JIG JAZZ

The History of an Idea
by Brendan Power

The ground-breaking new Suzuki SUB-30 UltraBend is a 10 hole Diatonic where 18 reeds can be bent a semitone or more (instead of the usual 8), allowing you to play a full chromatic scale without overblows!

The story behind its development is an interesting one. As with many inventions, it's taken a winding path from the initial idea to commercial production, and several key figures played a role.

Long Ago and Far Away in 1980s New Zealand, I was experimenting with various ways to get better performance from my harps. Half-valving was one of my ideas from that time, adopted by Suzuki in the ProMaster MR350-V.

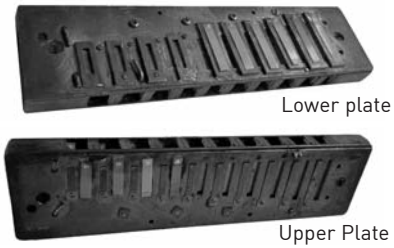
In 1989 I had an even more radical thought: what about adding extra reeds to a diatonic harmonica to achieve full interactive reed bending on the notes that couldn't be bent on a normal harp? As every player knows, the only notes that can be bent on a normal 10 hole Richter harp are the higher pitched reeds in each hole – holes 1-6 draw and 7-10 blow. They interact with the lower reed of opposite breath in each chamber to create the bend. The low pitched reeds in each chamber are not bendable at all, because there is no other reed lower than them to interact with.

I wondered: What if I introduce another set of 10 *sympathetic* reeds a tone below the pitch of the lower active reeds? They would only activate when the player wanted to bend the low notes, and should theoretically allow all of them to bend a semitone down.

I set to work and made a 30 reed prototype harmonica out of a Richter tuned Koch chromatic. The idea was simple - but making it perform without unwanted interference tones was tricky. However I figured out how to overcome the problems - and it worked!

I was ecstatic! I felt the addition of the passive sympathetic reeds was a very significant new development in the history of the harmonica. For the first time it would allow players to get all the missing notes on a diatonic and give them lots of extra expression via the same simple bending technique they were accustomed to.

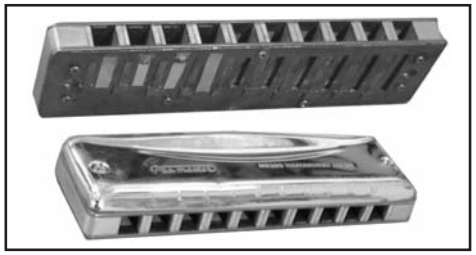
My Original Prototype 1989



The precursor to the Suzuki UltraBend. 20 Active reeds on the upper reedplate, 10 on the lower reedplate. Extra valve housings over sympathetic reeds to overcome interference tones.

I investigated patenting the idea but couldn't afford the legal fees. I decided to show it to Suzuki under a Non-Disclosure Agreement instead. On my journey to the UK in 1991 I went to Hamamatsu, Suzuki's headquarters in Japan, and presented my 30 reed prototype harmonica to Mr. Suzuki and the R&D team.

They were impressed with its potential and decided to develop the idea further. I realised the design could be simplified by giving the sympathetic reeds a negative offset (no gap) instead of the extra valve housings on my home-made prototype. Suzuki incorporated this idea in their new test models, reducing them in size close to the dimensions of a normal diatonic. Several were made in 1992/93, and they worked well.



The success of these prototypes prompted Suzuki to investigate patenting the design. I was confidently looking forward to the production of a 30 reed 10-hole harmonica incorporating my idea within a year or two. But no sooner had Suzuki begun the search than I read the shock news that a US patent application for a similar idea had been filed by the respected harmonica player and technician Rick Epping back in 1991! After reading the published patent I realised that Rick's description of 40 and 30 reed harmonicas covered the idea I had believed was mine alone...

It was a crushing moment. I sadly sent Rick's patent to Suzuki. After studying it the company decided to cease work on further prototypes...

I was hugely disappointed, but subsequently discovered that this was only part of the story! It turned out that the first person to think of putting 30 reeds in a 10 hole harp for extra bending was Will Scarlett, a highly innovative American player (he was also the first to use overblows on a systematic basis). Will thought of the idea in 1984 and made a single three-reed cell to test the concept. It worked and he started sketching out the design for a 30 reed harp, with 15 reeds on each reedplate.

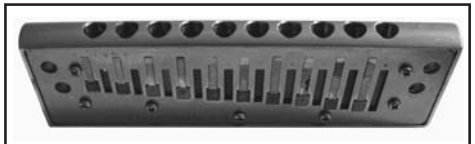
Will kept his work secret, but in 1987 he shared his idea privately with Hohner consultant Rick

Epping. Rick was intrigued and developed it further on his own into a more advanced 40 reed design. Rick then proposed to Will that they combine forces to patent the 30 and 40 reed harp ideas - but unfortunately (as often happens in the history of inventions!), the two men fell out.

As I understand it, Will accused Rick of stealing his idea, but Rick felt he'd developed it in a new and unique way. When they couldn't agree Rick decided to file a patent application anyway, not claiming to patent the basic concept of extra sympathetic reeds for bending (Rick called them *Enabler Reeds*), but his designs based on the idea. Rick's initial US patent was published in 1993, and a fuller version in 1994.

Will challenged the validity of the patent and the two inventors battled each other in the US patent courts throughout the 1990s. In the end Rick won, and took out further patents for an innovative comb design for his 40 reed concept. That eventually led to the production of the Hohner XB-40 in 2004. US design patents have a life of 14 years, and Rick's 1994 patent expired in 2008. This meant there was once again an opportunity to produce the harp Suzuki and I had been working on in the early 90s: a 30 reed harp the same size as a normal 10 hole diatonic and with a similar sound, which plays in exactly the same way but gives the extra missing notes not available on a normal diatonic, through simple bending technique alone.

By now a Suzuki consultant, I encouraged the company to restart development of the idea. After some investigation they agreed and work was begun The size of the 30 reed harp was reduced even further to make the hole spacing identical to a normal 10 hole diatonic. Instead of 15 reeds per plate (as in Scarlett and Epping's drawings), Suzuki decided to go with a 20/10 combination – the same format as my original 1989 prototype. It requires high-tech slot cutting and reed fixing technology to fit 20 reeds on a blues harp reedplate that normally has only 10, but Suzuki achieved it.



UltraBend Upper Reedplate on Custom Comb

This long and winding road has reached journey's end in the shape of the Suzuki SUB-30 UltraBend. It will be sold only in the keys of A, C and D to start with. Suzuki have also given me permission to produce custom models with specialist solid combs. The UltraBend will be released at the APHF and SPAH harmonica festivals this summer.