

A History Of Electronic Music (Part 5)

The BBC Radiophonic Workshop

by [Derek Pierce](#)



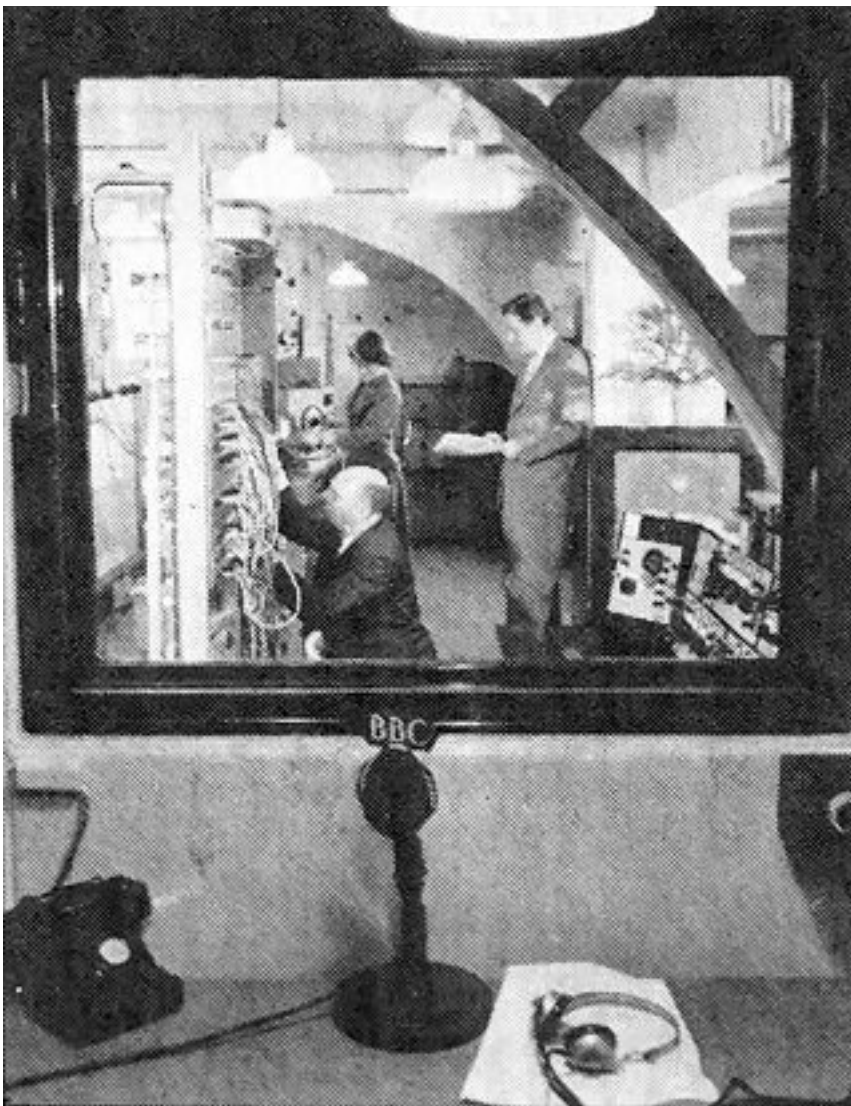
In the days before synthesisers were commercially available in Britain, the BBC's incidental music composers had to rely on their own highly developed qualities of enthusiasm and dedication, rather than sophisticated electronics. One of these composers, Daphne Oram, working with Jimmy Burnett and Dicky Bird, produced incidental music using the conventional studios late at night when they were otherwise unoccupied. Using ideas and equipment that she had developed during the previous twenty years, Daphne Oram paved the way for the 'Radiophonic Workshop'. Her imagination, foresight and knowledge of what was happening in the world of experimental and electronic music led her to try and convince the authorities of the need for an electronic music studio in the BBC along the lines of those already in existence in France and Germany. A play 'All that Fall' by Samuel Beckett, written for the Third Programme in 1956, and first broadcast in 1957, was unique at that

time in employing a new sound convention, rather than using music in its 'normal' form. Experience gained in doing the programme led to similar techniques being employed in a very different play, 'The Disagreeable Oyster', by Giles Cooper. It was a comical fantasy being extremely stylised — the radio equivalent of a cartoon film.

A 'radiophonic poem' followed. It attempted to take words and sounds specially written and described by author Frederick Bradnum and tried to build up something that could not be written on the printed page — a pattern of words which were then manipulated as sounds to illustrate these words.

These programmes paved the way and created interest in electronic music within the BBC. Daphne Oram's enthusiasm for the works of Stockhausen, Cage *et al* led to a visit in 1958 to the Brussels World Fair. Accompanying her on this trip were composers Roberto Gerhard, Humphrey Searle and Bernard Keefe. On their return they were able to convince the BBC of the need to set up a 'Radiophonic Workshop', with the aim of "developing techniques to produce electronically the special sounds and incidental music required for radio and television productions". The Directors agreed and the Workshop was started.

The original premises for the Radiophonic Workshop was in the BBC's music studio building in Maida Vale, London. They comprised one large room with a small annexe used as a studio. It was equipped initially with sub-standard semi-professional equipment such as two Moto-Sacoche 30 i.p.s. tape machines, several Ferrographs and most usefully a Reflectograph Vari-speed machine. A mixing desk was procured from the Albert Hall, utilising the then popular 'stud' faders which introduced considerable distortion into the wave forms. It was, however, replaced by one of the first desks to use 'carbon faders' in the BBC. Also at hand were a number of signal generators, a third octave filter plus a multifarious selection of sound sources including an old piano frame, a water cistern, an enormous range of bottles - in fact anything that would make an interesting noise!



The BBC Radiophonic Workshop at Maida Vale in 1958. Donald McWhinnie (right) listens to a montage of electronic effects, with Desmond Briscoe (foreground) operating filter units in association with particular oscillator sounds controlled by Daphne Oram. In the background, Richard Bird is adding artificial reverberation.

Joining the team of Daphne Oram, Jimmy Burnett and Dicky Bird on occasions was Desmond Briscoe. Products of this early team, supplemented by producers from other departments, included 'Bloodnocks' Stomach' for the Goon Show; the first electronic signature tune, 'Science and Industry' (used for many years by the BBC's World Service), and the music for 'Quatermass and the Pit'.

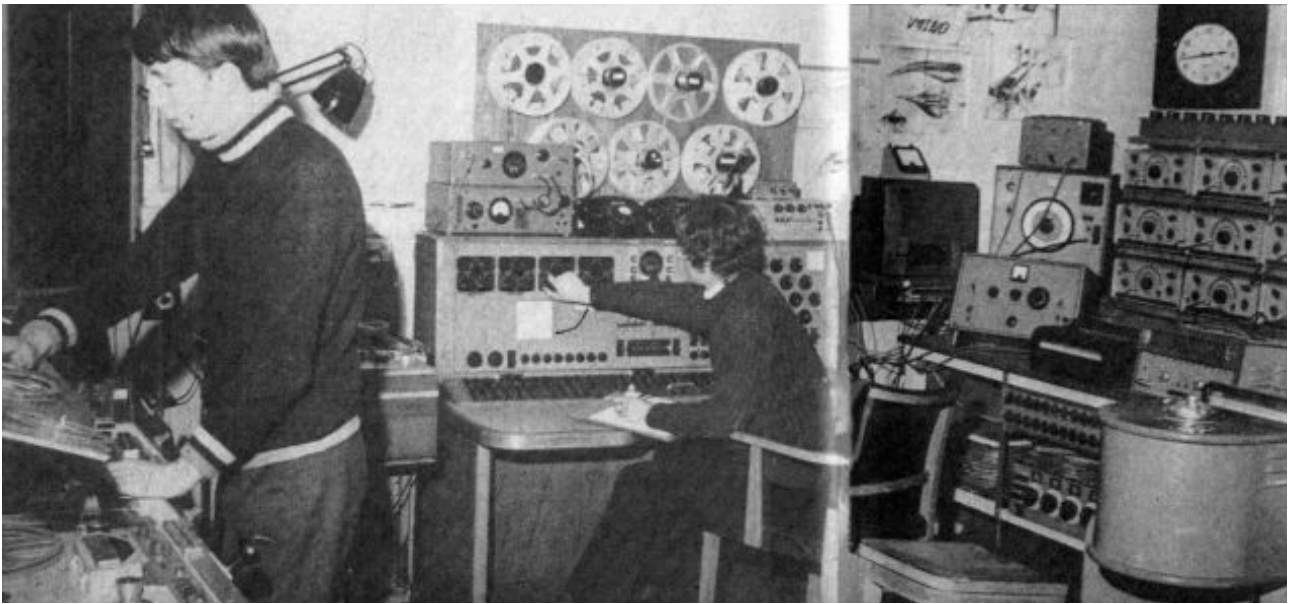
Within the following year Daphne Oram had left and a post was created for a full time Head of Radiophonics. This position was filled by Desmond Briscoe, who still occupies it today.

A technical operator, who was at that time responsible for 'Bloodnocks' Stomach', was Dick Mills, and along with Desmond Briscoe has become the longest serving member of the Workshop. Having transferred to the creative side in 1972, he's now responsible for the incidental music for 'Dr Who'.

Most of the initial output was for the Drama department. Some of the more notable pieces produced included the theme for a play entitled 'The Ocean' by J. Hanley. This was realised using the clarinet as the sole sound source. One request typical of the many they received was "to produce the sound of a rainbow" to be used in the play 'Noah'. It was synthesised by using signal generators and became one of the Workshop's first examples of additive synthesis.

Despite the lack of sophisticated equipment, imagination was never in short supply. For example, in order to overcome the lack of a multi-track facility, several Philips Pro 20 tape decks were started simultaneously and their speeds were so accurate that they remained in sync for long enough to complete the piece, during which several layers of sound were built up. With the increase in demand and the success of early work, the Workshop grew so that within three years the existing team were joined by Brian Hodgson, Phil Young, Delia Derbyshire and John Baker.

In 1963 the BBC had planned to start a short series entitled 'Dr Who'. The producer needed a signature tune, and having given due consideration to the science fiction nature of the programme he decided to employ the services of the Radiophonic Workshop. Together with the composer Ron Grainer, new recruit Delia Derbyshire and engineer Dick Mills, they created the most familiar piece of electronic music in this country, the 'Dr Who' theme. Although the theme music has been revised from time to time, the programme still continues to attract science fiction viewers. The team also produced signature tunes for programmes as diverse as 'PM' (a news programme), 'Choice' (consumer affairs) and 'Womans Hour'.



An early workshop studio in operation.

By 1962, a Levers-Rich multi-track variable speed tape deck had been pressed into service, but although too noisy for multitracking, its 2-40 i.p.s. speed variance was useful. By the use of keys it was possible to alter its speed in semi-tone intervals enabling it to be played much like a keyboard. Gradually equipment and innovations grew, enabling even greater possibilities to emerge. Carbon faders replaced the noisy studs, 18 oscillators used via simple envelope generators provided a useful sound source, especially when played via a keyboard arrangement. (See early workshop photo, far right of the picture on bench.) It wasn't until 1968, however, that they received their first synthesiser, the EMS VCS3, developed by Peter Zinovieff. This addition of a synthesiser speeded up the turn around time for a composition, something which was to prove very useful in this ever popular department. They were being employed more and more, both for television and radio work.



The EMS Synthi 100.

The need for some form of sequencing led to the development of the Synthi 100 (see photo above), a computer driven synth capable of storing 256 bits of information on each of its eight sequence tracks. As is usual, needs gave rise to developments, one of which was to prove both fascinating and unique – a mixing desk was built which combined both the 'pan-pots' and level faders, and this enabled the movement of images within the stereo mix to be made considerably easier than was previously possible. With the knowledge and experience that they gained it is not surprising to note that composers of the Radiophonic Workshop were quite often involved with extra mural activities. Delia Derbyshire and Brian Hodgson, working in conjunction with David Vorhaus, produced one of the most interesting and unusual rock records to be released entitled, 'An Electric Storm', under the name 'White Noise'¹. It contains a lot of innovative material with some almost 'disturbing' tracks (particularly side two which consists of two tracks: 'The Visitation' and 'Black Mass: Electric Storm in Hell'). The production on the album was credited to 'Kaleidophon' which proved to be an enduring studio set-up run by David Vorhaus, who has since released two other 'White Noise' albums. (See E&MM feature in June 1981.)

Personnel changes in the early seventies include the departure of Brian Hodgson, Delia Derbyshire and the arrival of Malcolm Clarke, David Caine, Peter Howell and Paddy Kingsland. Brian Hodgson returned in 1977 to become organiser of the Radiophonic Workshop. Paddy Kingsland was formerly a tape editor, then studio manager, chiefly for Radio One. He is a firm believer that instrumental sounds combined with electronics are essential for signature tune composition.

Peter Howell realised 'Greenwich Chorus', utilising 'ticking clocks' recorded at Greenwich Observatory as well as 'voices' created through a vocoder. In the title music for 'Merry-Go-Round' he uses a simple synthesiser line with syncopated echo. He adopted a completely different approach to that employed by David Caine, who was involved with the production 'The Seasons — Drama Workshop'², noted for its musical portrayal of the months of the year and the seasons.

Although its primary role is to service the various production departments in the BBC, the Workshop had begun to devise its own productions by 1979. To celebrate their 21st anniversary they broadcast 'We also have Sound-Houses', a history of the Radiophonic Workshop. The title was being taken from 'The New Atlantis', Francis Bacon (1624), in which Bacon describes the concepts developed by the Radiophonic Workshop. RW producers have won a number of major awards, with Desmond Briscoe winning three for his 'A Wall Walks Slowly' and Malcolm Clarke gaining an award for 'August 4th 2026'.

On the technical equipment front, things improved dramatically, the Workshop went 16 track in 1977, and gained the following equipment to date: a Roland Jupiter 4, Prophet 5, Yamaha CS80, Oberheim and of course the Fairlight CMI.

Since 1958, the Radiophonic Workshop has made a slow but steady development in its range of work extending its facilities and output. Its producers read like a Who's Who of British Electronic Music, but

it has often not received the credit due to it. Examples of its output can be found on the records listed below.

Daphne Oram's original idea has led to an expansion of the horizons of electronic music in this country. She was approached by various rock groups in the sixties, to help provide both the information and equipment necessary for the electronic revolution within rock music. Her contributions to electronic music have undoubtedly been underestimated by the public at large.

Further information on the Radiophonic Workshop is given in E&MM March 1981.

Discography:

White Noise 1. ILPS 9099 Island Records.

The Seasons - Drama Workshop. REC 7.

Radiophonic Music 21st Anniversary. REC 354.

Through the Glass Darkly. Peter Howell. REC 307.