

# Glass Works – The Instruments



## The Cristal Baschet

*The Cristal Baschet or 'Le Cristal'* was designed in 1952 by Bernard and François Baschet. It consists of about 4 octaves of chromatically tuned glass rods, which are rubbed with wet fingers. The vibration of the glass is passed to a heavy block of metal, which itself is tuned and in fact determines the final pitch. The entire mechanism is amplified by a large steel plate called the "flame". There are also three small fiberglass cones that amplify the higher frequencies.



*These pictures show the glass rods connected to the metal tines. Sound is produced by rubbing a wet finger on the glass - hence the bowl of water.*

The Baschet brothers specialize in creating sculptures that can be "played" to produce music. They also invented the inflatable guitar and the aluminum piano, and created an "educational instrumentarium" for exposing young people to musical concepts. The instruments are still in production - see Thomas Bloch's site for more details

## Glass Armonica



The *glass armonica*, also known as the *glass harmonica*, *bowl organ*, *hydrocrystalophone*, or simply the *armonica* (derived from "harmonia", the Greek word for harmony), is a type of musical instrument that uses a series of glass bowls or goblets graduated in size to produce

musical tones by means of friction - rubbing a wet finger along the edge of the glass, as one might with a wine glass.

The instrument was invented by Benjamin Franklin, who called his invention the "armonica" after the Italian word for harmony. On Franklin's treadle operated version 37 bowls were mounted horizontally on an iron spindle. The whole spindle turned by means of a foot pedal. The modern version uses a silent electric motor. Over time limescale build-up gives the instrument a frosted appearance, like a rare crystal or stalactite.



*L > R : Limescale build-up on the glass; Blochs new Armonica with clear glass; recording the Armonica.*

### **Bowed Chamber Bowls**



### **Cloud Chamber Bowls**



The *Cloud Chamber Bowls* are Soniccoutures recreation of an instrument built in the 1950s by maverick American composer Harry Partch. It consists of hanging "bowls" which are sections of 12-gallon glass carboys. Both tops and bottoms of the carboys are used. Partch had 14 (later 13) bowls hanging from a large wooden frame he called a "tori". The name "Cloud Chamber Bowls" arose from the fact that Partch found the original tops and bottoms at a Radiation Laboratory at UC Berkeley in 1950. The bowls were originally used for cloud chambers used in tracing paths of subatomic particles.

The original pitches of the bowls are basically

random, as were Partch's ("It has been impossible for me to tune the bowls - I must accept what I get."). The varying thickness of the carboys and unpredictable overtone structure make it pretty much impossible to cut a carboy to an exact pitch. For our *Cloud Chamber Bowls* kontakt instrument we have included a full chromatic tuning of the bowls, for convenience.



Since we were unable to locate a set of Chamber bowls whose owner was willing to let us record them, and since most sets are 'home made' anyway, in the spirit of Partch we decided that we would make our own set.

As with many things in life, it wasn't quite as simple as it looks - sourcing glass carboys that large is hard enough, since these days most people use plastic. Once we had found some, the cutting and drilling turned out to be a delicate and extremely time consuming task, taking a glass-worker several full days to complete.

