plus split in 1967 after a traumatic performance at the Royal College of Art.

Here we present a full copy of the 1966 Watermill Theatre event programme... the track timings are very approximate!

UNIT DELTA PLUS

Concert of Electronic Music

Watermill Theatre, Bagnor

10th September 1966

Electronic music is made by recording onto magnetic tape, electronically produced oscillations, which, when played from the tape, are heard through a loudspeaker as sounds. Part of the equipment from which these oscillations originate is shown in the photograph. There is complete control over all musical parameters such as pitch, timbre (harmonic content), loudness, duration, time interval, impact (rise and fall time), reverberation, echo, musical scale, if any, and so on. Even after these choices are made there is control over the filtering, switching, and even over the probability (in a mathematical sense) of any or all of these parameters occurring. At times voices or other naturally occurring sounds are used in conjunction with electronic ones. The end product is a tape which is played on a tape recorder (or several tapes and tape recorders) and the sounds are heard from loudspeakers. This is the performance and there is practically never an earlier stage when the completed work is heard live. In this way there is a radical difference between a concert of electronic music and a performance given by live musicians.

The actual method of composition depends entirely on the composer, who has a free choice of scales and sounds. In this concert the choice ranges from a pop song with a conventional scale and rhythm, to 'Random Together 1' which is very unconventional in structure.

The studio of Unit Delta Plus has specialised in electronic switching arrangements to reduce the manipulation, editing and copying of tape, and also in the development of controlled randomness in certain aspects of sound. Modern electronic computer technology was used to make the machine at the far right of the photograph. With this it is possible to select randomly (or, less interestingly, sequentially) one of any number up to 32 infinitely variable pre-set tones, 32 time intervals of .01 to 10 seconds, and 32 levels of loudness. Thus any tone may be chosen randomly at any time interval, at any loudness, and these three parameters are not inter-related. However what is of particular interest is that it is possible to increase the probability of particular choices being made, so that one might choose a time interval or tone and give it anything up to a 64:1 loading in favour of it occurring. Even with this extreme loading, there is of course still a remote possibility of another time interval or tone being chosen.

The advantage of being able to predetermine the likelihood of sounds occurring and of their parameters, is that within rigidly determined frameworks there is at any one time an unpredictable result; although over a long enough period the synthesis of such results is able to be mathematically forecast. At first the validity of this method might be doubted but in fact a liberty of temporal, tonal and spatial structure is

introduced which in many pieces, paradoxically, allows more control over the total effect (e.g. 'Tarantella', 'Random Together 1', parts of 'Agnus Dei'). The listener, instead of being able to mentally forecast key or tone-row or loudness at any one point, will at the end of the piece suddenly find an overall memory of exactly these, usually predetermined, structures.

'Amor Dei'

15 mins.

DELIA DERBYSHIRE

The BBC Third Programme has broadcast a series of four 'inventions for radio' with electronic music by Delia Derbyshire and words recorded and arranged by Barry Bermange. This is a shortened version of the second of them, and is given tonight by kind permission of the BBC.

The foreground speech was recorded from life, the recordings being subsequently edited and re-arranged though not in any way electronically treated. The composition of the music was done by electronic means using voices as a basic element.

'Tarantella'

5 mins.

PETER ZINOVIEFF

This is an imitative piece. The scale used, as well as the timbre of the flute, double reed and percussion sounds, are chosen to be like those which might be used by a Central European peasant group of musicians.

The time interval between the notes is, except occasionally, rigidly set. Each of the three sound qualities has a range of one octave of 12 non-equitempered notes. At any one time for any one sound quality, the next note to be heard will be randomly one out of twelve except for a 20% probability loading in favour of the twelfth note. The loudness of any sound is randomly set between two limits.

5.

'Moogies Bloogies'      5 mins.      DELIA DERBYSHIRE

This electronic pop song is sung by Anthony Newley who also wrote the words. The piece is composed in a traditional musical way with melody, rhythm and harmony, and the musical parameters are all totally predetermined. The sources of sound are simple sine tones.

'Fragment'                      5 mins.                      BRIAN HODGSON

This piece is a spoken dialogue, illustrated by electronic sounds and by the sounds of everyday life.

'Pot-pourri'                      5 mins.                      DELIA DERBYSHIRE

Each of the short sections was composed as a piece of introductory music for the BBC, with similar rhythms, melodic intervals and sound qualities.

This was Moogies Bloogies' first and perhaps only public airing until 2001.

'Random Together 1' 20 mins.

PETER ZINOVIEFF  
and DELIA DERBYSHIRE

The piece is in three parts. The first and last will have light projection by Hornsey College of Art. The middle section will be heard in darkness and musically is derived from the other two sections. A limited number of sounds was chosen in each section and their order and coincidence were selected randomly. It was determined beforehand what the results of any such combinations might be. The levels of reverberation, the rise and fall times, and the mixing of a large number of these sounds, as well as their being recorded on one or more tracks, were also determined by probabilistic methods. The different quality of the first and last sections is due to the difference in pitch of the tones initially chosen and the probabilistic selection of time intervals, loudnesses, and switching from track to track. In this way the spatial structure is also varied. This will be especially apparent in the transition between the central section and the last section where the sound will appear from several different directions. The central section is the only one which is musically self-sufficient. The other two were composed with light projection in mind.

'Agnus Dei'

20 mins.

PETER ZINOVIEFF

This is in three traditional verses with no break between them. The second verse is a representation of confusion and is in contrast with the calmness of the last verse and the 'Miserere Nobis' of the first verse. The voice part was sung in a single continuous line by Miss Josceline Gaskell. The single voice line was then broken up and combined so as to produce ordered and disordered combinations of voices and electronic sound, on two separate tracks.

It is dedicated to the composer's younger son, Nicolas.