



Ron Who?

The 'White Christmas' of electronic music must unquestionably be the 'Doctor Who' theme, written for the BBC Radiophonic Workshop in 1962 by Ron Grainer (seen here left of picture enjoying a joke with some of his chums on the set of BBC Television's 'Maigret' series)



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in the book as far as conventional music theory was concerned. It fascinated some listeners, and it tortured others.

At the same time, devices for varying and distorting the originally simple oscillator tones, and for filtering and modulating the result, were becoming more controllable and widely available. During the 1950s, composers such as Stockhausen in Germany were busy working in small studios attached to local radio stations, producing 'pure' electronic music. In Paris, working closely with sound engineers from ORTF, the French broadcasting company, Pierre Schaeffer pioneered what he termed '*musique concrète*', collage music using everyday sound from the real world.

In America, Bell Telephone Laboratories built what was probably the first synthesiser. It took up several rooms, and its primary purpose was to study human voice synthesis. The company knew that their telephone operators, from different parts of America, frequently misunderstood each other's accents, with a consequent high occurrence of false connections and wrong numbers. They hoped, perhaps a little

optimistically for the time, that a universally accepted synthesised voice would clear up the problem. A number of today's American musicians received their basic training in electronics at that time, courtesy of the Bell company.

In Britain, similar work was being attempted, although on a less ambitious scale. Nevertheless, the BBC Radiophonic Workshop did produce one of the all-time classics of electronic music in the early 1960s — the theme music to the television series, 'Doctor Who'.

The first venture into computer music occurred as early as 1957, when Lejaren Hiller entered a set of instructions into the Illiac computer at the University of Illinois. These instructions were resolved into four groupings of technical data, which were then transcribed into musical notation. The result was a four movement work for string quartet called the 'Illiac Suite'. The music itself, though well-arranged for performance by cello, viola and two violins, sounds meandering and vague. However, it is not difficult to find other pieces of music, produced conventionally by composers of the same period, which sound a good deal worse.

A few years later, Hiller created another work, this time using the IBM 7090 computer. He designed a programming scheme called MUSICOMP (MUSIC Simulator-Interpreter for COMpositional Procedures), which allowed for greater flexibility and variety in working towards the final composition. This he called 'Computer Cantata', and it is written for a vocalist performing with taped electronic sounds. Once again, the music is intermittently interesting rather than enthralling. But Hiller had demonstrated to his fellow musicians that a computer could be effectively used in a creative way.

His work was only part of a vast amount of research carried out in American universities in the ensuing years. John Chowning, another pioneer, later used a computer to explore how sound is perceived as its source moves from one location to another. Yamaha's use of his research work has had a direct bearing on the type of synthesiser being produced in the mid-1980s.

With the exception of music for science fiction features, electronic music stayed in the realm of classical music for several years, and audiences became more aware of this change in approach and technique on the part of avant-garde composers. A typical new music concert in the 1960s would feature several performers, some of them playing conventional instruments, others involved in processing the sound from those instruments with frequency-splitting units and filters. All of the performers, including the 'technicians', would be following a score, but this score bore little resemblance to standard music notation.

In addition to novel directions like those describing microphone positions and filter variations, composers were attempting to give

Pioneering Spirit

Probably best known for his work with Roxy Music in the early seventies, Brian Eno was a pioneer in the use of early synthesisers. After leaving the band in 1973, Eno has been a major force in avant-garde and 'mood' electronic music. He has also collaborated with such well-known figures as David Bowie and Robert Fripp. Most recently, Eno has worked on television and film scores, and with his brother has been developing a score for NASA's moon landing archive film

