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## Paetzold Recorder Investigation for Music with Electronics



The Paetzold square recorder was developed to offer amateurs and professionals a cheap instrument with a sound more stable than the one of traditional recorders. In fact, not only the Paetzold square recorder meets these requirements, but it has an extremely rich palette of sounds, which makes it a very interesting instrument for contemporary music. Up to now, its acoustic characteristics have hardly been explored and what's more, never documented. Composers who know the instrument, compositions which really exploit its richness and interpreters who play these compositions are very few.

The recorder, instrument par excellence of the Renaissance and Baroque period, fell into complete disuse in the 19th century, following an important change in musical aesthetics. It was not before the 20th century that it was rediscovered: within the scope of the historic Aufführungspraxis on the one hand, and within the scope of the contemporary music on the other hand. Its large palette of noises, whistles and rustles, the delicacy of its tonal and dynamical nuances, its multiphonics, glissandi and flageolets attracted 20th century composers and were source of inspiration. New playing techniques were developed and recorder builder tried to improve the instrument.



This was the situation when the German recorder-builder Joachim Paetzold, inspired by organs which combine square and cylindrical pipes, had the idea, at the end of the 1950ths, to build a square recorder. He wanted to develop an instrument which was easy to play over two octaves and mainly cheap. His plywood prototype “happened to turn out well”, as he said, and this first success encouraged him to go on with his experiments. At the beginning of the seventies, Joachim Paetzold built an improved c bass and in 1975, together with his nephew Herbert, he tried to develop an f double-bass. Herbert who was neither instrument-builder, nor musician, but electro-technician and joiner, contributed to the development of the new recorder without prejudices and without being influenced by the traditions of historical recorder-building. In 1976 the first Paetzold square recorder was

patented and immediately convinced professional musicians who tried it: in 1977 Frans Bruggen ordered three instruments for his trio “Sour Cream” with Walter van Hauwe and Kees Boeke. Aware of these questions and convinced of the importance of an enlargement of the contemporary recorder repertoire, Antonio Politano who recorder professor at “Conservatoire de Lausanne” has been active for years to give rise to the composition of new, interesting pieces for Paetzold recorders and live electronics. Many of [the pieces composed up to now for Paetzold recorders](#) are dedicated to him. Unfortunately, these “made-to-measure” compositions are often too difficult for other recorder players. Besides, Antonio Politano finds it regrettable that so few contemporary composers know the Paetzold square recorder, that its rich sound palette is so seldom well-displayed and that the possibilities of live electronics (interaction between instrumentalist and computer) are so little exploited.

This is the context in which the research project PRIME of the “[Conservatoire de Lausanne](#)” has to be seen.

Despite the interest improvisation presents because of its spontaneous, expressive and personal aspects, one is forced to admit that it does not lead to any real musical developments. As Berio said in 1980 in his talks with Rossana Dalmonte: “[...] Normally, improvisation acts on the level of instrumental practice and not on the level of musical thought. [...] I don’t think that a musical thought might need improvisation to develop, to show up or to be helpful to others, in one way or other. It needs more stable, more refined, more filtering means, which can be notated more safely. ... This does not prevent quite surprising things to happen [in an improvisation], but there never happens anything really new, even by chance, musically speaking” (pp.114-115).



Up to now, only two musicians are known to have seriously explored the Paetzold recorder and worked on a link between this acoustic instrument and electronics. The first one is Michael Barker, professor at the Royal Conservatory of Den Haag, who, in 1986, had the idea of connecting a Paetzold recorder to an electronic system. Having big square keys and plenty of flat surfaces, the Paetzold recorder is optimal for the installation of electronic devices. Barker fixed 24 of them on his instrument, 23 leaving the sound of the recorder unchanged: a first one to measure the pressure in the air canal, one under each of the eleven keys (which allowed the instrumentalist to control the software while playing) and finally six buttons and two sensors on the rear of the recorder. Only one device was used for sound amplification, a small and powerful condenser microphone. The so created new instrument was called “Midified Recorder” or “MiRe”.

It allowed the musician to build up a very personal sound catalogue and was used mainly for improvisation. Unfortunately, no collaboration with outstanding composers was developed, no interesting compositions followed, and Barker's revolutionary work disappeared with its creator. The second recorder-player who experimented with electronic components placed on a Paetzold recorder was Caesar Villaviciencio, one of Barker's students. Taking advantage of the rapid progresses in technology, he did not only place sensors and a condenser microphone on his Paetzold double-bass, he also equipped it with an LCD monitor. Villaviciencio still improvises on this recorder.

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