

Symbiosis - Electronic Music for an Analogue and a Digital Age

Ian Helliwell¹

1 THE DEMO

A reading of the submitted text accompanied by projected still images of the Symbiosis graphic score and its instructions, pages from Practical Electronics magazine and examples of electronic equipment used in interpreting Symbiosis. The final part will be a screening of a new video animation of the score featuring my own version of the 7 minute composition.

2 ABSTRACT

One of the areas covered in the Cybernetic Serendipity exhibition, was the rapidly developing discipline of electronic music. While this was concerned primarily with computer controlled sounds, the compositional end results of digital programming were not dissimilar to electronic music created via existing analogue tape procedures. Serendipitous outcomes arrived at through mistakes or unorthodox patching or programming of electronic modules, can occur with analogue and digital devices, though in 1968 at the time of the exhibition, electronic music generated with either computers or synthesizers was still in its infancy, and access to equipment was highly limited. By the early 1970s however, the development of affordable synthesizers had forged ahead, and the new instruments were increasingly accessible to people with relatively modest budgets. Although the hobbyist monthly magazine Practical Electronics (PE) had introduced PEAC, an analogue computer home construction project in January 1968 [2], electronic music making with computers was for most people still many years away. Coincidentally, the same PE issue featured a simple circuit design for building a white noise generator, described as being capable of producing, "a wide range of very interesting sound effects, many of which are of practical use in making electronic music." [1]

In 1975 PE published a feature on Symbiosis [5], an electronic music composition designed for realisation by its readers via a graphic score. The piece developed out of two construction projects - the PE Sound Synthesiser [6] and the PE Minisonic [7] - which involved electronics designer G. D. Shaw and composer Malcolm Pointon. The PE Sound Synthesiser was a monumental undertaking running in the magazine for 13 issues from February 1973, and was augmented by articles on electronic music by Pointon in his column 'Electromuse'.

Although in the early 1970s DIY synth building represented a significant saving compared to the cost of buying a commercially produced machine, the length and complexity of construction was enough to deter many electronic music enthusiasts lacking the time and requisite skills. Some readers who did commit themselves to the exacting PE project however, provided feedback on their experiences and made suggestions for possible improvements and modifications. As a result of the shared experience and knowledge exchanged between the

magazine and its readers feeding back to GD Shaw, PE commissioned him to come up with a new and more compact synthesizer project.

In scale, ambition and construction time, the Minisonic was modest and accessible, and ran over three issues of the magazine starting in November 1974. It dispensed with the by-then established convention of including a traditional piano style keyboard, and instead incorporated a 'Stylophone' type stylus based tone activation system, lending itself more towards the experimental area of electronic music in which Malcolm Pointon specialised. PE took the bold step of asking him to create a composition for the Minisonic, which could be represented in a graphic score, and realised by constructors having built their own synth.

In its encouragement for readers to get involved in not just circuit construction, but also the creative side of electronic music, PE was helping to foster an experimental approach that reached out beyond colleges and universities and into the homes of ordinary hobbyists. It provided both a way into exploring the stranger, avant-garde sounds of analogue synthesizers, as well as introducing the potential of graphic scores - especially useful for those people left behind by their inability to read conventional music notation. The score not only represented the structure, dynamics and timbres of the piece for the composer, but crucially it could also provide the listener with an engaging visual reference point with which to follow the music.

From its inception as a new art of sound composition following World War 2, musique concrete and electronic music had struggled to find acceptance with much of the British public. Writing in the Studio International special issue on Cybernetic Serendipity, published to coincide with the ICA exhibition, respected American engineer and computer music pioneer John R. Pierce (1968) stated, "The proponents of electronic music have found themselves plagued with two chief problems." [4] Besides describing the time-consuming nature of electronic composition, he stated that, "the other limitation has been one of variety of sound. However strange electronic music may sound, it seldom sounds anything but electronic." [4] This is a common theme running through much of the discourse surrounding the subject in its formative days. Rather than embracing electronic tones and encouraging experimentation, the debate often focussed on the supposed dangers and problems, and the perceived difficulties in creating the new music.

While the contributors to the music and sound sections of Cybernetic Serendipity were predominantly US based, and included Lejaren Hiller, Herbert Brun, James Tenney, Gerald Strang and John Cage, British exhibitors were led by John Lifton and Peter Zinovieff. Of specific interest here was Zinovieff's

installation which incorporated a computer system with interactive microphone input, and invited visitors to whistle a tune for the computer to analyse and play back with electronic variations. Zinovieff's south London studio housed a PDP-8/S, and was the first private facility in the world to operate a computer for electronic music composition. Soon to embark on the formation of the company EMS, which produced the first commercially available synthesizer designed and manufactured in Europe, Zinovieff and EMS were operating at the intersection of digital computers and analogue synthesizers - a hybridized approach particularly relevant to present day working methods in electronic music.

The sounds and compositions that were produced during the 1950s, 60s and 70s were too strange and uncompromising for most people when heard in isolation. And yet when listened to in conjunction with a visual stimulus or graphic representation, mainstream audiences were perfectly willing to accept all manner of weird sounds and unorthodox noises, without having to question whether what they were hearing could be classified as music. Unfortunately by the 1980s, time and technology had moved on, and the avant-garde nature of electronic sounds from previous decades was considered unacceptable in a mainstream context, and disappeared from popular culture. The traditions of piano keyboard and easy on the ear pop music once again prevailed, and progressive and innovative experiments such as Symbiosis were pushed aside and forgotten.

Their potential remains however, and Symbiosis translates easily from the 1970s into the 21st century, and invites new interpretations. While the Minisonic synthesizer is not accessible today, the piece can be effectively realised on all manner of technology, and lends itself particularly well to self-built, creatively soldered equipment and analogue synthesizers - exactly in keeping with the spirit of experimentation of earlier times. In 2017 I serendipitously received a recording of Symbiosis made by skilled electronics enthusiast Paul Williams in 1978. He was an accomplished constructor of synthesizers, and typifies the knowledgeable hobbyist, perhaps more preoccupied with building the project, rather than with subsequent creative applications utilising the finished result. Nevertheless, without having heard Pointon's original, Williams made the effort to tackle Symbiosis, and one can only wonder how many other 1970s PE readers also took up the challenge.

During research for my book *Tape Leaders - A Compendium of Early British Electronic Music Composers* [3], I made contact with Pointon's widow, and she still had most of his electronic recordings, including Symbiosis. Comparing the two 1970s interpretations suggested a contemporary reimagining and revitalisation of the piece, and I completed my version in February 2017. I then decided this could be the start of a stimulating project by inviting fellow electronic composers to make new renditions, and to date I have eight recordings. My interpretation was created using only my self-built HelliTron tone generating equipment.

REFERENCES

- [1] Bassett, A. J. 1968. White Noise Generator. *Practical Electronics*, pp. 44-45.
- [2] Bollen, D. 1968. PEAC Analogue Computer. *Practical Electronics*, pp. 36-42.
- [3] Helliwell, I. 2016. *Tape Leaders, A Compendium of Early British Electronic Music Composers*. Cambridge, Sound On Sound.
- [4] Pierce, J. R. 1968. The Computer and Music. *Studio International* special issue. p. 17.
- [5] Pointon, M. 1975. Symbiosis. *Practical Electronics*, pp. 488-491.
- [6] Shaw, G. D. 1973. PE Sound Synthesiser. *Practical Electronics*, pp. 140-145.
- [7] Shaw, G. D. 1974. PE Minisonic. *Practical Electronics*, pp. 952-958.