

USER REPORT

Zephyr Brings Antarctica to World

By Doug Quin

GLEN ELLEN, California As a music composer, sound designer and naturalist, I decided that the approaching millennium presented a unique opportunity for me.

My soundscapes and wildlife recordings from Madagascar to the Brazilian Amazon have found an audience on National Public Radio (NPR) and have been recorded onto CDs. I had also taken my explorations of sound to Antarctica, a locale where whales, seals and glaciers are among the exotic elements in a unique sonic palette.

Live broadcast

I became excited by the possibility of building global awareness about the Antarctic Peninsula through my soundscapes. What better way to do this than with a live radio broadcast from the region on New Year's Eve 1999 or New Year's Day 2000?

A key ingredient in bringing this type of live broadcast to the world from such a remote region are two Zephyr codecs donated to me by Telos Systems. I decided upon Telos after talking with other radio engineers.

The quality of Zephyr, along with their vast installed base both internationally and in the United States, became obvious the more I asked around.

I contacted the folks at Telos and asked them: "How can you beam my art into people's cars and living rooms?" Zephyr was the answer.

I began talking with their engineering staff and discovered how all the technical questions had been thought out.

Telos donated two Zephyrs — one for back-up use in case something unexpected happened in the Antarctic. In addition, Telos helped me figure out some of the broadcast logistics and was instrumental in helping me to procure the necessary satellite links through Commercial Satellite Systems.

Both NPR and Westdeutscher Rundfunk (WDR) became interested in my plan, which was made possible in part by the National Science Foundation Antarctic Artists and Writers Program. With the help of Telos, the project was under way.

Palmer Station

I decided to set up operations at Palmer Station, the U.S. base on Anvers Island, about 2,250 kilometers from the South Pole, because of its location and the type of equipment already installed there.

set up several simultaneous live feeds of the various sounds I want the world to hear. I will bring them together through a mixing board and into the Zephyr to create a 64 kbps data stream that can be uplinked for satellite transmission to NPR and WDR, along with any additional radio stations who may express interest.

There is an exciting aural variety offered by the Antarctic surroundings. Microphones provided by Sennheiser will allow me to pick up the sounds of penguins and elephant seals along with other wildlife, as well as the eerie cracking



The author records seals in Antarctica.

I would arrive in November, during the Antarctic summer, and camp for about three months to complete the entire project, which will involve recordings, writings, an Internet-based multimedia presentation and, of course, the live New Year's broadcasts.

I do not plan to travel far from my base, but when I do, it will probably be by Zodiac boat.

In order to broadcast live, I will need to

sounds made by moving glaciers.

Hydrophones, which were donated by International Transducer Corp., will give me the varied underwater sounds of Weddell, crabeater and leopard seals, as well as the calls of orcas and other whales.

These water-based sounds will be via an FM wireless transmitter rig, nearly a half kilometer away from my broadcast site.

Wind harp

As with some of my past soundscapes, I plan to construct a sculpture I call an aeolian, or wind harp. Basically it is an amplified array of harp, piano, guitar and harpsichord strings that will "play" music as the wind passes through.

All of these will be combined with my live narration, and if necessary, portions of my previous recordings from Antarctica.

But most unusual of all will be the very low frequency sounds for which Palmer Station is known.

These are atmospheric sounds, caused by lightning strikes in other parts of the world. They resonate into outer space and are picked up at a special listening hut at the station.

A Piezo transducer will convert them into the audible range, and they will become a part of my broadcast.

All this audio will be fed into a Telos Zephyr, compressed into 15 kHz ISO/MPEG Layer III to become a 64 kbps signal, and fed through an Inmarsat B terminal located in Antarctica. My audio will then be sent up to the satellite

and downloaded by NPR and WDR for live broadcast.

The Zephyr is tailored to interface perfectly with Inmarsat B, so I am confident the audio signal will be top quality. Because of the bandwidth limitations of the satellite, the audio will be mono.

But I will put stereo versions on the Internet for other listeners, and it will be recorded for future production of CDs.

Remote region

The quality of design and performance of the Zephyr will be especially important once I am encamped in such a remote region.

Temperature and weather conditions vary to extremes, and while it is not as cold as the Antarctic winter, it can get down to -18 degrees Celsius and the wind is constant during the austral summer.

Other engineers who use Zephyrs have told me how rugged they are. I am sure my work at Palmer Station will prove that true.

Through my live pick-up of wildlife, glaciers, the wind and atmospheric phenomena, I hope to impart a sense of place

to those listening as we begin the new millennium. It is a very small planet, and these sonic wonders are a huge part of it.

I am glad companies like Telos have invented critical links like the Zephyr to allow me to share the wonder of this unique environment with the rest of the world.



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