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Jean-Jacques Perrey and the Ondioline

Since its appearance in the first decade of the 20th century, electronic music has touched all aspects of musical expression, from self-conscious art-music to lighthearted and intuitive musical entertainment. Jean-Jacques Perrey is a pioneer of popular electronic music. His career began in France, where he appeared with such stars as Edith Piaf, and has continued in America. Many of his records have been rereleased around the world in the past year. This interview was conducted in November 1993.

Fourier: When did you first became interested in sound?
Perrey: When I was born. But I developed the sense of listening to music at the age of four, when I received an accordion as a gift from Santa Claus. I was so intrigued by the sound that I started to play immediately.
Fourier: When did you first become interested in electronic music?
Perrey: In 1952, I was a medical student in Paris. Then I met George Jenny, the inventor of the Ondioline.

The Ondioline

Fourier: Tell us about the Ondioline.
Perrey: The Ondioline was the first electronic music instrument invented after the Ondes Martenot. The advantage of the Ondioline is its timbral flexibility; one can reproduce closely the sound of melodic instruments, such as the oboe, cello, and violin, as well as a wide variety of electronic timbres. Many composers have written music for Ondioline performance, including [Arthur] Honegger and [Darius] Milhaud. It is a monodic vacuum-tube instrument, whereas today's synthesizers are polyphonic and designed around digital circuits. Therefore, the Ondioline is considered passé by some.
Fourier: Yet when I listen to recordings of the Ondioline, I hear sounds that would be difficult to reproduce with current synthesizers. What is the principle of sound production in the Ondioline?
Perrey: The Ondioline is based on a multivibrator oscillator circuit, producing a pulse-like waveform that is fed through a series of discrete filters (Figure 1). These filters, the switching controls, and the continuous analog controllers are the key to the tremendous variety of timbres obtainable with the Ondioline. When I first saw the instrument, I knew immediately its potential in comparison with the Ondes Martenot, which offers only four or five timbres.
Fourier: It seems an unusually expressive instrument. How do you control the Ondioline?
Perrey: The keyboard is expressive in two directions: up and down for the attack characteristic, but also from left to right for vibrato (Figure 2). This is the reason I can make convincing imitations of string instruments, like cello, with vibrato because my finger motions create the vibrato just as they would on a string.
Fourier: How do you change the timbre of the instrument?
Perrey: The Ondioline has a unique sonority. There are many parameters of tone quality. The keyboard has three octaves, but there is a register button to shift the octave as one plays. With this button, you can play in a six-octave range. But the key to this instrument is that you can filter the sounds by a series of buttons. There is also a distortion control. Some combinations of these buttons imitate existing sounds, and others synthesize new sounds.
Fourier: Tell us about George Jenny.
Perrey: George Jenny was a visionary—both an engineer and a musician. He invented this instrument in a tuberculosis sanatorium where he was being treated. He was forced to rest, but he could use his mind and his hands to invent. When his instrument was finally presented to the Paris In-

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Figure 1. Simplified Ondioline circuit. The resistances R5 through R40 are supplied by the keyboard. The keyboard is explained in Figure 2.

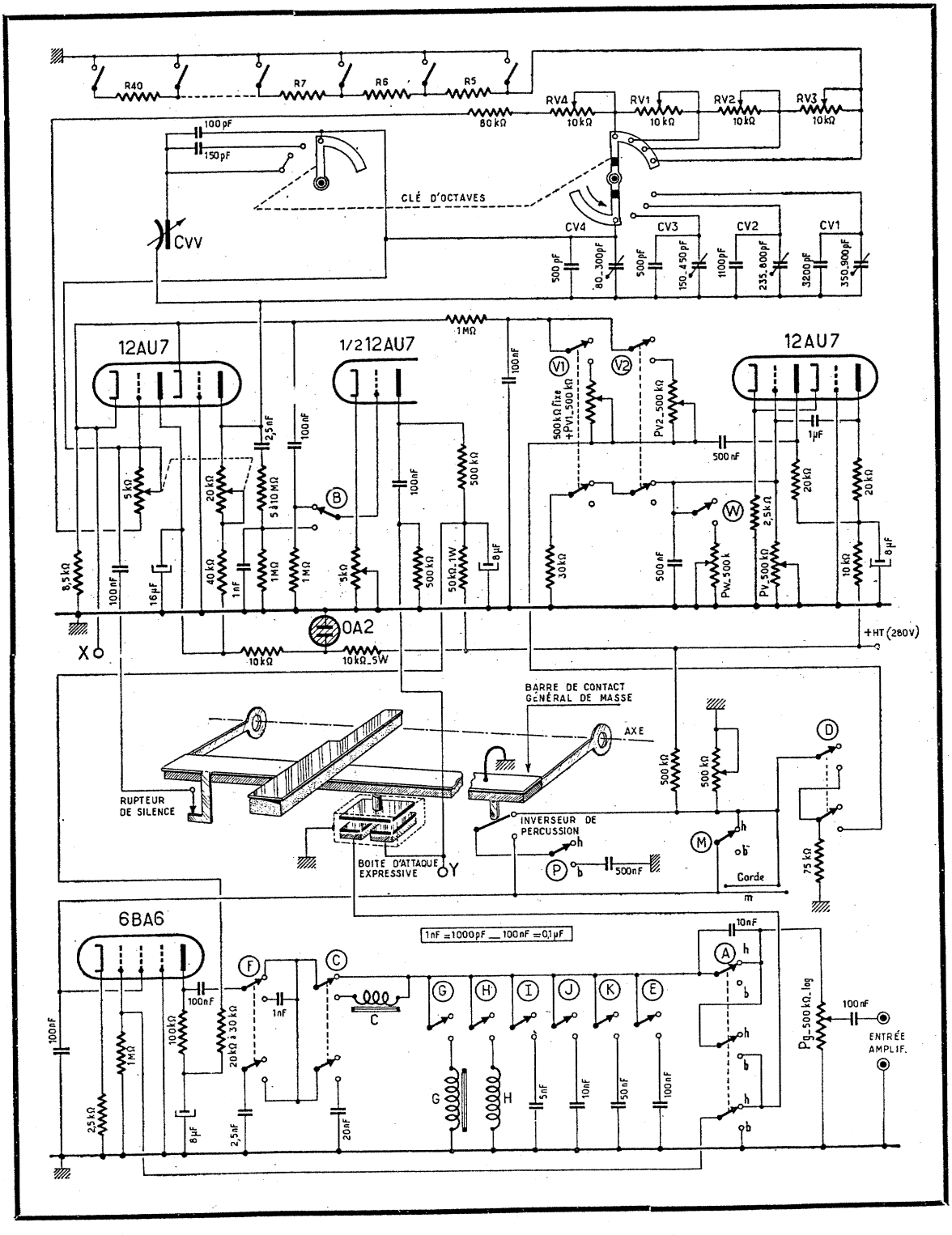


Figure 2. Technical principle of the Ondioline keyboard. (Left) The entire keyboard is small and light and is suspended on springs. With lateral motion on a key, the keyboard slides accordingly, varying a condenser that, in turn, effects a frequency modulation or vibrato effect. (Right) The Ondioline generates note intensity as a function of pressure applied to a key in combination with the position of a knee lever.

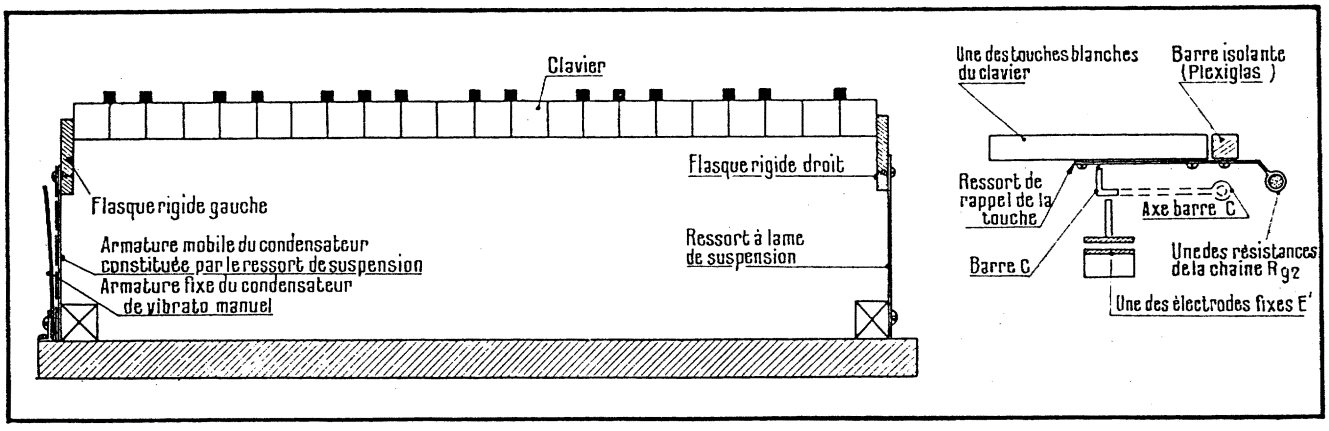


Figure 2

dustrial Fair in 1949, it won the Grand Prize. From that point, he started as an artisan to manufacture the instruments one by one. I helped him to promote this instrument at other exhibitions around Europe.

Fourier: What was the reception of the general public to this instrument?

Perrey: The Ondioline is a small instrument, so I could play with the left hand on the piano and with the right hand on the Ondioline just below the piano keyboard (Figure 3). If you close your eyes, you can imagine two musicians playing at the same time. Audiences were amazed. Many people wanted to buy the instrument, but Jenny could produce at most five instruments per month. He made them all himself, but the demand was such that he had to hire a team of people so he could produce 20 instruments per month.

Fourier: How much did it cost to buy an Ondioline in the 1950s?

Perrey: About $400.

Fourier: So this was a low-cost instrument. How many did he sell?

Perrey: Eventually, he had to arrange for a factory to help make the instruments. Over a thousand instruments were sold in the USA alone. Unfortunately, to keep the cost low, the quality of some of the components was not high, and after a few years, the instrument became unplayable if it was not maintained.

Figure 3. Jean-Jacques Perrey playing the Pianoline, a preset version of the Ondioline that was meant to be played alongside a piano.

Figure 3

Electronic Cabaret

Fourier: You developed a cabaret act based on the Ondioline, which you performed at New York's Radio City Music Hall, among many other venues.

Perrey: Yes, I called this act "Around the World in 80 Ways," after the Jules Verne novel. Thanks to the Ondioline, I could imitate instruments from around the world, such as bagpipes from Scotland, American banjo, Gypsy violin, soprano voice, Indian sitar, and so on. I made a world tour in music and finished it with a gag of whistling a tune. At the end, the whistling was still going on (thanks to

the Ondioline), but I was drinking a glass of water. We all laughed.

Fourier: I understand that you performed this act on voyages of the ship SS France.

Perrey: That is correct. When I first went to the USA, I had to fly and was sick. But I found a way to travel from France to the USA for free just giving my act three times during the voyage: first class, tourist class, and for the crew. The act was bilingual (French/English) and was very successful. That is why I could travel often. "Please be our guest," they would say. So I made 22 round-trips on the SS France—always first class and very good treatment!

Fourier: At one point, you had an international hit record with the Ondioline, performing with French singing star Charles Trenet.

Perrey: Charles Trenet saw me on French television and called me, saying that he wanted my sound on his next record. He was looking for an ethereal quality for his song Âme du poète (Soul of a poet). Of course I accepted, and I went into the studio, playing alongside Django Reinhardt! There were no tape recorders; we were recording directly to vinyl. The first one was the good one. After that, I recorded many other songs with Trenet.

I had another hit record on the American charts in 1970 called *Passport to the Future.* This was co-written with Angelo Badalemente, who is now known for his soundtrack work with David Lynch, including the film *Blue Velvet.* At one point, this instrumental rose higher in the charts than Dean Martin, Joni Mitchell, or the Beach Boys! [Note: *Passport to the Future* appears on the album *Moog Indigo,* Vanguard Records VSD 6549.]

Fourier: When did you meet the famous artist Jean Cocteau?

Perrey: It was very strange. I was performing at a cabaret in Paris, and after my act I went to another club. The famous Jean Cocteau was also there, and like me, he had just come from the same cabaret! At the bar he asked me to come to his table, where he told me, "I liked your act, but if you want to become popular, you must go outside of France because you will not be recognized here. You must go to the United States." I was hesistant, since this seemed difficult to arrange. He said, "Don't worry, it will come this year." Curiously, shortly afterward I remet the great Edith Piaf, who invited me to perform with her at the Olympia Theater in Paris. I had first met her in 1954, when she wanted to buy an Ondioline.

Fourier: The singing star Edith Piaf wanted to buy an electronic music synthesizer?

Perrey: Yes, and she did buy it! But this time she needed an accompanist. I melted and stayed with her for three months. Like Cocteau, with whom she was close, she told me that I had to go to America. One day she said, "I am going to make a way for you to travel to the United States." So she booked a recording session for me at the Pathé Marconi studio in Paris. Edith was very demanding as a producer—a perfectionist. She made me do things over and over again. After the session, I was completely fatigued. She gave me the address of Carroll Bratman in New York and said I should send the tape to him. After a few weeks, I received an answer. There was no letter, just an airplane ticket with an open return date and the word "COME!" written on the envelope. I stayed in America for 10 years. I am sure Cocteau and Piaf conspired to make this possible.

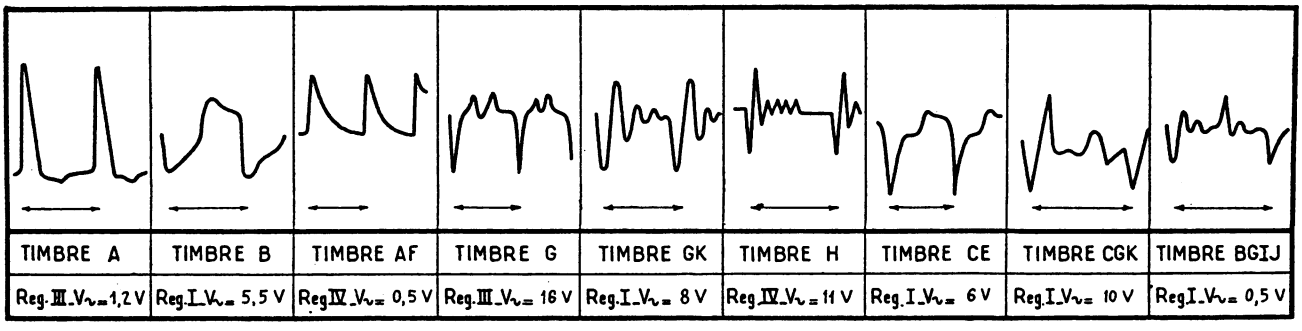
Fourier: Once you arrived in New York City, your immediate project was to demonstrate the Ondioline to the American public. What were some of your experiences?

Perrey: The first time I performed in public was for a popular NBC television program called The Jack Paar Show [the precursor of The Tonight Show]. I am susceptible to a little stage fright, but this time it was multiplied by a thousand. It was a talk show, so I tried to be funny, telling American jokes with my French accent. To my relief, they laughed and were very receptive. They also were interested in the instrument because it was not known in the United States. As a result of that one program, I received hundreds of letters, many asking for information on the Ondioline. And Carroll Bratman saw for the first time that it would be possible to sell the Ondioline in America.

Fourier: What did this lead to?

Perrey: Carroll Bratman's main business was renting instruments and audio equipment to studios

Figure 4. (Top) Representative waveforms generated by the Ondioline. (Bottom) Jean-Jacques Perrey in performance with the Dick Schory Orchestra, Symphony Hall, Chicago, 30 June 1964.



and theaters. When he saw the potential of the Ondioline and my desire to create electronic music, he built me an experimental music studio containing every electronic music instrument that was available on the market—including, among others, an Ondes Martenot, a Trautonium, and later of course a large Moog synthesizer. This gave me a chance to learn each instrument in detail.

One night I had an idea. I said to myself, "It is nice to make music with electronic instruments, but you must go further." I came back to the studio in the middle of the night and started to assemble rhythmic patterns based on *concrète* sounds—animal cries, industrial noises, whatever. It was the beginning of a new direction, my new sound.

Fourier: What did you do with this new sound?

Perrey: In the America of the 1960s, you must realize that advertising agencies were very open to innovative sounds. So at first, I used this new sound in television commercials. We made an extremely wild sound track for a Volkswagen television commercial. After that, I met Gershon Kingsley, who had already made one album with Vanguard Records. He was very interested to work with me on another album. We made two records together. *In Sound from Way Out* used my system of *concrète* rhythmic patterns and the Ondioline. For *Kaleidoscopic Vibrations*, we mainly used the Moog synthesizer. We also worked on music and sound design for commercials, and together we won a Clio award in 1968.

Fourier: How did your fellow musicians and composers in the realm of "serious classical music" react to your electronic music experiments?

Perrey: The reactions were very diverse, depending on the temperament of the person. For certain close-minded individuals, my music was an irritation, and my style was "disturbing" in comparison with traditional means of expression. In contrast, and in full compensation, certain great musicians of open spirit, such as Georges Auric and Leonard Bernstein, were at first amused, then engaged, and finally enthusiastic! Believe me, this was very comforting. I did not have to suffer too much from the curmudgeons (Figure 4).... Just think of the difficulties Adophe Sax had to endure in the 19th century in order to convince the musical world of the merit of his saxophone! At that time, it was considered a strange hybrid.

Fourier: What do you think of the development of electronic instruments since the 1960s?

Perrey: The present generation of electronic instruments is the product of ever-increasing technological development. Therefore, these instruments are technically more powerful and complex. Three decades ago, we were enthralled by the sounds of the Ondes Martenot and the Ondioline, which are relatively simple designs from a purely technological standpoint. Now we live in the era of digital computer music, a great advance in many respects. And yet there is much work to be done, especially in the domain of what one might call expressive feeling. The question is how to make instruments that are highly expressive—regardless of their underlying technology. Where to find this "magic" quality? Perhaps in a sensibility that has been lost. We must return to this sensibility in order to have instruments that speak to the heart and soul of the listener. The new generation of creators must cultivate a taste for hard work, to do it themselves, and not let the machine (or the manufacturer) decide for them!

Flight of the Bumblebee

Fourier: *Kaleidoscopic Vibrations* features a unique realization of *Flight of the Bumblebee* by Nikolay Rimsky-Korsakov. How did you realize this interpretation?
Perrey: For this composition, I took a Nagra tape recorder to an apiary in Switzerland to record the live sounds of bees buzzing about their hive. I took these bee tapes back to New York, where my studio had a variable-speed tape recorder. Using this machine, I transposed the bee buzzes to the subdivisions of the 12-tone equal-tempered scale and rerecorded them on another tape machine. Then, using manual splicing techniques, I edited the melody for one verse. Just this part took 52 hours of splicing work. People told me that I was crazy, but I told them to listen to the result! We added an accompaniment to the melody, recreating the *Flight of the Bumblebee* played by living bees.
Fourier: I understand that your composition with Gershon Kingsley, *Baroque Hoedown*, is featured daily at Disney amusement parks in the USA, Japan, and France. How did you meet Walt Disney?
Perrey: Walt Disney was a master—one of my paragons. We met on a television stage in Los Angeles. He was very interested in my performance with the Ondioline. He said I must continue my research with the sound of this instrument. He was also quite enthusiastic about my rhythmic looping technique using *concrète* sounds, which he told me to take even further. Indeed, I would like to extend this method using pitch-shifting to create scales based on *concrète* sounds whose envelopes do not change when they are transposed. Disney also encouraged me to continue my research in creating sound complexes for medical purposes, to induce relaxation in stressed individuals.
Fourier: Your music is being reissued around the world. Why has your music endured?
Perrey: I believe it is still played because it is not tied to a particular time and place. Disney told me that his films are designed according to a similar principle. He said my music must not reflect a particular date. It has to be timeless. I will always follow his advice. In my future projects, I want to create a music that has no time, that can be played centuries from now or that could have been played in the past.

Sound for Insomniacs

Fourier: You were trained to be a medical doctor. Tell us about your experiments in applying sound to the human body.
Perrey: In the 1960s, I had the good fortune of meeting scientists who were interested in the possibilities of using electronic sound for psychomedical purposes. Together we had the idea of creating sound complexes to induce calm in disturbed, agitated people. We created a team of researchers: acousticians, medical doctors, physicists, psychiatrists—a total of nine in all. I was the catalyzer, the musician. We spent many hours making experiments to determine which sounds would induce a state of serenity and calm. After a long period of research, I finally released my first sleeping disk: *Sound for Insomniacs*.
Fourier: In what year did this appear?

Perrey: The first recording was released in 1964. Later, we went to Chicago to test our sounds in psychiatric hospitals. I have continued to refine this concept, and in 1988 I made another realization based on this research.

Fourier: What are your current projects in the domain of sound applied to the human body?

Perrey: We must recognize that there is first of all a differentiation based on culture. Latin Americans do not hear the same way as the Japanese do. One of my projects is to develop a series of recordings tailored for cultural groups, adapted to the thresholds of hearing specific to their ambience.

Fourier: How do you realize these sound complexes

Perrey: This is a complicated procedure that involves the coordination of many parameters simultaneously. We start from sinusoidal or near-sinusoidal oscillations combined into specific harmonic beating patterns, all at particular frequencies. These elements must be structured into a particular class of rhythmic progressions, and all these ingredients interacting induce the correct state into the region of the brain associated with sleep. One of the secrets of this research is that it all began with experiments on the reactions of dolphins to sound.

Provided that I can obtain the means to continue this research, I would like to use the results of my previous work that are already recorded, but integrate them into new patterns using present audio technologies. I am searching for the means to realize this vision. The project must be accomplished quickly because the world is now dying—through environmental and mental pollution. It is, if you will, my mission. I must reawaken the people. This is my project if God will give me the years to actualize it! And this mission has another side: to create a new language for the future based on humor in music.

Fourier: Tell us about your philosophy of humor in music.

Perrey: I think that humor will save the world, and I say this in all seriousness. Humanity is running out of steam. Due to enormous problems of human overpopulation, all life on Earth is overstressed. Tens of millions of people are completely lost. They cannot recognize the correspondence between their soul, their mental state, and their body. A multiplicative factor is a media that promotes an ever-increasing diet of violence and destruction. It is not the fault of the people who watch it. This is a kind of automatic process. It is urgent to promote a positive attitude of well-being, and I think this can be found most easily through humor.

Fourier: What would you say to people who argue that the world has serious problems that should be approached in a serious way?

Perrey: The serious problems must be approached with humor. And humor must be approached very seriously.

Fourier: A final word?

Perrey: I am impatient to get into production. God help me to do that!