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Countdown to Hiroshima

David S.R. Bridges

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Countdown to Hiroshima
David S. R. Bridges
November 2nd, 2007
Approvals

Chief Advisor: Chris Jackson, Associate Professor, Computer Graphics Design

Signature of Committee Chair

Date: 8/27/08

Associate Advisor: Marla Schwegge, Professor, Computer Graphics Design

Signature of Committee Member

Date: 8/1/08

Associate Advisor: Deborah Beardslee, Associate Professor, Graphic Design

Signature of Committee Member

Date: 2/7/2008

School of Design Chairperson

Patti Lachance, Associate Professor, School of Design

Signature of Administrative Chairperson

Date: 8.1.08

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i. ABSTRACT:

On August 6th, 1945 at approximately 8:15 a.m. the United States dropped a uranium-based atomic bomb code named “Little Boy,” on the Japanese city of Hiroshima. The initial explosion, which was the equivalent of 13,000 tons of TNT, killed 45,000 of the largely civilian population instantly. Hundreds of thousands more would die of radiation-related illnesses in the decades to follow and a conservative estimate puts the death toll from the Hiroshima bombing at 200,000. Three days later, the United States would drop another atomic bomb composed of plutonium and code named “Fat Boy,” on the Japanese city of Nagasaki killing an estimated 70,000 instantly. The bombings led to the unconditional surrender by the Japanese and signified the end of World War II.

Although there is significant historical literature detailing the bombing of Hiroshima, there are few multimedia presentations that utilize current computer technology to detail the events of the bombing. Using this technology will provide the user the opportunity to customize their learning experience by enabling them to navigate through the information and learn about the bombing through objective interactive content that uses modern technology to explain the events that led to the atomic bombing of Hiroshima.

Key Words: Hiroshima, Nagasaki, World War II, atomic bomb, interactive narrative, multimedia
ii. ACKNOWLEDGEMENTS

This project could never have been completed if it were not for the many people who helped me along the way. I am incredibly in debt to the following people and organizations for their help with my project. My mother Bjorg Yonts for her support and encouragement. My faculty advisors: Professor Chris Jackson for always making time to help with coding. Marla Schweppe for her thoughtful suggestions and Professor Deborah Beardslee for all of the many hours she spent reviewing my designs and pushing me to make improvements. I would like to thank World War II veterans Don Scheid, Don Krause, and Bill McDonald for their help researching my father’s military service and to Sam Sakamoto and Jeanne Houston for sharing their experiences with me and helping me to understand the war from a Japanese American’s perspective. I’m grateful to the people who went out of their way to help me while I conducted interviews in Japan. Natsuki Okita and Kahori Wada of the Hiroshima Memorial Peace Museum, Donald and Pauline Hess of the World Friendship Center and the survivors of the bombing Isao Aratani, Kojo Hosokawa, Sumiko Hirozawa, and Noricko Ueda, who were willing to share their experiences with me. Lastly, I would like to thank my CGD classmates for all of their encouragement, and suggestions along the way.
I. INTRODUCTION

On the night of May 20th, 1976 my father Berly Elliot Bridges died of a massive heart-attack. I was seven years old. As I’ve grown older I’ve often wondered about my father and the events that shaped his life. At the time of his passing he was a colonel in the United States Air Force and from stories my older siblings told I knew that he was a veteran of World War II and spent most of his life in the service of his country.

When I was older, I came across my father’s foot locker in my older sister’s garage. There amongst the old family photos I came across a small grainy black and white photograph of my father standing in front of the Enola Gay. It had long been a rumor among my family that my father served in a bombing squadron during World War II and that he had trained as a bombardier along side the men that would eventually drop the atomic bomb on Hiroshima.

For my graduate thesis I chose to do a multimedia project documenting the atomic bombing of Hiroshima during World War II. For the project, I used historical photos and documents along with personal interviews to document the experiences of Japanese Americans during the war, the development of the world’s first atomic bomb, and the events of August 6th, 1945 that resulted in the atomic bombing of Hiroshima and the death of over 75,000 Japanese men and women.

II. PLANNING

For the initial stages of the project I sought to research my father’s involvement in World War II. I was able to obtain his official military records and they stated he had trained as a navigator/bombardier during the war and that he was a member of the 393rd Bombardment Group. The documents didn’t go into specifics, but noted that he served in the military from 1944 to 1949 and that at one point he had been stationed on the Island of Guam, which is in close proximity to the island of Tinian—where the Enola Gay would take off from in route to bombing Hiroshima, Japan.
Via the internet, I was able to contact various veterans organizations associated with the 509th Composite Group and inquire about my father’s military service. Eventually, I would make contact with Don Schied who served with the 509th during World War II and had sort of become their unofficial spokesman. Mr. Schied could find no record of my father in the official roster for the 509th, but stated that his records lacked the roster for the bomb squadrons and referred me to Robert McDonald who is a 509th composite historian and possessed the complete roster for the group. After corresponding with Mr. McDonald, he was nice enough to send me the official roster for the 509th Bombardment Squadron and there amongst the names I found my father’s, which had been misspelled and printed as Burley E. Bridges. Mr. McDonald had also included the names and addresses of my father’s commanding officers and I wrote each a letter explaining who I was and my desire to learn more about my father’s military service, but I received no reply and have come to the sad realization that given the fact that these men were most likely in their late twenties during World War II and nearly sixty three years have past since the bombing, in all probability these men have most likely passed away.

A. IMAGE ACQUISITION

My undergraduate degree is in journalism, and for this project I sought to illustrate the events of World War II using historical photographs from the period, which required me to obtain the rights to publish these photos. After researching the problem, I was able to obtain images from two primary sources.

1. Densho.org

Densho.org is a non-profit organization dedicated to preserving the Japanese American experience during World War II. Through their website I was able to submit an application detailing my thesis and request access to their archive of images. Once approved, I had access to thousands of images that detailed the experiences of Japanese Americans during World War II.
2. The United States National Photographic Archives.

After researching the process to acquire images from the national archives, I traveled to College Park, Maryland to visit the national archives. The archives function like a library for the nation's images and allows patrons to search the archives for images pertaining to their specific subject.

After viewing a multimedia tutorial on the rules governing the handling of images I was issued a research card and allowed to submit a search request. An archivist was assigned to assist me and over a two day period, I searched through thousands of images of World War II. When I found an image that I thought was relative to my project I was allowed to scan it into a laptop computer using a flatbed scanner that I had brought with me to the archives.

B. ACQUISITION OF VIDEO CONTENT

UNITED STATES:

The Smithsonian Institute

Through the Smithsonian Institute's web site I was eventually able to make contact with Mark Taylor, an archivist with the National Air and Space Museum. I sent an e-mail to Mr. Taylor detailing my thesis and he sent me a reply detailing the process for obtaining video footage from the National Air and Space Museum. The museum's normal fee for conducting a search of the archives was $50 per hour with a three hour minimum, however Mr. Taylor was nice enough to waive his fee and after searching the archives he sent me a list of 233 titles that he felt were relevant to my project. The list contained a brief synopsis of each title. The cost restraints (each title required a $40 fee to cover the cost of transferring the film to VHS format) I selected five titles at a cost of $200.
Jeanne Wakatsuki Houston

Through my stepfather I was able to make contact with Jeanne Wakatsuki Houston, author of the book *Farewell to Manzanar*, which chronicles her experiences as a seven year old internee at the Manzanar War Relocation Center in Southern California. I arranged to record a video taped interview with Mrs. Houston during my spring break from RIT in March of 2007 at the home of my parents in Soquel, California.

Sam Sakamoto

Sam Sakamoto, a World War II veteran who served with the U.S. 442nd Regiment. The 442nd was an all Japanese unit that was formed in 1946 and sent to Germany to fight in the European theatre. Mr. Sakamoto agreed to let me conduct a videotaped interview at my parents house in Soquel, California in March of 2007.

JAPAN:

Early in the planning for my thesis I was able to make contact with Natsuki Okita of the Hiroshima Peace Memorial Museum via the museum’s web site. Ms. Okita coordinates media relations for the museum and was an invaluable help to me with this project. Through her, I was able to arrange interviews with four Hiroshima survivors as well as arrange for an interpreter to translate for me during the interviews.

III. DESIGN CONSIDERATIONS

Color Scheme:

I chose a monochromatic color scheme for my project as I felt the extensive use of black and white images necessitated a muted color pallet that would complement the images. For the rollover effects I selected a lighter shade of brown. While researching the project I discovered brown has a reoccurring theme that linked all three of the topics.
• When Japanese Americans were relocated to internment camps, the camps were often located in desert or isolated areas where brown was the primary color.

• During the Manhattan Project research was conducted in the New Mexico desert at Alamo Gordo, which is a brown landscape.

• Following the bombing of Hiroshima, the center of the city was reduced to rubble, and when viewed from appeared a light brown color.

Section Designs
Intro Pages

Countdown to Hiroshima

On December 7th, 1941 the Japanese launched a surprise attack on the U.S. Pacific Fleet stationed at Pearl Harbor. In response to the attack, the United States declared war on Japan and entered World War II. Among the many effects of the attack, the U.S. began a new conversation about developing the world's first atomic bomb. This little known fact is the reason for the project's attention to the development and implementation of the atomic bomb.

Figure 1

For the introduction to the project I sought to illustrate the attitudes that were prevalent following the Japanese attack on Pearl Harbor. The project begins with some brief text explaining the events that unfolded on December 7, 1941. I used the pixel font Tenacity for the body text as it is easy to read even at a relatively small size. Once the user has read the text they may mouse click on the begin button to enter the project. As the project begins, audio from President Franklin D. Roosevelt's December 8, 1941 address to congress requesting a declaration of war against Japan plays. As the audio plays, a series of images depicting the devastation the attack on Pearl Harbor

5.
had on U.S. forces in Hawaii fade in and out. I separated the photos with statistics from the attack, such as the number of people killed in the attack and the amount of ships that were destroyed.

The intent here is to convey the sense of betrayal that many Americans felt towards the Japanese following the attack on Pearl Harbor and how these feeling affected the lives of Japanese Americans living throughout the United States.

OPENING NAVIGATION

For the opening navigation I sought a clean design that used imagery to illustrate each of the four topics. I selected images that I felt were iconic to the subjects they represented and used them as the introductory navigation for the project.
The four topics are:

1. Japanese Internment
   I selected an image of a World War II era poster ordering people of Japanese ancestry to report to relocation camps.

2. Manhattan Project
   I selected a photograph from the national Archives of a mushroom cloud rising above the New Mexico desert following the July 16, 1945 Trinity Test—the first successful detonation of an atomic bomb.

3. The Mission
   I chose to represent the section outlining the mission with a photograph of the Enola Gay landing at Tinian Island following the August 6th, 1945 bombing of Hiroshima.

5. Credits
   I wanted the credits page to reflect the personal nature of the project, so utilizing the woodshop at Rochester Institute of Technology I hand made a reliquary box and used it to frame a photograph of my father taken during the war. I was able to contact the military and obtain replacements of all the medals my father had earned throughout his military career and I mounted the photograph of my father aside his medals on a piece of red velvet material inside the reliquary.
SECTION 1: JAPANESE INTERNMENT

On December 6th, 1941 Japanese Americans were our friends, neighbors, and coworkers. Following the attack on Pearl Harbor they became the enemy. For the Japanese Internment section of my project I illustrated this transformation by using imagery from the period that depicted the hostile climate that many Japanese Americans experienced following the Pearl Harbor attack. This section includes 5 sub-sections.

A. AFTER PEARL

After Pearl Harbor is a brief chronicle of what life was like for Japanese Americans after the attack on Pearl Harbor. For the section I give a brief overview of the anti-Japanese attitudes many Japanese Americans faced after the attack and illustrate this by including photos from the period depicting the anger that was aimed at them. An example of this is the war propaganda posters produced by both the United States government and private U.S. companies which portrayed all Japanese as plotting against U.S. forces.
Throughout the war Japanese Americans were subject to the racist views of many Americans. I utilized historic photographs to illustrate the anger that many Americans directed towards Japanese Americans.

War propaganda posters produced by both the United States government and private companies illustrate the U.S. sentiments towards the Japanese during World War II.

One such example was the Tokio Kid, created by Douglas Aircraft Co. and used to encourage employees to work hard for the war effort.
For the section detailing Executive Order #9066 I felt it was important the user be able to view the document in its entirety. I created a slider bar that enables the user to scale the document up and, by dragging with the mouse, view the complete text of the document.

C. RELOCATION
The section on relocation uses historical photos to show the forced relocation of Japanese Americans during World War II. I used images from Densho.org to illustrate the hardships that this forced relocation inflicted on Japanese Americans.

**D. THE CAMPS**

![Figure 16](image)

Japanese Americans load their belongings into trucks during the forced relocation.

![Figure 17](image)

A young Japanese boy waits for the train to bring him to a relocation camp.

![Figure 18](image)

Countdown to Hiroshima

*Figure 18*
During the war, the United States created ten internment camps located in various remote areas throughout the country. For this section, I wanted the user to get a sense of the desolation of the camps. I created an interactive map that allows the user to choose any of the ten camps. Once selected, a brief description of the camp appears, and the user can select from a gallery of images that depict what life was like in that particular camp.

For the section profiling the Manzanar Relocation Camp, I included the videotaped interview I conducted with author Jeanne Houston along with images that illustrate life in the camp.

E. THE 442ND.

On February 1, 1943, President Roosevelt announced the formation of an all-Japanese unit, the 442nd Regimental Combat Team. I felt it was important to include a section on the 442nd as
although they were subject to internment many Japanese Americans maintained their loyalty to the United States. I designed the section to follow the same design elements that I had outlined in previous sections within my project. I introduce the section with a brief introductory text pertaining to the formation of the unit and include a gallery of images of 442nd members in action.

Section detailing the 442nd Regiment includes an interview with 442nd veteran Sam Sakamoto

SECTION 2: MANHATTAN PROJECT

Members of the 442nd fire a mortar round against German positions in World War II.
I designed the Manhattan Project section to chronicle the development of the atomic bomb from its earliest stages through to the first successful detonation of the device. The section begins with a brief synopsis of why the Manhattan project was started and gives the user the option of selecting four sub sections.

The sub sections include:

**A. THE LETTER**
Contains a copy of Albert Einstein's August 2, 1939 letter to President Franklin D. Roosevelt. Informing him of Germany's experimentation with atomic energy and urging him to create a nuclear weapons program for the United States. The section functions much like the one created for the copy of Executive Order #9066—a slider bar allows the user to enlarge the document and view the text in its entirety.

**B. THE SCIENTISTS**
Is a gallery of images that contain biographical information on the most notable scientist of the Manhattan Project. When the user selects a scientist an image of the scientist is displayed on the screen accompanied by a brief biography of the
scientist. I would have preferred to use an image of all the scientists gathered as a group, but was unable to locate one and decided using thumbnail images of each scientist was my second best option.

C. TRINITY

The section detailing the Trinity Test contains a one minute video that chronicles the July 16, 1945 Trinity Test in the remote desert near Alamo Gordo, New Mexico. For the section I edited historical video that I received from the Smithsonian Institute and recorded audio of myself narrating the events that transpired that day.

In the right corner of the image I created an icon of a camera. When the icon is pressed an image of the crater that was created by the atomic explosion slides out from the right of the screen. The
image serves to further illustrate the destructive power of the atomic bomb and assure the user that the United States was fully aware of the destructive power of the bomb before they dropped it on Hiroshima.

D. LITTLE BOY

For the section detailing the "Little Boy" bomb I constructed a three dimensional model of the bomb in Cinema 4D. Arrows positioned below the model allow the user to rotate the model along the horizontal axis for a 360 degree view of the bomb.

I also created a brief animation that explains how the bomb works in relatively unscientific terms that I felt the average person could comprehend.
The 30 second animation outlines the scientific principles of the atomic bomb and uses simple graphics to convey the principles that were used to create the atomic blast.

SECTION 3: THE MISSION

The category detailing the mission is an overview of the August 6th, 1945 mission of the Enola Gay and the effects the mission had on the people of Hiroshima. To chronicle the events I created four sub sections.

The sub subsections include:
A. THE PLANE

Is a detailed overview of the Enola Gay. For it, I photographed a series of images of a scale model of the Enola Gay. I rotated the plane slightly after each photograph and then combined 72 images of the plane in Flash to create an effect similar to the one I utilized to illustrate the "Little Boy" bomb; where the user can use the arrow button to rotate the plane and view it from all angles along the x axis.

I also created invisible hot spots on the plane's tail, engine, and fuselage, that reveal information, such as the origin of the plane's name when the user clicks on one of them.
B. THE CREW

I chose to illustrate the section on the crew of the Enola Gay using a photograph I acquired through the national archives. It is a photograph of the crew of the Enola Gay standing in front of one of the base’s offices. I created a beige semi-transparent overlay of each of the crew members so that when the section begins each member is masked and a brief biographical overview of the crew is displayed. When the user clicks on a crew member, the overlay for that crew member disappears and biographical information relevant to that specific crew member fades in to the left of the photo.
For the section I thought it was important to use the image as a whole and not isolate each member in a tight head shot. I felt to do so would resemble a police mug shot and portray the men in a negative light. I took this approach for several reasons. Over the years the crew of the Enola Gay have been vilified for their involvement in the bombing of Hiroshima and to this day the surviving members receive hate mail on the anniversary of the bombing. I decided to use the image as a whole because it portrayed the men as a unit. They can be scene relaxed and smiling. In it George Caron, the planes tail gunner is seen wearing a Red Sox cap and I felt the photo as a whole represented the crew as men who were given the order to drop the bomb and followed it. I created a toggle button in the upper right corner of the section that allows the user to completely turn off the overlay and see an unaltered view of the original photograph. For the toggle button I used the silhouette of Paul Tibbets. The commander of the Enola Gay.

C. THE MISSION

Throughout the twelve hour flight of the Enola Gay Captain Robert Lewis kept a log book chronicling the events of the flight. In the section detailing the mission I translated Lewis' log book entries into a visual form by creating a three minute animation re-creating the August 6th, 1945 flight of the Enola
Gay. I again photographed a scale model replica of the plane and used a series of motion tweens to give it the illusion of flight. At events corresponding to the events detailed in Lewis' log book a movie clip with a brief explanation of the event fades in and remains on the screen for enough time for the user to read it. It then slowly fades out until the next event is logged.

Lastly, I created a panel to the left of the animation that functions as a navigation window. The window shows an aerial view of the islands of Tinian, Iwo Jima, and Japan and gives the user a visual clue as to where they are in relation to the flight of the plane.

After conducting user testing of my project, I created a series of buttons below the navigation window that give the user the option to jump forward or backwards within the animation. I designed the buttons to resemble the three islands in the animation. Pressing one of the buttons causes the animation to go to the island corresponding to the button pressed.
While the previous sections of my thesis have dealt with the bombing of Hiroshima from the American perspective, for the last section of my project I chose to detail the bombing of Hiroshima from the perspective of the Japanese.

The magnitude of the information I wished to convey in this section necessitated the need to create sub-sections within the Hiroshima section. I created the following subsections.

I. HISTORY

I open the section with a brief overview of the city of Hiroshima that includes a 1935 photograph of Hondori Street, a popular city street in Hiroshima. I created a camera icon in the lower left corner of the screen. When the icon is pressed, a Japanese war propaganda poster depicting two allied soldiers, one British and one American, cowering on the deck of a burning Allied ship slides out from the right of the screen. After using the anti-Japanese poster produced by the U.S. in the section on Japanese Internment I felt it was necessary to show a similar poster here to illustrate the fact that the Japanese also produced war propaganda posters that exaggerated the ethnic features of their enemies and portrayed their own culture as superior to the others.

II. THE BOMBING

The section that details the physical effects the bomb had on the city was perhaps the most challenging to design. In the section I sought to depict how three separate components of the bombing affected the city. The three components were:

- Blast
- Heat
- Radiation
When I visited the national archives, I discovered two photographic images that I felt could strongly illustrate the effects the bomb had on the city of Hiroshima. The first was an aerial view photograph of the city taken on April 13, 1945 approximately four months before the bomb. The second photograph was an aerial photograph taken from the identical perspective, but photographed four days after the bombing. I knew from my research that the Allies specifically made a point of not bombing Hiroshima with conventional weapons prior to the atomic bombing as they wanted to be able to attribute all of the damage caused to the city to the atomic bomb.

In an effort to utilize the two photographs, I open the section with the photo of a pre-bombed Hiroshima on the screen. I created a series of icons representing various effects of the bombing and
controls that could be used to manipulate the perspective of the photograph.

I nested this icons in what I call the command bar. It is strip at the bottom of the photograph that holds all the icons. When the user moves the cursor over the aerial photograph the command bar slides in from the bottom of the image.

I created four icons on the left side of the command bar to represent the components of the bombing. The first icon is represented by a silhouette of the Enola Gay. Its function is to clear the aerial photograph of any overlays that have been created using the other icons and in affect give the user an unobstructed view of the original photograph.

The second icon is the blast icon, which I represented by a series of circles arranged to simulate a shock wave pattern. When pressed a red circular overlay representing the blast radius of the atomic bomb appears on the aerial photograph of Hiroshima. The overlay shows the hypocenter, (where the bomb exploded) and the approximate two kilometer radius that it effected.

Three overlay states
I placed a camera icon on the lower left of the section. When pressed a photograph that illustrates the effects of the types of injuries caused by the blast slides out from the right of the screen.

The third icon is represented by fire and, when pressed, an orange overlay appears on the images and highlights the areas that were effected by the heat generated from the bombing. When the user clicks on the camera icon a photograph that illustrates the types of injuries caused by the heat slides out from the right of the screen.

The last blast component icon represents radiation. For the icon, I used the international symbol for radiation. When the icon is pressed a semi-transparent overlay of the symbol appears overlaid on the images and represents the radius of the area effected by the bombs radiation. Again, when the user clicks on the camera icon an image that is representational of the injuries caused by radiation slides out from the right.

I created two icons to the right of the overlay icons to represent the before and after states of the bombing. For the design of the icons I researched military symbols and came across a United Nations listing of military symbols. The United Nations developed a universal set of symbols that its forces could use globally to identify places and events relating to combat.

I adopted the United Nations symbols denoting a reconnaissance plane for the icon representing a pre-bombed Hiroshima and the U.N. symbol for a bombed target as the basis for the post bombing icon. The original United Nations designation for a bombed position is a red triangle with the word bomb appearing within its borders. Due to size constraints, I slightly modified the symbol for use as an icon by replacing the word bomb with a capital B.
When the section opens the photograph depicting a pre-bombed Hiroshima is visible and the icon representing a pre-bombed Hiroshima is highlighted. By clicking on the two icons the user can toggle between the image of Hiroshima taken before the bombing and one that was taken a few days after the bombing.

![Figure 48]

To further enhance the experience, I created plus and minus symbols that allow the user to increase and decrease the size of the aerial photographs. Pressing the plus symbol allows the user to enlarge the photographs for a close up view of the damage. I created a drag function that allows the user to click and drag on the map, so even though the images is enlarged significantly the user still has the option to navigate through the entire image by dragging through it. Conversely, the user can use the minus symbol to scale the image down to its original size.

### III. CITY IN RUINS

![Figure 49]
On the basement wall of the Hiroshima Peace Memorial Museum, not far from where I would conduct my interviews with the Hiroshima survivors is a composite image of the city of Hiroshima taken on October 1st, 1945. The image, taken by Shigeo Hayashi shows the charred remains of a once prosperous city. Upon viewing it, I was overcome with the shear magnitude of the damage the atomic bomb caused and asked the museum staff if I could incorporate the image into my project.

They agreed to my request and supplied me with copies of the images used to create the panoramic. While I was excited to be given access to such a powerful image, incorporating into my project presented several problems. The museum supplied me with a disk that contained sixteen separate images. When the images were combined they made up the complete panoramic image, however the images had to be arranged along an arch to properly fit together and it was my desire to create a non arcing panoramic image.

I am very confident in my Photoshop skills, but fitting the images into a seamless composite proved to be a somewhat maddening experience, much like trying to put together a jigsaw puzzle where the pieces do not exactly fit together.

In the end, I was able to successfully blend the images together with a minimal amount of distortion caused by the misalignment of the images. I used the clone tool sparingly in an effort to blend the images together. I did not want to compromise the integrity of the photograph by manipulating it to the point that it did not represent what was in the original photograph. I thus used the minimal amount of Photoshop tools required to blend the image into one composite image.

Scrolling through the image is controlled by the placement of the cursor. Positioning the cursor to the left of the center causes the image to scroll left. Positioning the cursor to the right of center causes the cursor to scroll right. Lastly, positioning the cursor in the center of the image causes the scrolling to stop. I created a series of symbols to represent the various scrolling states and the symbol corresponding to the current scroll state appears when the user rolls over the panoramic image of the ruins.

Figure 50
When the image scrolls to the point where the ruins of the Hiroshima Prefectural Exposition are visible a camera icon fades in to the right of the image. Pressing the icon causes an image of the exposition taken before the atomic bombing to slide out from the right of the screen. I added this feature to create a contrast between what the exposition looked like before and after the bombing.

IV. THE SURVIVORS

On March 5th, 2007, while on Spring Break from Rochester Institute of Technology, I flew to Hiroshima Japan to conduct video taped interviews with survivors of the atomic bombing of Hiroshima.

I could have easily obtained the rights to previously recorded interviews with the bombing survivors, but I felt it was duty to conduct the interviews myself. I wanted to meet the survivors and have them tell their stories in their own words. I did not want to bombard the user with more statistics of the bombing. I wanted them to look into the eyes of someone who had experienced the bombing first hand and feel a sense of their loss.

Japan had a profound impact on me. It is one thing to read an account of the bombing in a history book, but it is quite another experience to walk the streets of the city and see the monuments to
the dead and get a sense of the sadness that still lingers in Hiroshima 65 years after the atomic bombing.

I interviewed four survivors of the bombing while in Japan, and each survivor had their own personal tale of tragedy to tell. I think what struck me most about the interviews is the fact that the voices of those I interviewed will soon become silent. When the bomb exploded in 1945, the people I interviewed were children. All of them were under the age of 18 and most were in middle school at the time of the bombing and had been assigned to create fire breaks throughout the city when the bomb exploded. As they sat before me in a small basement room at the museum they were in their seventies and eighties and I was struck by the realization that in twenty or thirty years there will be no survivors left to tell their story.

My first interview was with Kohji Hosokawa, who was 17 years old at the time of the bombing. He was approximately 1.3 meters from the hypocenter at the time of the bombing and I recorded him as he told the story of how he survived the explosion and later learned of his younger sister Yoko’s death.

After Mr. Hosokawa’s interview, I would interview three more survivors of the bombing over
a period of two days. For the recording, I used a photographic umbrella mounted on a light stand. I had purchased both in anticipation of my trip. I positioned the umbrella at a 45 degree angle to the subject and bounced a small floodlight into the umbrella. The resulting light produced a somewhat dramatic lighting effect and I was pleased with the results. For the background, I hung an illustration of an aerial view of Hiroshima that I found affixed to the wall of the museum room I was using.

Recording the audio for the interviews presented me with an unforeseen problem. I had planned on using an external microphone to record the audio of each survivor, but I had not considered the need to incorporate the voice of the translator into the recording. Isolating the survivor’s audio would have created an imbalance in the audio levels between the survivor and the interpreter. My solution was to record the audio using the camera’s internal microphone and position the interpreter next to the survivor, but just out of view of the camera. As a result, the survivor and interpreter are at roughly the same distance from the microphone and the audio level are consistent throughout the interview.

I decided to take a portrait of each survivor and use it as the lead image for each interview. After the interviews concluded, I asked each survivor if they would accompany me on a walk through
the museum grounds and allow me to photograph them in front of one of the monuments. After walking the grounds, I selected the ruins of the Hiroshima Prefectural Exposition as the background of each photograph. The ruins of the exposition are now simply known as the A-bomb Dome and have become the most recognized symbol of the bombing. I photographed a series of images of each survivor standing in front of the dome and selected the one that I felt best represented them as the lead in for the section containing their interview.

Upon returning to the United States, I edited the video in Final Cut Pro. To maintain the overall design style of the project, I converted the video footage to black and white. Where I felt it was appropriate, I edited in historical footage I obtained from the Smithsonian into the interviews, but kept the original audio. As a result, the survivor's audio serves as narration while images of the bombing are played.
I designed the credits page to outline my motivation for doing this project and thank all of the people who went out of their way to help me complete it. In the text of the section, I include a brief explanation of why I did the project and acknowledge all of the people who helped me along the way.

I created a set of arrows that allow the user to advance through the text and included a set of numbers that function as a navigation tool by highlighting the current page of text the user is viewing.

To the right of the text, I include an image of the reliquary box I made in RIT’s woodshop. When the user clicks on a medal, an
enlarged view of the medal fades in and is accompanied by the name of the medal and a brief explanation outlining what the medal represents.

In the corner of the section, I placed a camera icon that, when pressed, displays a grainy black and white photograph of my father standing in front of the Enola Gay. I felt it was important to include this image in my project as its discovery is what led to my fascination with the events surrounding the bombing of Hiroshima and was ultimately the motivation that led me to do this project.

CONCLUSION:

Countdown to Hiroshima is the culmination of my studies at Rochester Institute of Technology. I have dedicated the past eight months of my life to its completion. During these eight months I have spent countless hours in the library researching the events that led to the August 6th bombing of Hiroshima and have made every effort to include these facts in my project in an objective manner that neither vilifies or venerates the United States or Japan. I have interviewed Japanese-Americans who were interned during the war and included sections that chronicled their experiences within my project. Finally, I traveled to Japan in an effort to understand the Japanese perspective of the events. The resulting multimedia project is a historically accurate representation of the events that led to the creation and implementation of the atomic bombing of Hiroshima and I feel that my project is one of the most comprehensive multimedia pieces pertaining to the bombing that has been produced to date.
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World War II era poster ordering people of Japanese ancestry to report to relocation camps. Image courtesy of Densho.org

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Photo taken of the mushroom cloud rising upwards after the July 16, 1945 of the Trinity Test explosion. Image courtesy of the United States National Archives

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Photo of the B-29 Bomber Enola Gay about to land on the island of Tinian following the bombing of Hiroshima on August 6, 1945. Image courtesy of the United States National Archives

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Photograph of the reliquary box that displays my father’s medals and an image of him taken during World War II. Image by David S.R. Bridges

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Image courtesy of Dengo.org

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Courtesy of Densho.org

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Image courtesy of Densho.org

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Image courtesy of Densho.org

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Image courtesy of Densho.org

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Historical United States military photograph of an aerial view of the city of Hiroshima prior to the August 6th, 1945 bombing. Photograph courtesy of the United States National Archive.

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Screen shot of the City in Ruins sub-section of the project which utilizes a panoramic image of Hiroshima to show the damage caused to the city by the atomic bomb.

Enlarged graphic of the navigation icons used in the City in Ruins sub-section.

Screen shot of the City in Ruins sub-section with an image of the Hiroshima Prefectural Exposition photographed before the bombing (right) and the panoramic image showing the ruins of the exposition (left).

Screen shot of The Survivors sub-section of the project which details the stories of three Hiroshima survivors.

Image of the video lighting I set up for the first day of interviews while in Hiroshima, Japan.

Image of the video lighting I set up for the second day of interviews while in Hiroshima, Japan.

Portrait of Hiroshima survivor Kohji Hosokawa.

Portrait of Hiroshima survivor Isao Aratani.

Portrait of Hiroshima survivor Noriko Ueda.

Screen shot of Credits section of the project which includes the reliquary box I made and used to store my father’s photograph and metals he earned during his military career.

Screen shot of Credits section featuring a close up of the Armed Forces Reserve Medal my father earned during his military career.

Image of my father standing in front of the Enola Gay during World War II.
Bibliography:

The Silverplate Bombers
Richard Campbell
McFarland & Company, Inc, 2005

The Silverplate bombers is a comprehensive history of the B-29 bombers and the men of the 509th Composite Group who trained for the atomic mission.

The Spirit of Hiroshima
A publication of the Hiroshima Peace Memorial Museum
The City of Hiroshima, 1999

The Spirit of Hiroshima is a book produced by the Peace Museum that chronicles the bombing of Hiroshima. The book details the events that led to the atomic bombing of Hiroshima and chronicles the affects the bombing had on the people of Japan.

The Manhattan Project
A Documentary Introduction to the Atomic Age
Michael B. Stoff, Jonathan F. Fanton, R. Hal Williams

Farewell to Manzanar
Jeanne Wakatsuki Houston and James D. Houston
New York : Bantam Books, 1973

Internet:

http://www.un.org
July 15, 2007
Revised Marketing Plan:

Now that my project is complete I plan on submitting it to Communication Arts 14th Annual Interactive Competition. I also will submit a copy to the Hiroshima Peace Memorial Museum for consideration as a kiosk display for their museum.
Problem Statement:

As a society, Americans tend to forget the incredible atrocity that was Hiroshima. We point to the bombing of Pearl Harbor as an example of Japanese aggression, but forget that Pearl Harbor was a military target where the loss of life, although tragic, pales in comparison to losses suffered at Hiroshima.

Was the bombing of Hiroshima necessary? The United States, the Soviet Union and Britain had approved military plans for an invasion of Japan and drafted a declaration to be sent to the Japanese demanding their unconditional surrender. On July 26, 1945, the Potsdam Declaration was broadcast to the Japanese by the allied forces. The Japanese government decided that a reply should await the result of peace overtures to the Soviets. Prime Minister Suzuki announced to the world on July 28 that he would ignore the ultimatum. In the months prior to the bombing the allied forces continued to advance against the Japanese armies and many historians have speculated that a Japanese surrender was only a matter of time.

On August 6th, 1945 at approximately 8:15 a.m. the United States dropped an atomic bomb on the Japanese city of Hiroshima. The bomb, which had been given the nickname “Little Boy”, was equal to 13,000 tons of TNT and 45,000 of the largely civilian population were killed instantly; vaporized by the heat of the initial blast or burned by the resulting fireball that would engulf the city. In the years following the bombing, a thousand more would succumb to radiation poisoning. By the end of 1945, 70,000 residents of Hiroshima would die from their injuries. A conservative estimate puts the death toll from the Hiroshima bombing at over 200,000.

For my thesis project, I will create an interactive narrative using Adobe Flash to detail the bomb-
The narrative will be an objective look at the circumstances surrounding the bombing and will include historical photos and video interviews with Hiroshima survivors and allied personnel involved in the bombing. It can be used as a tool to educate people on the bombing and the subsequent effect it had on the Hiroshima survivors, American servicemen, and world culture as a whole by allowing the user to hear the accounts of the bombing directly from the men and women who experienced it firsthand.

**Methodology:**

For my thesis project, I will create an interactive, historically accurate, multimedia presentation detailing the bombing of Hiroshima, Japan during World War II. The project can be used as an educational tool by people of all ages. It will be created using various computer software such as Adobe Flash, Adobe Photoshop, and audio and video software that have yet to be determined.

The design will utilize historical photos and documents mixed with present day interviews and photos of Hiroshima survivors and other people connected to the bombing. It will not only detail the bombing itself, but will include historical information pertaining to the Manhattan Project, the Enola Gay, and the historical consequences of dropping the bomb. The estimated time to complete the project is six months and I hope to begin the project in earnest at the beginning of winter 2006 quarter. After doing background research on the bombing, I hope to travel to Hiroshima during the Christmas break and begin interviewing people for my project.

Although the project will be of particular interest to people in the United States and Japan, the geographic location of the user will be of little relevance. The site will be written in English and understanding English will be a prerequisite to utilizing the site. The project will appeal to a wide demographic of people of both sexes and all ethnicities and is meant to be an educational tool that provides historical information on the bombing. The project is designed to be an educational resource and the user will not need to know any background information regarding the
Hiroshima bombing. The project will be most beneficial to children aged 12-17 who are studying U.S. history, but because of the narrative format, people of any age will benefit from viewing the project as it features video interviews of people who were directly affected by the bombing. The economic status of the user should not be relevant. The only requirement is that the user has an interest in the subject matter and access to a computer capable of displaying the information and audio content. For those who do not own a computer, many public libraries offer their patrons the use of computers equipped with Internet access for little or no cost.

**Literary Review:**

My thesis proposal is to design an interactive narrative on the bombing of the Japanese city of Hiroshima on August 6, 1945. My project would include photos, audio interviews, and historical documents related to the events that lead to the Japanese surrender and the end to World War II. My research focus for this project included historical accounts from both the perspectives of the Japanese survivors and the Americans involved in the planning and implication of the bombing. I also researched books on photojournalism. These books gave technical information such as the types of film to use for certain situations and gave advice on the aesthetic qualities of photojournalism. Lastly, I focused on the technical aspects of online journalism. These resources dealt with the technical aspects of designing a journalism presentation using software such as Adobe Flash.

**Books:**

Hiroshima
John Hersey
Alfred A. Knopf 1946

Hiroshima provides a detailed account of the August 6th, 1945 bombing of the Japanese city of Hiroshima. It details the account by telling the stories of six survivors of the bombing and focuses on what those survivors witnessed following the explosion of the atomic bomb. This book is a useful historical reference in understanding what survivors of the atomic bomb endured.

Hiroshima’s Shadow
What Hath Man Wrought!
David Lawrence
U.S. News and World Report
August 17, 1945

This book is a collection of essays written by historians and scholars about the 1945 bombing of Hiroshima. The essay I read was written shortly after the bombing and was a condemnation of the U.S. government's decision to drop the atomic bomb on a largely civilian target. The book is useful in understanding how society viewed the decision to use atomic weapons during World War II.

Enola Gay
Gordan Thomas, Max Morgan Witts
Stein and Day, 1977

Enola Gay is a historical account of the bombing of Hiroshima that focuses on the development of the atomic bomb and the mission of the B-29 bomber Enola Gay. It recounts the historical facts from the development of the atomic bomb in New Mexico to the flight of the Enola Gay. The book is a useful reference to the bombing and gives American perspective to the bombing.

Hiroshima the Legacy
The Sunday Herald
July 31, 2005
Torcuil Crichton

The article focuses on the 60th anniversary of the bombing of Hiroshima and includes interviews with Hiroshima survivors who discuss the impact the bombing has had on their lives over the past 60 years. This article is a valuable historical reference on both the physical and emotional damage the bomb inflicted.

Photojournalism
Associated Press Guide to Photo Journalism
Brian Horton
McGraw Hill, 2001

This book gives instructional advice on taking photo journalistic images. It discusses both the technical aspects of photojournalism, such as proper lighting, and the aesthetic aspects such as composition and cropping and would be useful to study prior to doing a photo project.

Photojournalism: The Professional's Approach
Kenneth Kobre
Butterworth-Heinemann, 1941

This book demonstrates proper techniques and equipment selection pertaining to photojournal-
ism. It covers what types of film to use in different situations and suggests different techniques for photographing journalistic content. The book would be useful in researching photographic techniques prior to starting a photo project.

Internet:

www.history.com
October 11, 2006
This site features a brief synopsis of the Hiroshima bombing as well as articles pertaining to the Second World War. The site’s multimedia content contains QuickTime videos of the devastation the bomb produced.

www.pcf.city.hiroshima.jp/index_e2.html
October 11, 2006
This site is the official site for the Hiroshima Peace Memorial Museum and contains detailed information about the bombing. It features historical artifacts relating to the bombing and multimedia content, such as interviews with Hiroshima survivors.

www.Interactivenarratives.org
October 11, 2006
This site focuses on journalistic multimedia content and provides examples of effective visual storytelling by providing links to sites that feature strong multimedia content. It also shares reviews of equipment, such as microphones, used by industry professionals. This site would be useful for noting what has been done with regards to multimedia content.

www.magnuminmotion.com
October 11, 2006
This site offers examples of multimedia photojournalism projects based on the work of Magnum photographers, recognized as some of the most talented in the photojournalism industry and is useful as a resource to view current trends in multimedia content.

Magazines:

Eyewitness to Hiroshima
Time Magazine
August 1, 2005 Vol. 166 No. 5
Budget: $3,150

A good portion of my thesis involves interviewing, which requires a significant amount of travel. I am planning to travel to Hiroshima, Japan to interview survivors of the World War Two bombing. I also plan on interviewing members of the 509th composite group, the group that dropped the atomic bomb on Hiroshima. The second part of my budget entails photography supplies as I plan on photographing and videotaping the subjects myself.

Travel:
- Japan (Air Travel) $1,550
- Japan (Hotel) $500
- Japan (Food) $150
- U.S. (Rental Car) $200
- U.S. (Hotel) $250

Total Travel: $2,650

Photo Supplies:
- Film $250
- Equipment $250

Total Photo: $500

Total Thesis Project: $3,150
Marketing Plan:

I plan on submitting my completed thesis project to the Siggraph Space-Time 2007 Conference Educational Competition under the interactive category. I also plan on taking photographic portraits of all the subjects of my project. For the portraits, I would like to photograph each individual holding a photograph of themselves from 1945. I am sure this would be possible with the U.S. servicemen, but it may not be possible with the Hiroshima survivors as most of their possessions were likely destroyed during the bombing. In lieu of a 1945 photograph of the individual Hiroshima survivor, I would photograph the survivor holding a historical image depicting the damage the atomic bomb caused to the city of Hiroshima. I plan of submitting these photographs to photography galleries, such as the Exposure Gallery in San Francisco and various publications such as American Photographer.

As far as marketing on the RIT campus, I would like to see if I could arrange to have a collection of the portraits I photograph for the project displayed on the RIT campus. I would also use some of the images I photograph to create a poster advertising my thesis project.