BAC 2016

Music Research Project S7

Electro-Acoustic and Electric Harps

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Electro-Acoustic and Electric Harps

When people think of the harp in general the first thing that comes to their mind is a mythical instrument played by angels or fairies. The harp is claimed to be a soft instrument for girls. Hardly anybody would associate this instrument with strength, men or rock music. Everybody knows that electric keyboards or electric guitars exist but who has heard of an electric harp? For this project I did some research on the history of harp amplification and the development of electric “solid-body” and electro-acoustic harps. Further I amplified my acoustic pedal harp to experiment with some effects and to explore the possibilities of an electro-acoustic harp.

A brief history of amplification

From the mid 20th Century concerts were held in bigger halls or open air. Many instruments like the guitar or the piano were amplified very early and electric versions of these instruments where developed. To perform in a band or in an open air concert the amplification of the harp got essential. For example the harpist Alan Stivell (1944- ) who revived Celtic music and is considered to be the forerunner of the “folk-rock” performed with electric guitars, drums and loud Celtic instruments like the pipes and the Breton bombarde. To ensure that his small Bardic harp is heard he amplified her with microphones in the 1960s.

This is the most evident way to amplify a harp or any other instrument or voice. For that a microphone is placed in front or inside the harp to “catch” the sound from the air. One of the main harp manufacturers SALVI harps developed an electro-acoustic harp by placing microphones and dampers in the soundboard in a classic pedal harp. The dampers where installed to make the soundboard less resonant, to avoid feedback. Not only the big harp manufacturers did research and tried to produce an electro-acoustic harp but also individuals like Andreas Vollenweider did. Andreas Vollenweider searched for the instrument “with which he would be able to develop his own personal musical language”1. He found the harp but wanted to modify her for his needs. In collaboration with a sound engineer, Vollenweider created a new pick-up system for the harp in the 1980s. His research never led to an instrument available for the public because he was only interested to create his own amplified harp. With this method he was able to create his “own special sound”2 which he had searched for.

Although the amplification with microphones improved, the harpist and manufacturers weren't happy with the result. The use of microphones produced unwanted feedback. Also the sound of other instruments standing close to the harp or other noise was captured and amplified. There was the desire that the amplification gets more precise. The solution seemed to be a harp without a soundbox, a “solid-body harp”. The German Celtic harpist Rüdiger Opermann claims to be the first one to create a “solid-body” electric lever harp in the early 80s. He build it for his personal use and not for commercial use. Finally in the 1980s the well-known French harp manufacturer CAMAC harps developed the first commercial electric lever harp, the 36 stringed “solid-body” “ElectroHarp”. It is equipped with piezoelectric pickups on each string which is placed at the base of the string. This special pickup “reacts to the pressure variations induced by the string’s vibration”3 and transmits this signal to the loudspeaker which then produces the amplified sound. This method created a very clean and natural sound without feedback because only the vibrations of the strings are converted into the final sound. The “ElectroHarp” was presented 1984 at the Edinburgh International Harp Festival and the World Harp Congress in Jerusalem. Alan Stivell who always wanted an electric harp uses this harp in his album “Harpes du novel age”. In collaboration with Deborah- Henson Conant, a well-known
electric Blues, Jazz harpist and composer, CAMAC developed the electric lever harp further. Conant dreamt of having a solid-body electric harness harp, a harp which she could strap around herself to have a greater freedom of movement on stage. To encourage Joel Garnier from the CAMAC harps to build such a harp she amplified a small lap harp with a pickup and performed a Blues for him. Deborah Henson-Conant showed what she could do on stage with such a harp. In this way he got convinced to create a portable electric harp. The “Baby blue” was born. Although Henson-Conant was satisfied with the sound of the harp, the “Baby blue” was too heavy to wear for a longer period of time. For this reason CAMAC harps searched for a way to make the harp lighter. In 2010 the “DHC Blue Light” was launched. It is made out of Carbon fibre and the 32 string version only weights 5,5 kg. This electric lever harp has a well balanced sound and is wearable on stage.

https://www.youtube.com/watch?v=d-m_V8yu3GA

In this video Deborah Henson-Conant performs “Cirque de Lune” with an electric lever harp (DHC Blue Light). She is a great performer who very often tells a story fitting to her played piece. In this one she uses the looper (see section “Making an amplified harp”) extensively from 4:40 on.

In 1990 CAMAC launched the electro-acoustic pedal “Blue harp”. After the creation of the electric lever harp harpists wanted to have an electric pedal harp to have more possibilities in terms of the range. CAMAC decided to make an electro-acoustic harp to combine the natural sound of an acoustic harp with the power of and precision of an electric one. As the electric lever harp the “Blue harp” is equipped with piezoelectric pickups on each string. The main difference between these two harps is not the size or the way how it is played but that the electric lever harp has no soundboard and can only be heard when plucked to a loudspeaker. The electro-acoustic “Blue harp” can be used as an acoustic or an electric instrument. As pedal harps are very expensive electro-acoustic one enables harpist to have one harp which sounds great without and with amplifier. Other harp manufacturers like SALVI harps and “Lyon and Healy” have also launched electro-acoustic pedal harps but the most spread one is the “Blue harp” serie from CAMAC.

https://www.youtube.com/watch?v=d8GKkJUffY4

In this video the harpist Lara Somogyi plays a cover of “Pombeii” by Bastille on the “Big Blue” electro-acoustic harp from CAMAC. She uses a looper and a delay pedal (see section “Making an amplified harp”) to perform this piece on her own.

Besides the electro-acoustic and electric harp there is a new type of harp being launched the first time in 2009 by CAMAC harps. It’s the MIDI (Musical Instrument Digital Interface) harp. The MIDI “is a connectivity standard that musicians use to hook together musical instruments (such as keyboards and synthesizers) and computer equipment”\(^4\). The MIDI harp has a “solid-body” and works with a synthesizer. The sound produced comes from the synthesizer to which it is connected and not from the harp itself. That means that the MIDI harp can make any sound you wish it to make.

There even exists a MIDI harp Concerto. It is called “No Doubt” and written by Graham Fitkin. In the following video the composer talks about MIDI harps and his composition.

https://www.youtube.com/watch?v=Nu_FIB6Aemo
Making an amplified harp

As part of my project I also wanted to explore the possibilities of an electric harp by myself. I only have an acoustic harp and due to the fact that electric harps are quite expensive I decided to amplify my harp with a pickup. In a music shop in the German city Aachen my father and I got some advice on what is necessary for the amplification of acoustic instruments. Finally we bought a “Fishman” pickup for harp and piano, a delay effect pedal and a looper from boss, an amplifier from Marshall and cables. With the help of Deborah Henson-Conant’s book “Gurl’s Guide to Amplification” and the tips from the music store I learnt the basics of amplification. The most challenging part is to find the spot for the pickup where the harp sounds its best. I placed it 1/3 up from the bottom inside the soundboard next to the F string. Until now I wasn’t able to eliminate the feedback of my amplification.

The looper is a tool which records a played sequence and repeats it over and over again. This enables the musician to record a bass line and then overdub it with a melody or percussion effects. This looper from Boss has also five inbuilt effects to modify the recorded sequences. I really like to play around with the looper by doing some improvisation on a recorded bass line. The effect we bought is a “Digital Delay” effect pedal. A delay has same principle like a looper but this equipment only records up to 3200 milliseconds while the looper can record several hours. With the delay you have the possibility to make echos and to modify how often the very short sequence should be repeated and with which time difference. This effect can also modulate and change the sound of what you play.
I did these two soundtracks with my amplified harp, looper and delay pedal. I first recorded a bass line or rhythm and then played other short sequences on top of it. The first soundtrack is very rhythmical, it has the nature of an accompanying rhythm. In contrast the second one is more melodic with no clear rhythm structure. While working with a looper I find challenging to be exactly on time.

As a classically trained harpist I am used to follow what is written on the partition and to the normal acoustic sound of the harp. I was aware that electro-acoustic and electric harp exist, I even played one at an exhibition but I only knew little about them or the possibilities you have with such an instrument. For that reason I wanted to broaden my horizon by going beyond of the classical music and the project helped me to get a better understanding of the electric and electro-acoustic harps and instruments. In the future I would like to do some projects with my amplified acoustic harp because it is great fun. Nevertheless I won’t quit to play classical music due to the fact that I really enjoy this kind of music. I think that it’s important to try out some things beyond the “comfort zone” to get a broader knowledge of music and discover other fun things.
Sources

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