

Our International Friendship Bell – a unique Oak Ridge symbol, part 9

Art and sound

(As published in *The Oak Ridger's Historically Speaking* column on August 8, 2008)

We have now looked at the physical bell casting and the building of the pavilion as well as the artistic design of the pavilion. Now let's take a look at the unique design of the two panels on the bell itself in a discussion with artist Susanna Harris.

We will also examine the sound of the magnificent eastern style "bonsho" bell – a style that is unique for its "long and low" sound. Ray Adams says that a traditional western style bell would have to weight 20-30 tons to make a comparable low sound to that of our bell.

As has been the case all along, I continue to meet the most fascinating people in my quest to know the history of our friendship bell. Susanna Harris has just returned from a trip to Australia and as agreed upon before she left, we talked about her contribution to the bell. She explained the rationale behind the images she chose for the two distinctive artistic panels of the bell.

It is exciting to hear her talk about the reasons for her choices of materials to depict in the two panels. These panels are unique. Some other bells have decorative patterns, but not images of materials that convey such positive aspects of places and certainly there is no other bell with rainbows on it!

Two large panels on the bell show the natural characteristics of both Tennessee and Japan including the official flowers, trees, and birds of both areas. Susanna chose the rainbows because of their symbolism as "covenants." She intended the promise of the rainbow to be a promise between two countries to never harm one another again, to live at peace with one another.

She extended the "promise" thought to include all human beings and thus the concept of international peace was illustrated by those two rainbows. The elements of sky, earth and living things embodies positive elements of life and were intended to bring thoughts of harmony and hope. The season of spring was chosen through the dogwood, iris and cherry blossoms as symbols of beauty and ever renewing hope of each new growing season.

Susanna said in an e-mail when she was living in Australia and recalling the artistry of her design, "The surface imagery is meant to be reasonably transparent in meaning to both the Americans and the Japanese. I looked for symbols that had equivalents in eastern and western imagery, and tried particularly to use things specific to Tennessee. In Japanese art, cherry blossoms and irises are symbols of spring and renewal. A Tennessee equivalent of cherry blossoms is dogwood blossoms. In Japan, the crane stands for longevity. For the Tennessee panel, I used a mockingbird."

She continued, "Both backgrounds include mountainous landscapes: Mt. Fuji in Japan and the Smoky Mountains of Tennessee. The atom symbol refers to the atom bomb, of course, and to World War II – particularly to the mutual desire that no war, no such a drastic resolution to war, should ever happen again. The atom symbol also refers to the fact that the atom bomb changed the world forever.

She concluded, "And the rainbow, which appears on both sides, is a western symbol, representing the covenant, once again, that such a thing will never happen again. (Remember that after the flood, God shows the rainbow as a covenant that the world would never be flooded again).

Susanna was first approached about designing panels for the bell by Shigeko. She found the prospect of that project intriguing as she realized the significance of such a monument in the international city of Oak Ridge. She prepared her drawings and presented her design to the bell committee where it was well received.

When the bell maker, Iwasawa, visited Oak Ridge, he assured Susanna that he design could be cast into the bell. He also found her unique two panel design fit well into the overall bell's four panel layout. He

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explained the casting process to Susanna and they agreed on the bas-relief effect she had hoped could be attained.

One thing she did not realize was that the two panels she designed would be cast side by side rather than on opposite sides of the bell. She had intended the rainbow to appear to extend through the bell and come out either side. As cast, the rainbows seem to come from the sky and stop at the ground, quite like many real rainbows I have seen. While this did not meet her original intent, it does not distract from the message or the beauty of the bell.

Susanna left Oak Ridge in 1993 to live in France for three years and then moved to Australia where she and her family lived on 25 acres that they shared with the large kangaroo native to Australia. At the time she lived in Australia, she had never gotten to ring the bell. She said on the times she visited Oak Ridge she could never manage to ring it on schedule and then spontaneous ringing was not allowed. I was pleased to find that Susanna now again lives here in Oak Ridge. We met at the bell for a photograph and to talk about her designs.

I hope you can now join me in better appreciating the two artist panels of our bell. Susanna did a beautiful job of including elements of both Tennessee and Japan and her artist skills add immeasurably to the beauty and intrigue of our bell.

She did make an observation that I would like to leave her section of the story by sharing with you. She said that even though she was not here in Oak Ridge during the controversy surrounding the bell, she said she “found the political dispute that arose over the bell to be ridiculous and disheartening. It was no way ever meant as an apology on our part.”

Now let's examine the ring tone of our bell.

Ray Adams explained to me how he came to be interested in bell tones and how he was introduced to the study of bell sounds by Herman Postma's response to his question of “how does the bell sound?” Herman had just returned from Japan where the bell was cast and his reply of “long and low” was not scientific enough for Ray. He wanted to know the resonant frequency and amplitude of the sound waves generated when the bell was struck.

Ray and his friend Hal Smith recorded the bell's sound over a few weeks just after the bell was installed at its present location. He then analyzed the sound spectrum determining the basic or fundamental frequency to be 90 hz. Interestingly enough that frequency is only apparent by the harmonics that are produced such as 180 hz, 272 hz (near the third multiple number of 90 or 270) and 377 hz (near the fourth multiple number of 90 or 360). The strongest harmonic produced only -14 db of sound.

I found it most interesting to note that the loudest sound of the bell is hardly more than normal conversation and can only be heard for a short distance from the bell. While the sound definitely has a soothing resonance and can even be felt if one is close enough and attuned enough to experience it, it is far from being loud enough to disturb anyone anywhere. It also has a long period of residual vibration after it is struck.

The sound of the bell can be heard at the following web addresses:

<http://www.hibberts.co.uk/collect1/freedom.mp3> - Note that this website is located in England, yet it uses Ray Adams' recording!

Here is Ray Adams' web site where you can hear the sound of a number of bells including ours.

<http://www.ece.utk.edu/~adams/BELLS4.HTML>

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The Oak Ridge International Friendship Bell weighs 4 1/4 tons. This is actually a small bell compared to other similar Eastern bells. The one at Kyoto weighs 74 tons.

Next we will discuss the religious implications of a “Buddhist Bell” or is that what we really have? We will also look closely at the various aspects of controversy surrounding our bell and finally we will see Bill Wilcox and Elise Campbell come to the rescue of the bell in quite different ways.



Susanna Harris, artist who created the two wonderful artistic panels

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Shigeko Uppuluri and Susanna Harris at the bell

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The Tennessee panel with dogwoods, iris, mockingbird and the Smoky Mountains



The Japanese panel with cherry blossoms, cranes, temple structures and Mt. Fuji