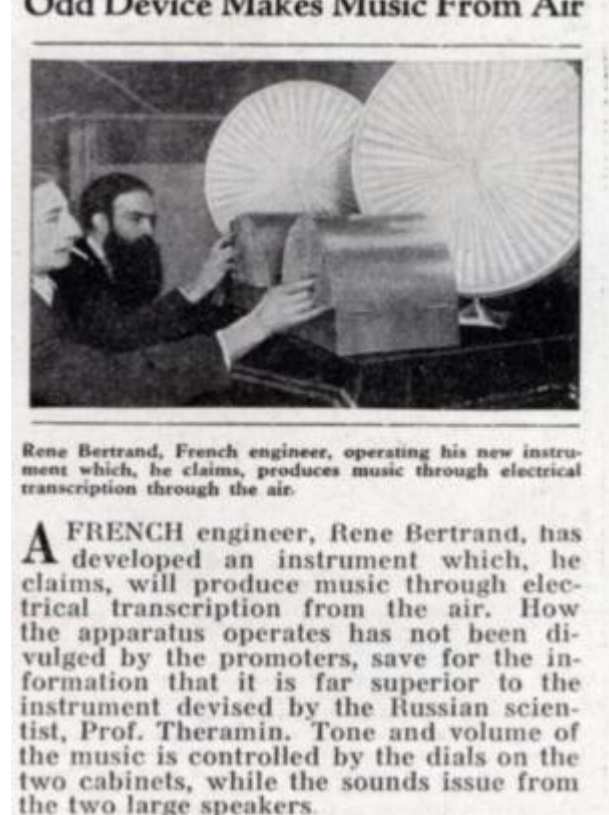


The 'Dynaphone', René Bertrand, France, 1927



The French electrical engineer René Bertrand, who had been experimenting with electronic instruments as early as 1914, was a long time friend and collaborator with Edgard Varèse and with Varèses support Bertrand developed the “Dynaphone” (not to be confused with Cahill’s “Dynamophone” or “Telharmonium”). The Dynaphone was a portable, monophonic non-keyboard, dial operated vacuum tube oscillator instrument. The instrument was semi-circular in shape with a diameter of 30 cm played on top of a table. The Dynaphone belonged to a family of dial-operated non keyboard electronic instruments developed around the 1930 s such as Mager’s ‘Spharaphon’.The right hand controlled the pitch using a circular dial on a calibrated disc (cardboard cut-out templates of music could be inserted). The total rotation of the dial was equal to seven octaves but only the five highest or lowest could be selected at any one time by the means of a switch, giving an overlap of three octaves common to both ranges. Vibrato effects could be added by moving the right hand to and fro slightly and the machine also included a push button for articulating the sound. The left hand controlled the volume and timbre – described as similar to a cello, low flute, saxophone or french horn.



A later development of the Dynaphone (known as the ” Radio-electric-organ” used a five octave keyboard on which the note played could be doubled at the fifth and octave.The first public demonstration of the instrument in 1928 was a performance of Ernest Fromageat’s ‘Variations Caractéristiques’ for six Dynaphones and later in ‘Roses de Metal’ a ballet by the swiss composer Arthur Honegger

In 1932 Varèse applied to the Guggenheim memorial fund for a grant towards continuing the development of the Dynaphone:



Edgarde Varèse

“ ..The Dynaphone (invented 1927-28) is a musical instrument of electrical oscillations similar to the Theremin, Givelet and Martenot electrical instruments. But its principal and operation are entirely different, the resemblance being only superficial. The technical results i look for are as follows:

- To obtain pure fundamentals
- By means of loading the fundamentals with certain series of harmonics to obtain timbres which will produce new sounds.
- To speculate on the new sounds that the combination of two or more interfering Dynaphones would create if combined as one instrument.
- To increase the range of the instrument to reach the highest frequencies which no other instrument can give, together with adequate intensity.

The practical result of our work will be a new instrument which will be adequate to the creative needs of musician and musicologist ..”

Despite Varèse’s assertions, the Dynaphone was not distinctly different from its close competitors and the Guggenheim Foundation did not sponsor Bertrands work despite several further attempts by Varèse.

In 1941, Edgard Varèse, in the hope to resume his **collaboration** with **Léon Theremin**, wrote him the letter reported below (courtesy of **Olivia Mattis**), but the inventor wasn’t able to read it until 1989, when musicologist Olivia Mattis, during an **interview** with Theremin (first emerged from Russia after 51 years), presented a copy of it. The letter is dated May 5, 1941.

Dear Professor Theremin,

On my return from the West in October I tried to get in touch with you. I wanted very much to see you again and to learn of the progress of your work. I was sorry – on my account – that you had left New York. I hope that you have been able to go on with your experiments in sound and that new discoveries have rewarded your efforts.

I have just begun a work in which an important part is given to a large chorus and with it I want to use several of your instruments – augmenting their range as in those I used for my Equatorial – especially in the high range. Would you be so kind as to let me know if it is possible to procure these and where and in case of modifications in what they consist. Also if you have conceived or constructed new ones would you let me have a detailed description of their character and use. I don’t want to write any more for the old Man-power instruments and am handicapped by the lack of adequate electrical instruments for which I now conceive my music.

Mr. Fediushine has kindly offered to forward this letter to you.

Please let me hear rom you as soon as possible.

With cordial greetings and best wishes in which my wife joins me,

Sincerely,

Edgard Varese

P.S. If any of your assistants or collaborators are continuing your work in New York would you kindly put me in touch with them.

Sources: