

## The Eternal Presence

2003 Review:

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The Eternal Presence is a new CD for four didgeridus in ensemble. It evolved from the convergence of four didgeridu players from around the world who came together to perform in an enchanting historical location with stunning acoustics, an expert location engineering crew and a state-of-the-art mobile recording studio.

The resulting CD is an extended, continuous cycle of eleven interwoven compositions that take the listener on a journey through soundscapes that are ethereal, introspective and invigorating.

What's the most intriguing aspect of this collaboration? Is it the four musicians from different parts of the world whose lives and music intersected for this recording in San Francisco? Is it the abandoned 80 yard military tunnel with the acoustics of a European gothic cathedral? Is it the creative digital recording techniques that capture the sound of the tunnel on CD? Perhaps it's none of these. The result speaks for itself, encapsulating all of the contributions of the players and place into a continuous palette of sound capable of transporting the listener to another place and time. It is music born from the brotherhood of seven men, lovingly crafted with a deep hope for peace and harmony, and an intense energy that permeates every note.

The recording bears the aural signature of a remarkable location - a richly reverberant stone tunnel perched at the peak of the Marin highlands, high above the Pacific Ocean.

The tunnel is part of an abandoned military complex which is now in the care of the Golden Gate National Recreation Area next to the Presidio, the largest urban national park in the world. Due to its prime location guarding the mouth of the San Francisco Bay, this was the site of an elaborate military seacoast fortification established during the Civil War. The specific tunnel used for this recording was built during World War II to provide access to a large gun turret located at its far end, carefully hidden from view but providing a sweeping panoramic view of the Pacific Ocean for defensive purposes. It was abandoned shortly thereafter as its weaponry became obsolete. During daylight hours the tunnel is open to the public, and as a result, many musicians have discovered its astounding acoustics. However, the tunnel at night is transformed to a completely different space - a sacred sound chamber, with ethereal mist rolling in from the ocean, its dense mysterious haze blanketing everything in sight, including the twinkling lights of the Golden Gate bridge and San Francisco beyond.

The tunnel is almost 80 yards long, and made of concrete with an arched ceiling similar to the transept of a Romanesque cathedral. The ceiling was built very high in order to allow large military trucks to be driven through. Every surface inside the tunnel is smooth and reflective, which makes it extremely "live" for playing.

We held rehearsals in the tunnel for several days before the concert and recording session. In these rehearsals the walls were lined with close to 80 didgeridus as we experimented by playing them individually and in combination to match their pitches to each other for chordal harmony and to the tunnel's resonant frequencies. A didgeridu is basically a long tube, open at both ends. The length of this tube, plus the shape of its internal bore, determines the pitch it will produce (its fundamental note) as well as the higher frequencies, or partials, at which it will resonate. The tunnel is also a long tube open at both ends, similar to a large didgeridu, and certain frequencies were discovered that resonated well when played inside the tunnel. We ended up believing that Bb was its prime resonant frequency but any note sets the tunnel awash in sound. However, the group discovered that notes of certain frequencies played in certain "sweet spots" in the tunnel will blossom and swell into a swirling mass. When playing one of these notes, you get the sensation that once the note is started,

the note takes on its own life and is no longer controlled by your breath, as the tunnel grabs the sound, pulls it from the instrument and surrounds you, As we played, we came to understand that the tunnel was one of the performers, contributing its powerful resonance to shape each piece of the 70 minute recording.

As a result of our rehearsals, we selected a set of about 40 agave and ceramic didjeridus that ranged in length from 12 inches to over nine feet long and covered a musical range from low F up to E two octaves above. All of the didjeridus were crafted by the musicians themselves. Most were made from agave cactus by Jusse Nayeli and the remainder were ceramic instruments by Barry Hall.

Agave is a type of cactus that grows around the world with these stalks coming from Hawaii and Arizona. Jusse has drawn on his extensive background working with resins and synthetics as well as woodworking to develop a unique approach to crafting agave instruments. When agave stalks are harvested, they are full of a fibrous material that must be removed in order to make them into a didjeridu. However, once Jusse has hollowed the interior of a stalk, he often fills it back again with a dense foam material that allows him to re-sculpt the interior bore to his specifications producing the desired sound and tonal characteristics he is looking for. Each of his instruments is unique, as he works with the characteristics of each individual stalk, and prepares instruments for different purposes. For example, the instruments used on track 3, "Clarion Call", were designed specifically for "bell tones", the trumpet-like overtones in the upper register of each instrument. One special instrument used extensively in the recording is nicknamed "The Freak" as it is a freak of nature due to its ability to produce large numbers of very pure elongated bell tones (Jusse also uses an unconventional embouchure stretching his upper lip down over his lower lip and teeth enabling him to effect a smooth legato sweep between the different trumpet tones). The combination of selecting the best shaped stalks, sculpting the interior bore and hardwood mouthpieces, and the stunning exterior artwork utilizing inlaid abalone, copper and other materials, earn Jusse's Didjemana didjeridus a place among the most beautiful looking and powerful sounding agave didjeridus in the world.

In order to hold the concert and recording session during the night, we obtained permission from the National Park Service. Based on the number of friends asking to sit on the recording session as well as encouragement from passers-by during our rehearsals, we decided to hold a concert called "Deep Tones at Twilight". Our thought was to collect donations to help finance the recording. We sent out an email announcing the concert, crossed our fingers, and hoped for a small band of brave souls who would sit in a cold, dark tunnel in order to share the experience of our music. About 140 people showed up for the concert at 9pm on that misty night and were treated to a shawdowy performace in candlelight.. Apparently the spirit of the internet had blessed our invitation and it had found its way to the right audience.

The gods of nature and chance were also on our side. On the original scheduled recording date, a snafu with the rental agency left us without a generator and no way to power the mobile recording equipment. As a result, we had to postpone the recording until a week later. However, this unanticipated wrinkle turned out to be a real blessing in disguise. The weather conditions ended up much more favorable for recording due to a complete lack of wind that night. Almost every other day of the year the tunnel is an attractor for funneling wind to the inner bay from the pacific ocean which is due west. This allowed us to forego the massive plastic tarp over one end of the tunnel necessary during the concert the week before (ensuring the audience would be warm enough). We discovered the tarp to be noisy in the wind and it could have created significant problems in the recording. Lastly, the reschedule bumped the "Deep Tones at Twilight" performance to a night that was thick with dense fog and mist providing an air of mystery for all.

Contributing to The Eternal Presence:

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### The Technical Story:

Capturing a musical performance at a moment in time, with its unique texture and feel in a shared environment and space, is like a dance. It is a marriage of emotion, science and technology. When visiting this tunnel anyone would remember its unique texture and sonic character. Given the San Francisco environment, significant preparation and care had to be taken to record with the harsh climate of salt air, wind and humidity.

Our first job was to get the equipment set-up and begin to listen to what the space was giving us. A tent was erected to house the Otari RADAR 24/48k hard disk recorder, mixers and mic-preamplifiers. The A/D converters in the RADAR are very smooth and perfect for location recording. We used a mixture of microphone preamps from Vintech 1073's, Neve V72's, and a custom built discrete 8 channel preamp using the same front end as the Neve 1073. The microphones used to capture the performance were 2 AKG 414EB's, 2- Audio-Technica 4051's, 2- Neumann KM-84's and 2-Audio-Technica 4050's. These microphones were chosen for their tonal quality as well as durability in the environment. As it was, even these microphones could not handle the humidity during the whole session and had to be swapped out.

The original plan was to capture this performance in surround for a later DAD/DVD release. We decided to capture the performance with six microphones at a height of 9'6". One cardioid microphone was placed in the mouth of the tunnel on each end. Twenty two feet into the tunnel from each end we placed an AT4050 in the figure 8 pattern facing the length of the tunnel. In the center of the tunnel we placed two AKG 414EB's as a Blumlein crossed bi-directional pair. This now gave us six channels of audio. The placement in height of these microphones was determined by critical listening using a ladder for assessing how to capture and eliminate the build up of energy and standing waves. In the lower part (below 9') of the tunnel with the parallel walls there was lots of wash and standing waves. The sound became muddy and less distinct. In the apex of the tunnel (above 10' within the half circle curved ceiling) the sound became thin with less body and character was lacking. The character and sound seemed to come alive and distinctive at the nine and a half foot height.

With that out of the way it was time for the musical pieces and the tunnel to tell us where the musicians needed to be within the space. As an example, the bell tones (toots and overtones) were hard to capture with clarity without the sound taking off in an uncontrolled way. We placed the performers facing each opening on opposing walls and about three quarters of the way into the

tunnel. Each performer played their part with the didj at an angle to the outside wall, thus generating a particular tone using the tunnel to create a swirling motion heading to the outside and having less tonal build-up in the middle. Some of the sounds in the recording have a motion to them, as if done through a panning process. However this was not done in the mix. It was done during the performance with Rafael spinning with his didj in a circle creating tonal motion during the piece. On certain pieces all four players would sit facing each other in the center of the tunnel and raise the didj's from the ground to ceiling and back. This resulted in the tunnel playing an even more active role as the fifth player.

Folding the mix down to a stereo soundscape from six channels was challenging work. During the recording we never limited or compressed the performance. This left us with a very dynamic recording. The feeling we had with these instruments being directly from the earth and being possibly one of the first musical instruments outside of banging on a dead tree trunk, is that they have a genetic attachment to our souls. Therefore we let the musical environment of each piece fill us up honoring it with the least amount of electronic manipulation. Technically we believe we accomplished what we set out to do. We are only sorry we could not deliver the San Francisco mist and fog on the recording as well. You will have to supply that yourself.