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Daphne Oram's Oramics Machine to go on display

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BBC News

The Oramics machine, one of the most significant devices in the history of electronic music, will go on display at the Science Museum for the first time this summer.

It is the creation of Daphne Oram, the first director of the BBC's Radiophonic Workshop and a central figure in the evolution of electronic music.

Ms Oram, who died in 2003, had created a device which enabled musicians to "draw" sounds.

Built in the 1960s, the Oramics Machine is significant because it made possible not only the creation of synthetic sounds but also their arrangement.

Tim Boon, chief curator of the Science Museum, told BBC Radio 4's PM programme that the machine was "one of those half dozen objects in a career" which a curator feels they must add the museum's collection.

They have been working to conserve the machine but have decided it is too fragile to try and restore to working order.

However, an iPhone application simulating the Oramics machine is under development by Soundandmusic.org and Goldsmiths, University of London to coincide with the Science Museum exhibition.

Drawn Sounds

The Oramics Machine is currently being conserved in a Science Museum storage facility in West London.

It sits in the corner of a large room filled with artefacts from our scientific past: a device for recording brainwaves, an artificial lung and a template used in the building of the Great Eastern ship are just some of the objects sharing space with the machine.

But even in surroundings crowded with scientific equipment the Oramics machine stands out.

It is the table sized input device that first catches the eye.

It is here that compositions could be created using the machine by drawing or painting on strips of 35mm film.

Dr Mick Grierson from Goldsmiths, University of London is director of the Daphne Oram Collection.

"It represents the first time in England that someone had built a device that was capable of synthesis and composition at the same time," he says.

As the strips passed over light sensitive elements, the marks on the film would be read altering aspects of the sound, such as a pitch and volume.

In another part of the machine painted glass slides are used to generate new sounds.

Superficially, the strips of film, one above the other, resemble the tracks of modern audio editing and music software.

Sarah Angliss, an engineer and electronic musician, finds the physicality of composition on the machine appealing.

"It's almost like a missing link, it's very physical and at the same time there's a very strong family resemblance to the software people like me use every day."

Uncharted waters

Engineer Graham Wrench did much of the work on the machine's innovative electronics.

"The Oramics machine tried to put the composer or artist very much in control," he told the BBC.

"As far as the electronics were concerned Daphne gave me a completely free hand."

Mr Wrench says he found working with Daphne Oram "inspirational" but they often debated late into the night how to proceed with only "limited resources".

The tight budget seems to have required some skilful improvisation: some of the machine is housed in an old commode, while a cannibalised broom handle forms part of a tensioning mechanism.

Mr Wrench had to adapt ordinary transistors because they could not afford purpose built photo-transistors.

But in spite of the challenges, Mr Wrench relished the time he spent working on the machine.

"I was entering into uncharted waters that I found absolutely fascinating."

Oramics legacy

For all the challenges faced in its construction, the machine and the music

produced using it have had a lasting influence on subsequent electronic musicians.

"The music is inspired and ahead of its time," says Dr Grierson, adding that the Oramics machine has "had a direct impact on the work of other people in Britain making synthesisers".

Ms Angliss says that Daphne Oram's music remains relevant.

"She was thinking about sound in very much the way we think about sound today."

The exhibition will acknowledge this legacy, putting the machine in the context of the development of electronic music in the UK.

It's a fitting tribute according to Mr Boon, in his view Daphne Oram is one of a small handful of people "who in the second half of the 20th century more or less invented electronic music".

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