ALTERNATE REALITY GAME FOR WPI ADMISSIONS

An Interactive Qualifying Project Report
submitted to the Faculty
of the

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the
Degree of Bachelor of Science
by

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Abstract

Alternate Reality Games have been used as effective marketing tools in several industries, including film, gaming, television, automobiles, and apparel. The goal of this project was to investigate the use of alternate reality games to promote other industries, specifically, university enrollment at WPI. The project team ran an alternate reality game for admitted students during April, and compared enrollment statistics to previous years. A particular goal of the project was to boost the number of women enrolling at WPI.

1 Introduction

1.1 Problem Statement

Each year, around between 5,000 and 6,000 young men and women apply to WPI. Of those applicants, WPI accepts around 3,300. The WPI admissions staff sends out acceptance letters to these admitted students by April 1st. The students then have one month, until May 1st, to decide whether or not they want to enroll at WPI. Of those 3,300 admitted students, approximately 750, or 23%, of them ultimately decide to enroll at WPI.

The WPI Admissions staff wants to increase the percentage of admitted students who ultimately decide to enroll at WPI, as one of the long-term goals of WPI is to achieve a higher undergraduate enrollment, increasing from today's roughly 2,800 undergraduate students to approximately 3,600. To meet this goal, the Admissions staff wants to explore additional avenues to reach out to the admitted students during the month of April, while they are deciding whether or not to enroll. During this decision period, the Admissions staff wants to keep WPI in the minds of the admitted students and hopefully encourage some of those students who might be on the fence to choose to attend WPI.

The WPI Admissions staff is seeking innovative ways to reach out to the admitted students, beyond the traditional acceptance package and scheduled campus visits. The goal of these outreach efforts is to provide more information about WPI to the admitted students, get them familiar with the school and involved in the WPI community, and in general promote the school in a positive and progressive fashion.

1.2 Goals

There are three main goals for this project.

The first goal is for the students involved, Chris, Joseph, Karin, and Richard, to work together as a team and apply their knowledge of computer science, game development, and interactive media to design, build, and run a successful and fun Alternate Reality Game. A successful game in this context is one which attracts a significant number of engaged and active participants (beyond the IQP team itself) who make meaningful contributions to the game and see it through to completion.

The second goal is for the project team to use their skills to solve a real-world problem by assisting the WPI Admissions staff in increasing the number of admitted students who decide to attend WPI. The team will apply game development principles to devise a new, engaging, and enjoyable way to promote WPI. To determine the success or failure of this

goal, the team will use a variety of tracking software and tools to record statistics on the people who visit game-related sites, as well as gather more qualitative information directly from the players themselves.

The third goal of this project is to highlight and bring attention to WPI's new Interactive Media and Game Development (IMGD) program. This project will allow us to show the administration, faculty, and even newly admitted students how IMGD skills and principles can be used to solve real-world problems. Hopefully, at least a few of the admitted students who participate in this project will enjoy the experience enough to want to become IMGD majors at WPI.

1.3   Project Overview

As stated previously, the primary goal of this project is to develop and run an Alternate Reality Game (ARG) for the admitted students. ARGs are immersive, interactive, community-building experiences, typically accessible through the internet. After initially proposing the development of such a game as a promotional tool to the WPI Admissions office and receiving the affirmative, the IQP team plotted out a schedule for game production, culminating with the launch and oversight of the game itself in the second half of D-term 2007. Through this process, the team kept in close contact with the Admissions office, giving frequent demonstrations of game content and ideas, as well as working to hone the project's focus and timeline.

During the first two terms (B06/C07) of the IQP, the project team developed the content and general structure of the ARG. In the early stages, this consisted of brainstorming plot and content ideas, as well as novel delivery methods for that material. As work progressed, the team implemented these ideas as deployable content – web puzzles, radio dramas, blogs, a web game – and also developed the framework for the community hub website, www.xbones.org.

In the final term of the project (D07), the team created a series of "rabbit holes," or entry points for the ARG, and planted these clues across the internet, on social networking sites like Facebook and MySpace. The largest such entry points came in the form of an elaborate arcade-style web game ("Tokyo: The Game") with numerous embedded references to the ARG's "Crossbones" secret society and pointers to their website, as well as live events staged during the "Closer Look" Admissions event on Wednesday, April 18th.

As the ARG ran, the team kept track of numerous statistics and facts involved with the game – most particularly web traffic metrics. These statistics were then analyzed and combined with more qualitative observations on the game to draw conclusions about the success of the project, with regards to meeting the three project goals enumerated above and satisfying the interests and needs of the WPI Admissions office.

1.4   **Results**

The primary goal of the project – to create an engaging and successful ARG – was conditionally met; the game attracted a reasonable number of players, including a mixture of on- and off-campus participants. A large proportion of these players chose to remain relatively anonymous and passive, but enough active participants joined in to make a driving force in the game's plot (through player-character interactions and puzzle solving). These players formed a community, as we had originally hoped, with its own social dynamics, traditions, and goals, based off of the initial ideas and guidance that we provided through the game's characters and content.

As will be discussed at length in sections 4 and 5, both the community hub website and the "Tokyo: The Game" achieved high, sustained traffic through the three-and-a-half weeks that the ARG ran, garnering good exposure and mindshare for WPI in general and the IMGD program in particular. According to the tracking service used throughout the game's sites (Google Analytics), the game also attracted a high percentage of repeat visitors and visitors who spent significant periods of time at the sites. To date, final statistics on the year's Admissions yield have not arrived, but in general, the game appears to have had a positive impact on its accepted-student participants, and some students participating in the game have stated (in-game) that they will indeed be coming to WPI in the fall.

The project was promoted heavily during Admissions' "A Closer Look" day, on April 18, both in the IMGD presentation to the students and in fliers and live contacts with students and parents at the event. The publicity for the game helped to show the diversity and depth of the IMGD program, and it engaged many students and parents who would not otherwise have shown any strong interest in the IMGD program. Prior to "A Closer Look," there was "Tokyo" itself, which was billed directly as the effort of IMGD students. Tokyo served as a more traditional introduction to IMGD and game development at WPI, providing some of the first concrete proof of the program's ability to produce both developers and finished, cohesive games.

2 Background

2.1   What is an Alternate Reality Game (ARG)?

An alternate reality game is many things. An alternate reality game is an interactive story played out in the real world, affected by the actions of normal people. An alternate reality game is an experiment in how much the average person will suspend their disbelief in order to make a story interesting. An alternate reality game is a global social network, bringing people together to solve puzzles and unravel the unknown. However, an alternate reality game is, to its players at least, not a game. It goes beyond the scope of a story or a movie or a game. It goes beyond any simple definition and cannot be placed into words in such a way that will ever accurately describe the experience that is an ARG. In a world where interactivity is key, alternate reality games are in a league of their own.

> "Imagine an event so powerful, so pervasive, that years after the initial exposure people who participated in it still gather to talk about it and long for the days when it actually took place. An event that participants willingly gave months of their lives to, without any thought of reward or recognition, in a collective effort to help others. How would you classify such an event, what would you call it, and how would you go about understanding it? Would you think it was something religious or spiritual, or perhaps even cultish?"
> -- Dave Szulborski, *This is Not a Game*

2.2   Multimedia

One of the elements of an ARG that makes it so versatile is its ability to exist in a vast array of media. While most ARGs primarily take place online, in a sort of "central hub" for the players, other media have been tried and have proven to be equally as strong in pulling in and intriguing players, many of which are not even aware they are playing a game. All it takes is a simple ad that catches a viewer's slightest attention to get players interested. While there is no defined set of methods to enter players into an ARG, there are certain ways that are most commonly used.

For a game that takes place both in the real world and in a fantasy world, the internet is the primary medium used in an ARG. Websites have the benefit of being privately-owned if necessary, at a low cost to those running an ARG. Oftentimes, a website for a corporation or society is necessary. If made to look professional or well-funded, it adds a sense of realism to the game. Players will be able to better immerse themselves if a medium like a website is made to look real enough to exist outside the game. In addition, websites are a powerful non-static medium. Pieces of the website can change as the gamestate changes, to reflect the current situation in the game. Best of all, websites can

be simultaneously the most easily, publicly accessible medium available as well as the most secure and difficult to enter. Passwords and security walls can be placed or displaced in order to prevent or allow players to access various points of a website.

An internet forum in particular is possibly the most useful piece of an ARG. As a hub and meeting place for players of the game, it provides a sense of community in a central location where people can come together and discuss the occurrences and recent events in the game. Players can ally together or split apart and face off in whatever way they find helps them best move through the story.

Paper media are also fairly common in ARGs. There are two forms of paper media commonly used in ARGS. If those running the ARG know their target audience well enough, sending items and rabbit holes through the postal mail provides a solid hook for players and non-players alike, and adds a significant sense of realism to the game. Receipt of real items and clues offline is a good way to immerse the players further. The popular ARG *I Love Bees* had, as one of its two primary rabbit holes, an event involving mailing out honey bears that contained within letters, which unscrambled to "I LOVE BEES".

Magazines are the other paper media which are becoming more commonly used in ARGs. A much more wide-spread but often more subtle medium for alternate reality, magazine ads and stories can give fictional companies and tycoons a foothold in the real world. No fake person could write an article, and no fake company would have ads, right? On top of being subtle enough to be both overlooked and believed, ads also find their way to people who normally would not care about something like an ARG.

Sometimes, a more commercial medium is required to spread hints and rabbit holes fast. In that situation, provided those running the ARG have enough money to cover the expenses, a television advertisement can open the door to millions of people willing to take that first step. Sometimes they appear in low-traffic slots in order to get a more centralized, focused group of players. Other times, ARGs will go as far as the Super Bowl, an event guaranteed to have millions of viewers glued to the commercials. Whichever way is chosen, television is a good way to obtain a large group of keen observers.

There is one form of ARG communication that tends to feel the most "real" to players. While reading something odd in a letter or a magazine or seeing something strange on TV or the internet may turn a few heads, the one method that demands attention is a simple phone call. While it makes a poor rabbit hole technique, sending a call through a public telephone is a quick way to entrance players and non-players alike. One of the most powerful moments in any ARG to date was the driving force of *I Love Bees*, where public telephones in dozens of cities in several countries were called and given pieces of a larger conversation. The players noted down these pieces and brought them together to find the bigger picture. After people discovered what was going on, the draw was immense. Some people flew to the other side of their respective countries just to receive

one of these phone calls. Having direct, real-time communication with the characters in the game can make an ARG a far more real and engaging experience.

2.3   Elements of an ARG

An alternate reality game is about more than just the media it is orchestrated atop. There are other things that go into an ARG that shape and comprise it. Entry points, storylines, live events, and the twists and turns that immerse and involve the players make each ARG a unique experience.

The early game is, for all intents and purposes, commanded by the rabbit hole. The entry point into the game is vital to give life to the ARG. A game needs players, and an ARG is no exception. As was explained before, there are a myriad of ways to get players into the game, ranging from letters and packages to Super Bowl ads and internet spam. The trick is not only to make it intriguing enough for people to follow it, but also to make it subtle enough for people to not immediately dismiss it as a hoax. Once the players have entered the game, the puppet masters must have a few things prepared.

The single most important part to an ARG is its story. Without a story, there is nothing for the players to do, see, or impact. At the same time, an ARG cannot have a one-track story. It has to be able and willing to change based on player interaction. It must be freeform enough to allow quite literally anything to happen, within the realm of logical action. If the storyline for an ARG is set and unchangeable, then the players are no longer players, and have become merely viewers, watching a movie in real space. The story isn't the only facet that suffers in this instance. The players as well will feel left out of the equation and likely will not continue to interact with the game, realizing their actions have no effect on the remainder of the game.

Another important aspect of ARGs that should be mentioned is puzzles. Without something to do or solve, while the story may be interactive, it isn't hands-on enough for players to feel like they are actually impacting the story. With items to solve and figure out, the players will actually need to use their heads and work as a team to advance the story. In addition, it provides the puppet masters the ability to see how players are solving puzzles, to put them into easier or harder situations, as they deem appropriate. Several different types of puzzles exist, ranging from ciphers to image decryptions to phone calls to radio shows to scavenger hunts. Nearly anything imaginable can be transformed into a puzzle.

For every obstacle players overcome there should be a response that benefits them in some way. Every puzzle needs its reward. If there is no reward for performing a difficult task, why should players continue to boggle their minds over problems? Rewards can be as simple as a piece of otherwise-unknown information, as important as the true identity of a masked character, or as physical and valuable as a cash prize at the end of the game. The reward should match the puzzle. If the puzzle is easy, the reward should be simple. If the puzzle is difficult, the reward should be huge.

A vast majority of the aforementioned parts to an ARG take place online. Most of the puzzles and obstacles a player will encounter will occur on the internet. However, if the entire game happens online, the players may feel too detached from the story. At this point we see the most immersive piece of an ARG. Live events such as a phone call or a physical meeting can make a player truly feel like a part of the story. With the addition of a live event, players become one with the plot, no longer separated by a computer screen.

2.4   Examples of ARGs

While not the first, nor the most impressive, one alternate reality game opened the eyes of many to just what an ARG could do and be. *I Love Bees* was an ARG run by 42 Entertainment in 2004 in order to advertise Bungie Studios' *Halo 2*. The game was considered a massive success and is credited as one of the ARGs that gave the genre the image it holds today.

There were two primary rabbit holes to *I Love Bees*. The first came in the form of a bear. Several people who had played in previous ARGs received by mail plastic honey bears containing honey and small vinyl letters. When unscrambled, the letters read "I LOVE BEES". Players were then able to go to http://ilovebees.com.

The second entry point was much simpler. In the previews before the movie *I, Robot* was an advertisement for *Halo 2*. At the end of the ad, "ilovebees.com" was quickly flashed on the screen. Intrigued movie-goers then went to the website at about the same time as the past ARG players who received the honey bears.

Once players got to I Love Bees, they found it belonged to a sweet old lady selling honey out of her backyard. Unfortunately, by the time the players arrived, it had been hacked by a mysterious force. Eventually it was discovered that the culprit was a corrupt A.I. named "Melissa" who, along with several other A.I.s, crash landed on Earth. When the A.I. "Spider" was supposed to repair Melissa, she didn't take kindly to the attempt and escaped to hide in the San Francisco server that happened to contain I Love Bees.

Dana Awbrey, the website's maintainer, attempted to reclaim the website and server by deleting some of the infected data. As it turned out, this action did not remove Melissa, but instead caused her memory to become further corrupted. Melissa retaliated by taking pictures of her using her own webcam and threatening revenge. Dana decided that was enough and left for China.

Melissa is slowly becoming more and more infected with what turned out to be a Trojan-horse virus known as the "Pious Flea". Spider attempted to delete this from Melissa's code, but made a mistake. Melissa responded by deleting Spider instead of the Flea. In a surprising turn of events that result in real-life players destroying a sequence that would otherwise wipe out all life in the galaxy, it is revealed that though the players have saved

the lives of billions, the Covenant – antagonists of the Halo series – has thus been alerted to the location of Earth.

Melissa was soon led by the players to seal away the "Sleeping Princess", another AI, which was later released by the Flea only to ultimately be merged with Melissa. After this, Melissa was able to repair her corrupt parts and realize she was a tool of the Flea, then merging with yet another AI, "Durga", and returned to her own time. Spider stayed behind, in control of I Love Bees, and was able to destroy the Flea for good. A countdown was left behind, counting the days (over 500 years) until the Covenant lands on Earth.

I Love Bees was an immensely popular ARG, complete with different styles of involving players, in ways that hadn't been attempted in any major fashion before. *Halo 2*, already an anxiously awaited game, received even more attention as a result of *I Love Bees*. It opened the eyes of the public to just how powerful an ARG can be.

Worcester Polytechnic Institute has itself run alternate reality games in the past. Before *Crossbones*, two ARGs were created in the IMGD course "Storytelling in Interactive Media". One such ARG was *MQ2: Cor Tech Biomedical*, run in March 2006. In MQ2, a weapons manufacturer called Bayes & Ellis Industries was pushing the recently acquired Cor Tech Biomedical into manufacturing a drug to synthesize mass mind control over small populations.

The drug was introduced in two parts. The first, Deino, was a drug that must be ingested. Once it is in the human system, it lies dormant, slowly weakening the immune system related to the ability to control one's actions. This drug was dispersed in the February 2005 via a dining hall platter of Mediterranean chicken, resulting in the sickness of several students, but not nearly all of those who had ingested Deino. The second drug, Enyo, must be delivered by injection directly into a major artery. Enyo would start up where Deino left off, taking the newly-paved neural passageways and weakened immune system and "reprogrammed" them to accept any commands from a specific person after a code phrase was stated.

In March 2006, Cor Tech sponsored a blood drive on WPI campus. What the students did not realize was that before any blood was drawn, a small dose of Enyo was injected, claimed to be a numbing agent. Now that the two halves of the drug were put together, Bayes & Ellis would be able to control the youths on campus, as a test before an attempt to use this technology on entire countries. All that was required was a file transfer. Jacob Chu, president of Cor Tech Biomedical, set up a meeting with the president of Bayes & Ellis. Unfortunately for them, there was a snag.

At the end of 2005, a student named Simon Carver had found out about the plans when he was planning on working an internship at Cor Tech, just after the company was bought out. He took very descriptive, but very encrypted, notes on what he saw and heard with the help of someone who would only be identified as "Porphredo". Carver finally had all the information he needed to break the case wide open and told his friend, Boston

College biochemistry student Kent Archer, that he was about to do something huge. The next day, Carver disappeared, and was never heard from again. In April of the following year, Kent followed what appeared to be a spam e-mail, along with several WPI students, to a forum led by the same mysterious Porphredo that had helped Simon months before. The people who were gathered eventually discovered the sinister plot, and even found out how to destroy the digital copy of the file being transferred.

This information, however, came at a price, as Porphredo was discovered to be Kelly Samson, Public Relations for Cor Tech. Some of the group shied away from accepting any advice she gave from that point on, most of them continued to assist her in taking down Chu. In the end, Archer was able to infiltrate Bayes & Ellis and steal the file as it was being handed over. A drug called "Porphredo" was given to all students, free of charge, the following morning. When those who helped watched the security tape showing Archer's actions, only one of the executives remained in the room, and looked up at the security camera. Who could it have been?

MQ2 and the other ARG run in March 2006, *Save the Future*, were Worcester Polytechnic Institute's first attempts to run an ARG. They were successful enough to warrant another pair of alternate reality games, *Eiden 101* and *OGMA Bio-Tech*, as well as the subject of this IQP, *Crossbones*, the first ARG run with the purpose of advertising for academics.

3 Project Design

3.1   Scope

This project spanned B, C, and D terms of the 2006-2007 academic year. Planning and design of the project took place primarily in B and C term. The Alternate Reality Game ran during the month of April, in D-term.

The project's target audience was all the students admitted to WPI for the class of 2011.

The project included the creation of the Xbones.org web site and accompanying online discussion forum and wiki as well as blogs, online journals, email accounts, and personal web pages for several characters in the game. Tokyo the Game, a Java applet-based arcade-style game was created entirely for this project. We also made use of other existing web resources such as the WPI Admissions web site. The team also created extensive art assets for this ARG including writing, recording, and editing an original radio play, and producing graphics for Tokyo the Game, and logos, flyers, and posters for the Cross Bones society. The project incorporated the use of many communication mediums including email, message boards, online chat, and telephone calls. There will also be one or more live events on campus during which the project team will interact with the players.

3.2   Game Design

3.2.1 Story

The story we created for the Admissions ARG involves a fictional secret society on the WPI campus called the Crossbones. For the first time in their history, the Crossbones want to dramatically increase their membership. To that end, the society is recruiting new members from the incoming freshman class. One member of the Crossbones, known to recruits by her online handle, Mantissa, is supervising the recruitment and initiation process. She is responsible for teaching the new recruits about the principles the Crossbones and determining whether the recruits have the loyalty and cunning to advance within the society.

As the players become more involved in the Crossbones, they also meet Lucius and Fergie Morgenstern, the twin leaders of the society. The leaders hold themselves above the general membership and usually interact with the new recruits only to give them an order on the Crossbones online forum.

Also on the forum, the players run into Julian Chris Aldridge, more commonly known by one of his online handles: HornsOfPan or SilentProvocateur. Aldridge is disillusioned

with the Crossbones and attempts to draw the recruits away by posting inflammatory messages and cryptic hints that lead to the uncovering of recordings narrated by a person named TJ.

By listening to all the recordings, the players discover that TJ is actually a clone. He was developed in a secret research facility some years ago by Dr. Nicole Fritz. Dr. Fritz's lab was destroyed, but TJ and some of the equipment needed to create clones survived. Dr. Fritz and Sam - the person TJ was cloned were the original founders of the Crossbones society. Though Dr. Fritz, Sam, and TJ have all long since left WPI and the Crossbones, the society still exists and continues to experiment with cloning.

The story of the Crossbones supports the goals of our project in several ways. First, the fact that the Crossbones is a secret society gave us a reason to present our players with a series of tests and puzzles - ostensibly to determine their worthiness to join the society. Second, because the Crossbones is at WPI, we could incorporate facts about WPI into our story and puzzles, thereby helping to educate our audience (incoming freshmen) about the university.

3.2.2 Web Sites

Though our project used many different types of media, the primary content for the ARG was a series of web sites we developed. The largest and most important of these sites was http://xbones.org, the online home of the Crossbones. We set up both a discussion forum and wiki for Crossbones recruits (the players) and members (our team). This site was the heart of our ARG. Once the players found the site (through one of our rabbit holes), they registered on the forum where they could read messages from our team and the other players. We, primarily through Mantissa and Aldridge's characters, dropped hints on the forums that lead the players to discover the tests and puzzles. The players in turn posted the information they discovered and advanced the story.

We also used the cooperative writing nature of the wiki to our advantage, hiding clues in the revision history of certain pages. Once again, when players discovered the clues, they followed them, solved the puzzles, and posted what they discovered on the forums.

To develop Xbones.org, we used PHPBB software for the forum and MediaWiki for the wiki. We customized both applications extensively to add features we needed for our ARG, such as the ability to restrict access to certain pages on the Wiki. We also created custom skins for both applications to give them a unique and consistent look-and-feel. This included creating custom graphics and style sheets.

Figure 1 - Main Page of Xbones.org Wiki

Part of creating a believable alternate reality includes creating plausible lives and histories for the characters in our story. To give our characters more solidity, we created a number of online accounts for each of them, including email, Facebook accounts, and blogs. It is possible the players never saw many of these accounts, but if the did look, all of our characters had electronic histories going back months before the start of the ARG.

Several of the players did find Mantissa's blog, which establishes her as a WPI student , originally from Winters, CA who likes the Firefly TV show and Tori Amos. Her blog also ties into the larger story of the Crossbones and hints at the development of Tokyo the Game (one of our rabbit holes).

Figure 2 - Myra Selby (aka Mantissa)'s blog

3.2.3 **Rabbit Holes**

All games need some form of advertising to attract players. Advertising Alternate Reality Games poses a particular challenge because if it is directly promoted for what it is, the wonderful sense that "this is not a game" that ARGs try so hard to create is lost from the very beginning. So, for our ARG we did not send out an ad to our target audience announcing "here is our alternate reality game, come play it". Instead we developed a series of "rabbit holes" – indirect advertisements designed to pique our audience's curiosity and lead them down a path to "discover" the Crossbones as if it were a real secret society.

Open House

The first of these rabbit holes took place at the January 15th Open House presentation for high school students interested in majoring in Interactive Media and Game Development

(IMGD) at WPI. We worked our advisor, Dean O'Donnell and Mark Claypool to have them mention http://storynouveau.com somewhere in their presentation. The StoryNouveau URL led to a web page that we created which purported to be a list of upcoming IMGD projects. This rabbit hole was intended to just hint that something more was coming. One of the projects listed was Tokyo the Game, which we planned to use as one of our main rabbit holes. The 8-bit-style skull and crossbones at the bottom of the page was also intended to hint at the Crossbones. Clicking on the skull and crossbones took the user to a Lights Out style Java applet.

Our original intention was that one of the first puzzles in the ARG would be to click the right combination of squares to match some pre-determined image. Once the user lit up the correct squares, the applet would take you to the Crossbones site. However, we had problems implementing the puzzle and decided not to use it.

Upcoming Interactive Media and Game Projects

The Parlor

Students from WPI's Interactive Media and Game Development (IMGD) program are working with Venture Vista, a corporate sponsor to develop an innovative new digital art project called The Parlor. Early reviews hail The Parlor's revolutionary graphics and smooth, immersive interaction. The Parlor will be unveiled sometime in late April.

Warmth

A short hypertext narrative written by an affiliate of the IMGD program, *Warmth* highlights some non-game applications of the program.

Tokyo the Game

Developed by a WPI IMGD student, Tokyo the Game (TtG) is a web-based, arcade-style game. In TtG, the player controls a canon that fires a stream of acrobatic ninjas at Tokyo skyscrapers. As the ninjas try to break down the skyscrapers to free the kidnapped Grand Master ninja, the player must also evade Godzilla who is rampaging through Tokyo, breathing fire and causing havoc. Check back here for the beta release around March 2007.
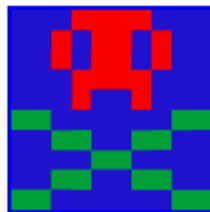
Figure 3 - Rabbit Hole on Storynouveau.com

Tokyo the Game

We developed Tokyo the Game (see Appendix A) as the primary rabbit hole into our ARG. We designed Tokyo the Game (TtG) to be a fun, arcade-style game that we could promote as an example of the work produced by WPI IMGD students. TtG gave us a way to tell our target audience "Come play our game" without altering the sense that the Crossbones secret society and the rest of our ARG was *not* a game. Tokyo the Game was hosted on the WPI Admissions website and promoted on the Accepted Students page (see Figure 4 - Tokyo the Game rabbit hole on WPI Accepted Students page). Tokyo the Game was also advertised in an email that was sent directly to all admitted students.

We had originally hoped to also mail a paper ad for Tokyo to each of the admitted students, but due to time constraints, we were not able to.

The route into our ARG from Tokyo the Game was simple, direct, and obvious. At the end of each level of the TtG, the player sees a message telling them to go to http://xbones.org. Furthermore, the passwords the player gets for completing each level spell out a phrase which also leads them to the Crossbones website.

Figure 4 - Tokyo the Game rabbit hole on WPI Accepted Students page

A Closer Look

On April 18th, WPI Admissions sponsors a large, day-long event on campus for admitted students called "A Closer Look". Originally, we intended to use the day as an opportunity to advance the plot of our ARG through some live, improvised character interactions or to get the players involved in a real-world puzzle such as a scavenger hunt. However, because the Tokyo the Game rabbit hole did not go out as early as we had planned, we decided to use "A Closer Look" as another rabbit hole to bring more players into the game. The entire team put up posters (see Figure 5 - Crossbones Poster) all around campus, handed out flyers to prospective students and their parents, and manned a table in the Campus Center where we passed out even more flyers.

Also on April 18th, during presentation for prospective students interested in majoring in IMGD, our advisor, Dean O'Donnell walked the entire audience through a rabbit hole puzzle that we had prepared in advance.

Other Rabbit Holes

In addition to the main rabbit holes listed above, we also left hints and links leading to the Crossbones website on several large community sites popular with high school and college students such as Facebook, LiveJournal and MySpace.

Figure 5 - Crossbones Poster for A Closer Look

3.2.4 **Puzzles**

As stated in the Background, puzzles are one of the key components of an ARG. By solving puzzles the players cause events in the story to unfold, giving the players a real sense of meaningful interaction with the game. As game designers, one of the most important factors in creating successful puzzles for an ARG or any game is giving the players sufficient motivation to attempt the puzzles and a meaningful reward for solving them. The other factor we had to consider was our own rationale for including the puzzle in the ARG.

The following is a list of the main puzzles in our ARG, roughly in order, with our rationale for giving the players the puzzle, and the players' motivation and reward for doing the puzzle, along with a brief description of how each puzzle was implemented. For more detailed information on the puzzles, including the solutions, see Appendix F.

Tokyo the Game Level Passwords

Rationale: Tokyo was created as an eye-catching and self-contained entry point for the ARG. Hosting it on the official WPI Admissions website lends the project an initial air of credibility, and also subtly implies the power that the Crossbones have - they can get themselves promoted by the school itself.

Motivation: Tokyo is a fun game. Prospective students were also offered $300 in prizes for beating the game.

Reward: Find Xbones.org, find out a little about the Crossbones society, and meet other players on the forums.

Implementation: Tokyo the Game was written in Java and presented as a Java applet (so players would not have to download any software) on the Admissions website. See Appendix A for more details.

Mantissa's Three-fold Path

Rationale: The three puzzles follow a distinct theme – that of the matching three core principles espoused in the Crossbones Wiki. This also serves as the first proper challenge for the players; after all, nobody would expect it to be easy to gain entrance to a secret society.

Motivation: Show you're worthy to join the Crossbones

Reward: Live interaction with Mantissa through chat.

Implementation: The Three-fold Path puzzle was presented as a series of web pages on Mantissa's site (http://mantissa.path.googlepages.com). Mantissa gave players the initial link to the puzzle in a post on the Crossbones forum. See F.1 for more details.

Aldridge's Three-fold Appeal (during Closer Look)

Rationale: This series of puzzles was intended as another rabbit hole, to capture the attention of many prospective students who might not have played Tokyo the Game. These puzzles are something of a dark parody of the Three-fold Path (which any player of the broader ARG would recognize), and they contain a plea for help that's hard to ignore.

Motivation: The audience didn't need much motivation to solve these puzzles because the presenter lead them through it step by step, as a group.

Reward: Feeling good about solving the puzzle and more to investigate at Xbones.org.

Implementation: These puzzles were developed as web pages with a very similar look-and-feel to Mantissa's Three-fold Path.

Aldridge's Radio Play

Motivation: Understanding Aldridge's cryptic posts, following LehrUndKunst's orders to find out more

Reward: hearing the radio play and finding out about TJ and cloning

Rationale: Having the plays diversifies the ARG, providing some content for the lurkers who are more interested in following a story than solving elaborate puzzles.

Implementation: We originally intended to be broadcast on WPI's internet radio station WWPI, but due to technical difficulties, we were unable to do so. Instead, Aldridge posted cryptic messages on the Crossbones forums with encoded links, which led to several MP3 files, each containing one act of the play.

WatchTower

Rationale: These puzzles provide a way to disseminate information on the Crossbones' secrets to the most dedicated players, potentially leading to a conflict between them and "loyalist" players who have not yet found the information.

Motivation: Primarily curiosity (and goading from JCuervo)

Reward: Major plot details that corroborate with Aldridge's radio plays.

Implementation: "Watchtower", a Crossbones Wiki user left clues leading into this puzzle chain in the history of some of the pages on the wiki. See F.2 for more details.

The End Is Near

Motivation: The players are prompted to solve the puzzle by a desperate (but somewhat suspicious-sounding) message from someone using Mantissa's name. Since Mantissa has been their mentor thus far, the players are motivated to solve the puzzle to help Mantissa out and discover what is going on.

Reward: TJ's phone number (sans area code) and information that further develops Mantissa's character.

Rationale: This puzzle only yielded a partial reward, because we wanted the fast-moving players who reached it first to share it with others unable to complete the puzzle – basically an attempt to level the playing field for the players.

Implementation: Myra Selby, as Requiem, posted an exposé on the Crossbones forums and stated that she had hidden further details of "the truth" on her website. Myra's link led to a visual puzzle made up of a grid with many white and black circles. Upon finding the hidden message in the picture, the players got to a web page that had the last seven digits of a phone number (without an area code).

Two and Two (TJ's Area Code)

Rationale: This final puzzle virtually forced the players to cooperate, largely because only one of them was able to listen to the final radio play that had hints about TJ's location (and that particular player hadn't found TJ's phone number). It also allowed the players a large degree of freedom and involvement in determining the resolution of the plot.

Motivation: Desire to contact TJ and see the conclusion of the story.

Reward: Dependant entirely on what is done with the number once it is finished; we were prepared to go with any number of different endings. Ultimately, they gave the number to Sam, triggering both the death of Aldridge and the dissolution of the Crossbones.

Implementation: The last installment of Aldridge's radio play ends with a monologue where TJ says he went off to live in Nevada. By combining that information with the solve from The End is Near, the players found the full phone number.

3.3   Gathering Data

To help us keep track of how far and fast our players were progressing and to gather statistical information about the number of people attracted to our game, we used Google Analytics. Google Analytics is a free web tracking tool that logs information about visits to your website and displays that information in various graphs and charts.

Player/character interactions on the forums and in IRC chat were another important way we gathered information about the players, especially about their qualitative perceptions of the game.

The information we gathered is discussed further in the Results section below.

3. Results and Conclusions

3.4 Tokyo: the Game Statistics
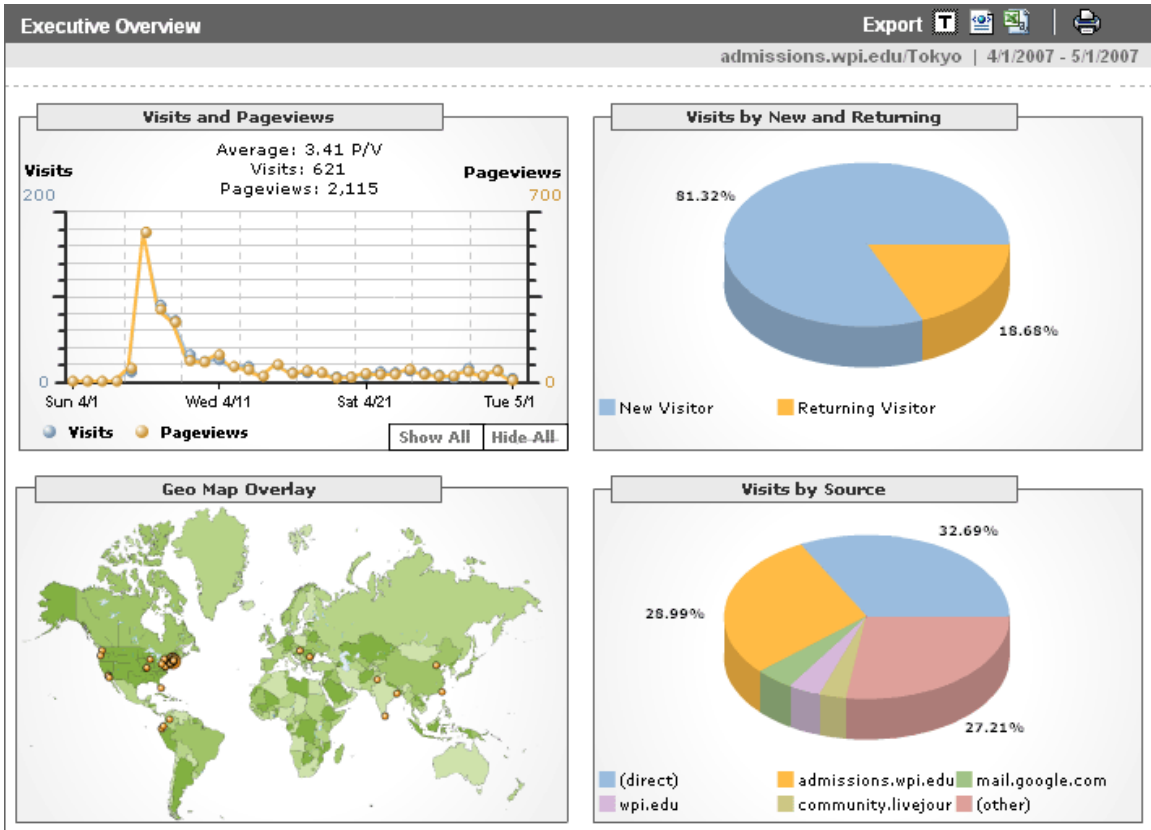
Figure 6 - Traffic to Tokyo the Game on WPI Admissions site from 4/1-5/1

Tokyo: The Game was our first rabbit hole, and was pushed mainly at the start of the game, due to its overall disconnect with the rest of the ARG. We originally planned to highlight it directly WPI's admitted students page starting around the last week of March, as well as advertised directly to the students through both email and paper mail flyers. Unfortunately, the release was delayed due to some issues with the content of the game, including concerns over borderline-copyright-infringing references to pop-culture icons Godzilla and Mario, and some confusion about our failsafe liability page. We were only able to make the Tokyo the Game available after the scheduled launch of the main ARG on April 1st.

As a result of the delays, we were unsure about sending out paper mail, since we couldn't pinpoint the day the game would actually go live, and if the advertisement were to be

received before the game was uploaded, we might lose people who would associate our other attempts to draw them in with the disappointment of looking for a game that wasn't there. Once our scheduled game time had already begun, we decided that paper mail would arrive too late for players to join the game.

Although paper mail was out of the question, we still had our other entry points. There was a link to the game posted on the main admitted students page, which caught several visitors both across the country and internationally, starting Thursday, April 5th. Over the course of the month of April, we had approximately 500 unique visitors to the Tokyo: the Game, of whom around 36% arrived there from the admitted students' page. The frequency of these referrals was fairly regular throughout the course of the month, averaging around seven visitors a day, with more visitors on weekends and less on weekdays.

There was also an email sent out to all admitted students on Friday, April 6th. At least 141 visits were referred from mail servers, approximately 23% of the total. The majority of these visits were concentrated during the first week of the game, in the days immediately following the email

After the spike from the emails began to fall, we realized that we needed to continue to support our entry point through other media, so on Sunday, April 8th, we made a post advertising the game on the WPI LiveJournal community ostensibly by Ben Jecker one of our characters. LiveJournal referred at least 53 visits to Tokyo: the Game, approximately 9% of the total. These visits were concentrated during the second week of the game, in the days following the LiveJournal post. By the time these referrals had slowed down, the game had already begun, and it was necessary to shift focus to our primary website, the Crossbones forums.
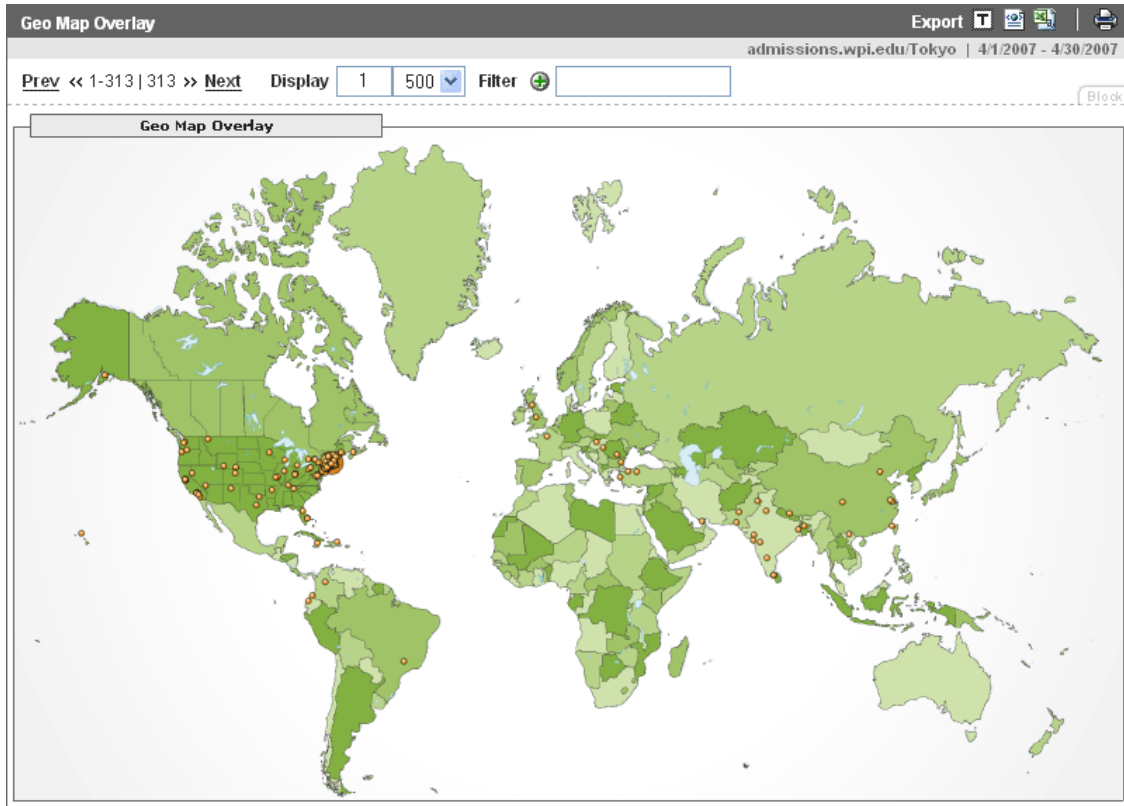
Figure 7 – Geographic overlay of visits to Tokyo: the Game from 4/1-4/30

While most of the visits to Tokyo: the Game came from the New England area, there were visits from more than 30 states and 23 countries.

3.5   Crossbones Website Statistics

After the first week, players began to meet with characters in the game, and the central forums became active. In order to draw in more people without delaying them with the obstacle of the game, we decided to advertise the secret society directly. Furthermore, we were recognized that we had far fewer players than we were expecting and planning for, so in order to get more players, we decided to broaden our target audience from just accepted students to any high school students.

On Tuesday, April 10th, accounts were set up on Facebook and MySpace to promote the Crossbones. Immediately referrals began to show, but certain trends appeared to separate the two social networks. People only seemed to come to xbones.org from MySpace when they were directly friended by the Crossbones account, and as far as we understand, nobody actually joined the game from MySpace. However, Facebook provided a fairly steady stream of visitors over the course of the month, about one or two referrals per day, which suggests that either people were actively discovering the Crossbones' presence on

Facebook, or that people who found the Facebook rabbit hole continued to use it as their entry point even after they had discovered the website.
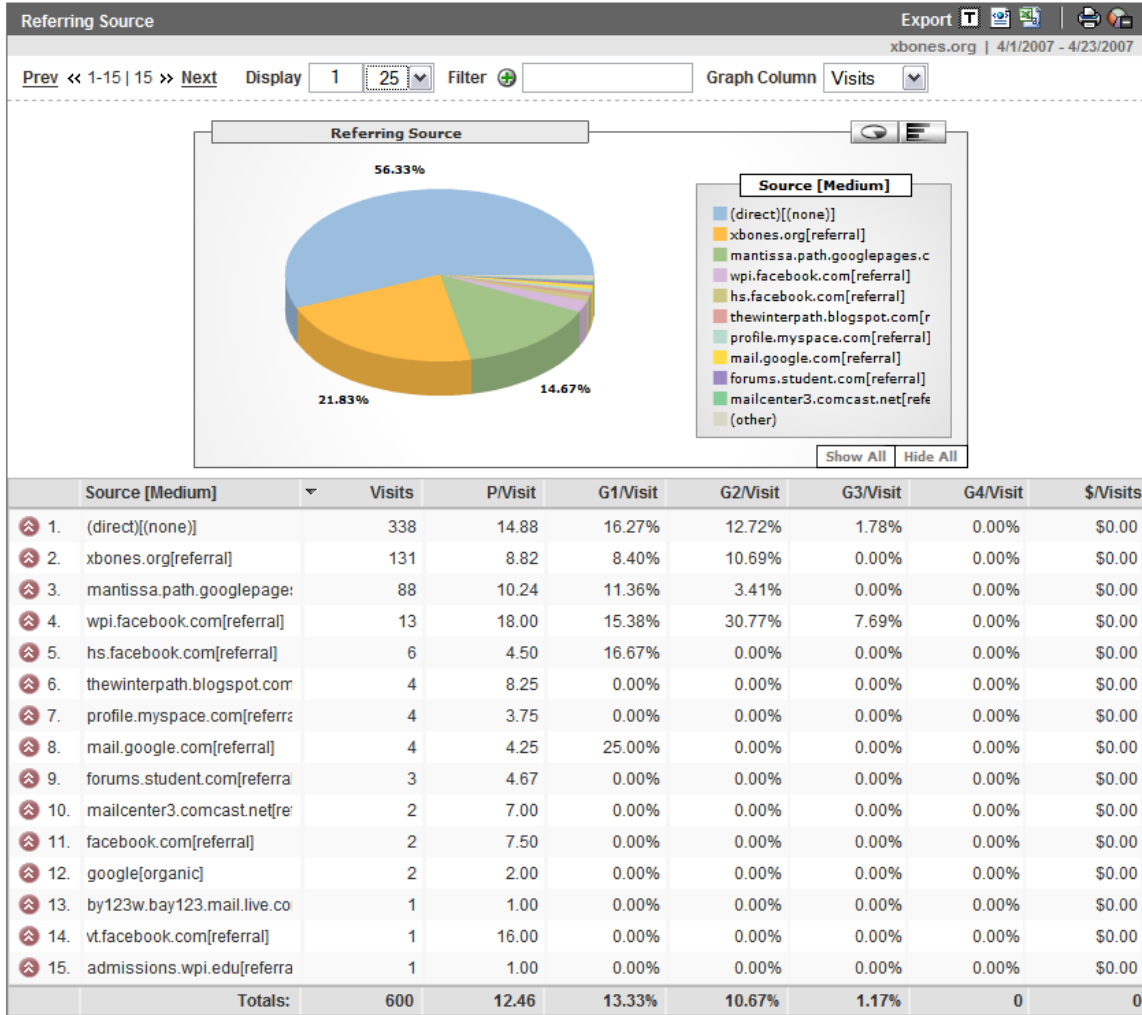
Figure 8 - Crossbones Visitors by Referring Source

In the initial project plan the climax of the game's story was scheduled to take place in a live event during the admitted students' Closer Look open house, on Wednesday, April 18th. However, due to the combination of the late start and the small number of active players, we decided to turn the event into a final entry point for the game. Flyers for the "secret" society were posted all around campus and mini-flyers were handed out to prospective students by the project members. On the day of the open house, there were 50 direct visits to the Crossbones website, more than double the previous high set on the day the emails went out. The next day, there were 59 direct visits to the site. Overall, direct visits made up just over half of the total visits to the website.
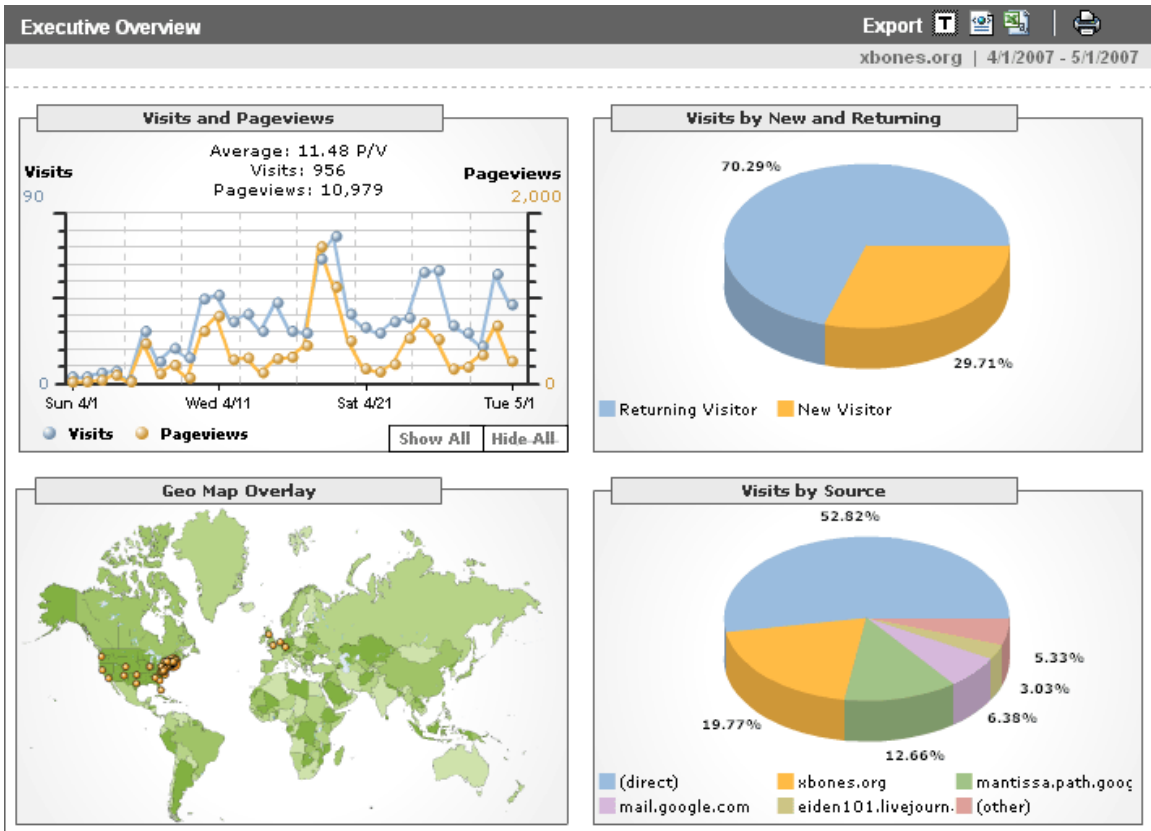
Figure 9 - Traffic to Xbones.org from 4/1-5/1 showing spike after Closer Look

Geographically, visits to the Crossbones website were similarly centralized in New England, as were the visits to Tokyo: the Game. There was still a spread across the country and into Europe, but most visitors from outside of New England were one-time visitors.
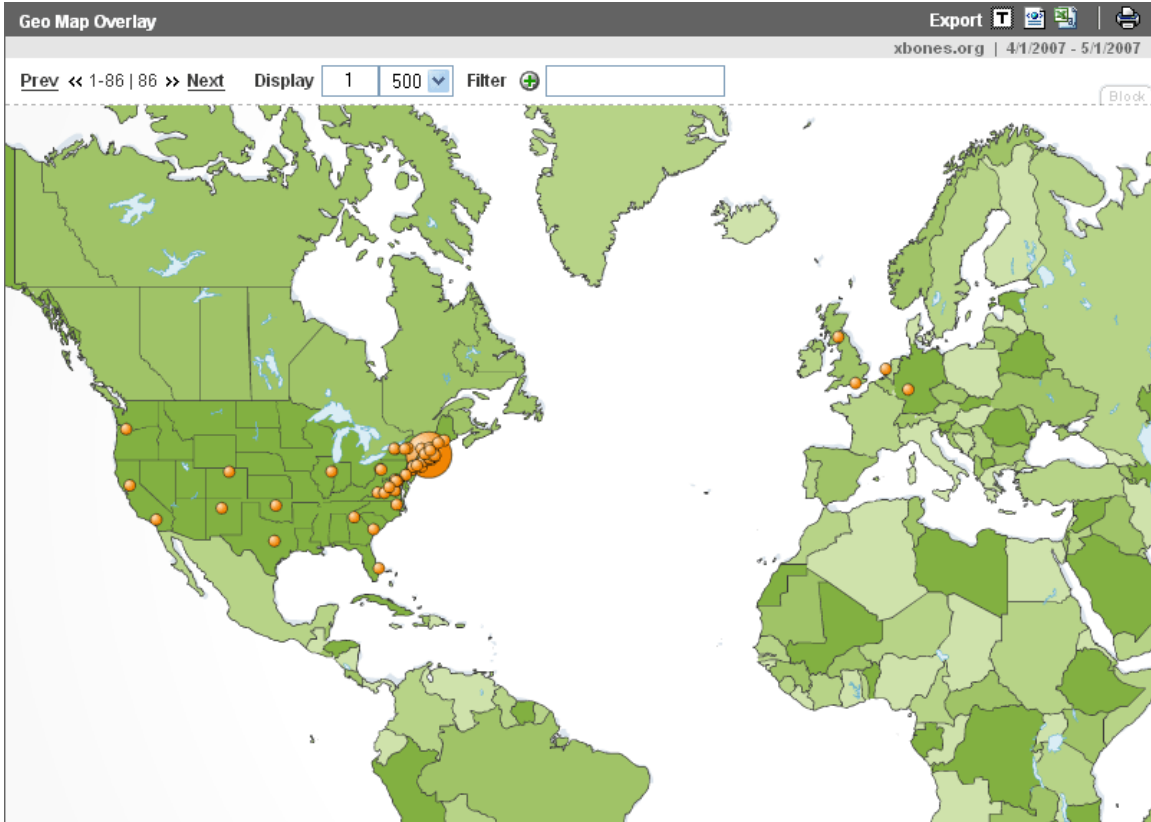
Figure 10 – Geographic overlay of visits to xBones.org 4/1 – 5/1

3.6 Active Players

The active player base of the game consisted of around seven players. Of those, at least five were current WPI students, either admittedly or having a WPI email account. One other player was a friend of one of the developers, and the identity of the seventh is a mystery.

3.7   Conclusions

Though running the ARG presented several difficult challenges, Crossbones was successful as a game. As a marketing tool on the other hand, its success was rather limited. However, there are several changes we can suggest for future projects of this sort to make them more successful as marketing tools, and easier to develop as games. The primary changes we suggest are a longer run time for the game, a wider target audience, and a closer partnership with WPI Admissions and Marketing departments.

First, a longer running time would allow more time for players to join the game, also allowing more development time for dynamic adjustments in advertising strategy if necessary. Our previous experience with running an ARG at WPI gave us a false impression of the difficulty in creating an effective rabbit hole. For *MQ2: Cor Tech Biomedical*, which four of our developers also helped run, and for the other ARG run as part of IMGD 1002, getting a response to rabbit holes was easy – students in the class were required to play for their grades and encouraged to win for prizes. While those incentives were good for getting players, they are also detrimental to the fundamental principle of ARGs, that "this is not a game". While we did have prizes available, such things are easily ignored by people who do not already have an imperative to compete.

Another way of adjusting the project would be to broaden the target audience. By making the game available to more players, there would be more chance of getting a large community. The primary problem faced with this project was that we had planned to allow the players to contribute a large portion of the actual story through their own creativity in responding to our prompts. Several of the planned puzzles and activities were dependent on there being a large number of participants, but sadly these had to be cut when only one player had actually showed up for them until the end of the game. We tried to broaden our target audience when we reached out through Facebook and MySpace for high school students, but we were unprepared to take full advantage of those media. Had we been preparing all along to advertise on a larger scale, we would likely have been much more successful.

Finally, closer contact with the WPI Admissions and Marketing department would likely prevent many of the issues we faced this year getting off the ground. Furthermore, closer collaboration with the Marketing department would have allowed us to make our content integrated more seamlessly with the WPI site. Some prospective players merely sneered and backed away when they saw how poorly the page designed for *Tokyo: the Game* integrated with the WPI website. Though we had good communication with the Director of Admissions, it would have been helpful to have direct contact with the webmasters rather than going through several layers of middlemen. Direct contact with the webmasters would have helped to speed up the communication loop which is important given the dynamic nature of an ARG, especially one on such a short timetable. If an ARG of this sort is repeated in the future and it intends to make use of the WPI website in anyway, we recommend that the project team make sure to establish a free dialogue with the webmasters.

Appendix A   Tokyo the Game

Tokyo the Game will be the "Hook" mini-game that will draw players into the Admissions Alternate Reality Game

A.1 Game Components:

The Ninja Cannon – The Ninja Cannon can roll slowly in either direction, and when it is not obstructed by overhanging buildings, it can fire ninjas in an arcing trajectory towards targets of the player's choice. The Cannon is susceptible to being crushed by Kojira's feet or destroyed by enemy Blood Ninjas, and it cannot back up past the "Great Wall of Tokyo" on the far left of every map. The Ninja Cannon starts with an ammo supply of three ninjas; once fired, the ninjas will regenerate at a rate of one every half-second.

Ninjas – Ninjas behave autonomously once fired from the ninja cannon; their behavior stems from a combination of the velocity they are fired at and the things that they hit or land on. High horizontal velocity will cause the ninjas to make a horizontal slice attack on whatever they land on; lower total velocity allows the ninjas to latch on and make a more prolonged attack that can carve off chunks of whatever they land on. Finally, landing a ninja perfectly on top of something yields a vertical slice attack. Ninjas will die if they encounter flames, or if they run into enemy Blood Ninjas (though they will also defeat the enemy ninja in the process).

Buildings – Buildings generally serve as obstacles; they can be destroyed by prolonged ninja attack. A horizontal slice attack on a building will destroy one story of the building (causing everything above to drop down one level); a successful latch-on attack will cause part of the building to slough off. Some building blocks cannot be destroyed at all, and many of them appear to defy the laws of physics and gravity.

Target Building – One building on the map is the building that contains the kidnapped Grand Master Ninja (GMN); this building will be highlighted. It must be completely razed to the ground to free the GMN, because, as we all know, ninjas don't use stairs.

Helicopters – Helicopters offer a way to modify the trajectory of ninja-flight. If a ninja hits a helicopter in mid-air, the ninja will use the helicopter to boost upwards for half a second – potentially avoiding obstacles like tall buildings or Godzilla.

Kojira – The archenemy of all ninjas, Kojira lumbers forwards until damaged badly enough by ninja attacks to beat a retreat; Kojira also periodically belches flames that light buildings on fire (ironically, shielding them from ninja attack) and burn ninjas out of the air. Players must strike a balance between damaging Kojira to keep it on the run and attacking the buildings to make forward progress through the levels.

A.2 Scoring:

Scoring is determined at the end of each level.

Number of Ninjas – Players lose 60 points per ninja fired; senseless waste of ninja life is frowned upon.
Total Destruction – Players gain 80 points per building block destroyed.
Defeated Blood Ninjas – Players gain 60 points for each Blood Ninja defeated, negating the ninja-firing penalty for defensive shots.

A.3 Screenshots:
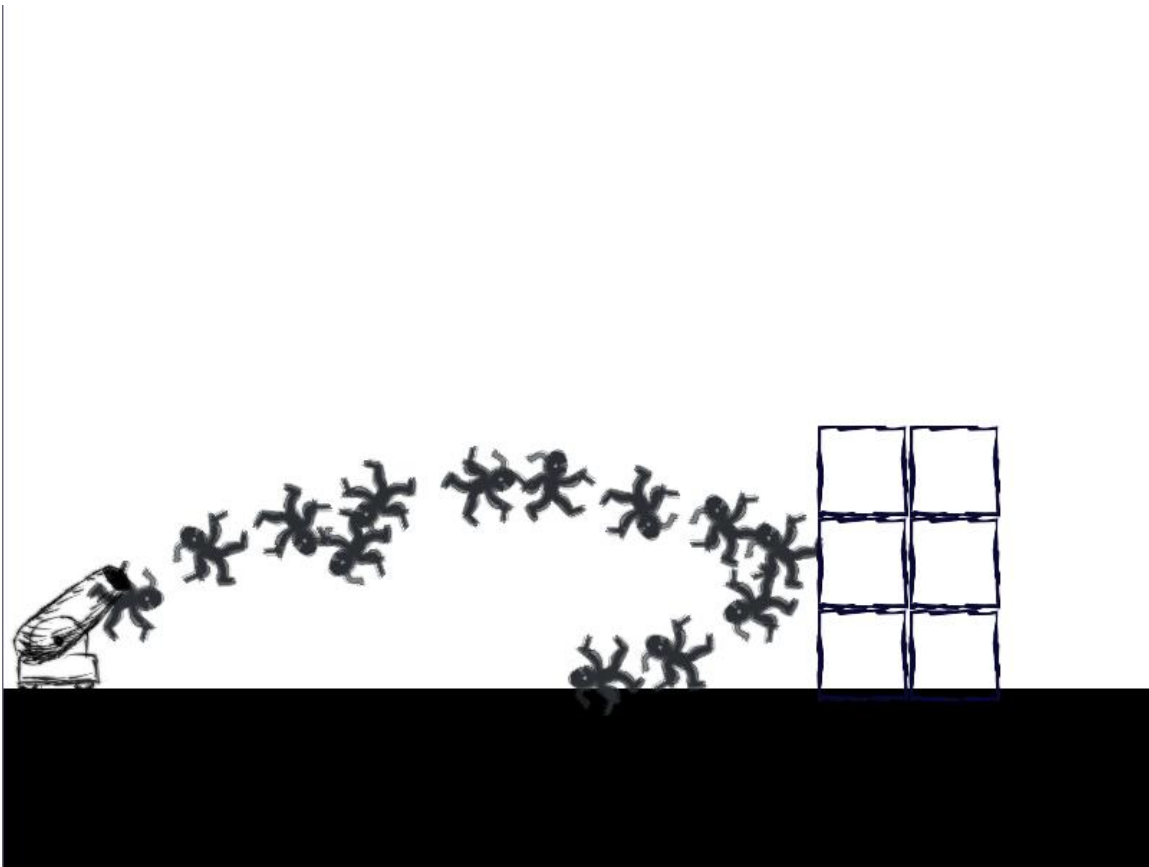
Figure 11 - Early proto-type of ninja canon firing

Figure 12 - Late game level
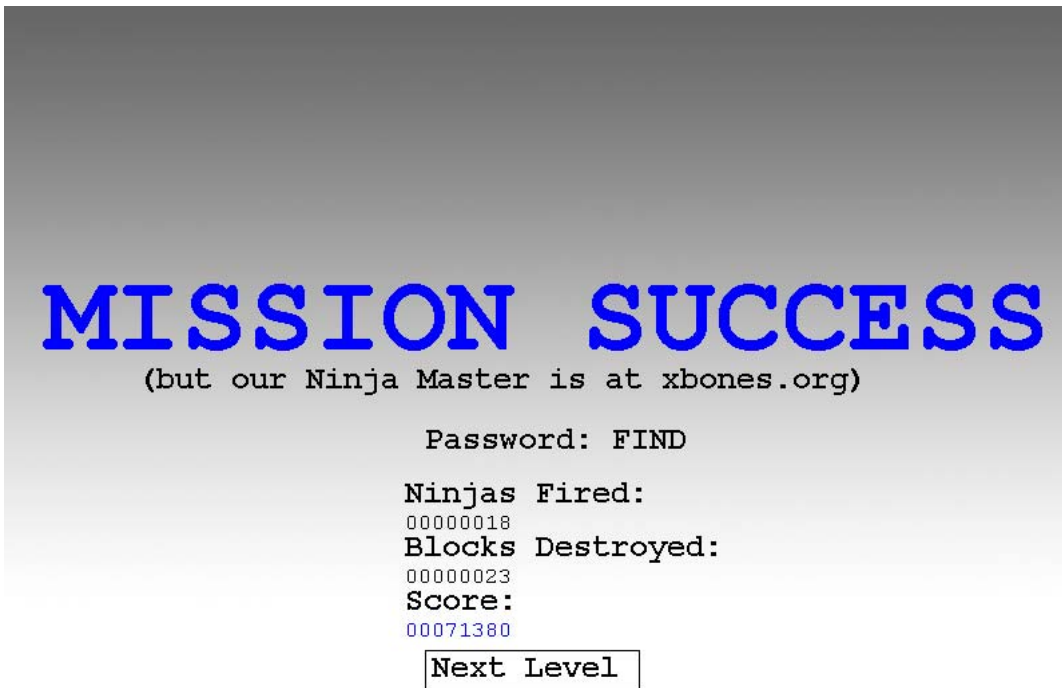
Figure 13 - Screen pointing to xbones.org

Appendix B   Crossbones Back Story

1975   Cloning experiment takes place in Switzerland. Declared inhumane, the records of the experiment were destroyed.

1977   Dr. Nichole Fritz revives the project underground in the United States, as Nu Rho Laboratories.

1984   First successful clone from NRL projects, Kelly, is born.

1985   Kelly dies of heart complications.

1986   Dr. Fritz is forced to look for applicants who are apathetic and/or do not care about the idea of cloning, who would do it for little payment.

1986 Aug   Dr. Fritz approaches WPI as Denton Neural Association, a genetics research company, looking to get DNA samples of various sorts (blood, tissue, sex cell samples) for research of the college student peer group.

1989   First healthy successful clone, TJ, is born.

1991   D.N.A. offers internships, observing candidates and choosing one person to see the actual operation.

1992   Sam Williams, WPI senior, is chosen and is allowed to see. He is asked for "marketing suggestions". He requests to see TJ, now physically 13 years old.

1993 Mar   Sam suggests that students should be allowed to keep their clones, but Nu Rho suggests keeping it as secret as possible.

1993 May   "Cross Bone" born, accepting 12 initial members.

1997   Students start getting greedy, and begin slowly removing NRL from the equation after stealing much of the machinery for themselves.

1999   Dr. Nichole Fritz dies, nearly unnoticed. NRL, due to lack of funding, slowly dissolves.

2003   The Twins join Cross Bone and suggest heavily to have a dichotomy, for "cooper-tition"s sake.

2005   Crossbones are born, with the Twins at the helm.

Appendix C   Crossbones ARG Plot

StoryDoc v1.0

After testing the incoming students on their abilities to solve a simple puzzle, the Twins welcome them into the training ground of the secret society, the Crossbones. The training grounds are simply a set of forums and a small wiki detailing the recent history of the society.

MANTISSA / MYOTIS

MOTIVE: Overthrowing (and killing) both of the Twins and taking control of the Crossbones.

Mantissa, looking to test their ability to pick up on cryptics, posts a strange message to the boards, seeing who responds and who doesn't. Those who do are invited to have a chat with her in an IRC channel. After testing their knowledge, she returns to the boards to find that the Rebel has been around. After leading her protegés to start solving the puzzle, she emails the Rebel, asking just who he is. After being shot down by Aldridge, Mantissa creates an alter-ego, Myotis, on the Admissions board, as well as listening in on the radio show the following night.

From there, she decides to shake things up, and emails Lucius with a message detailing the Rebel being a central figure in this plot. Lucius agrees and addresses the board, telling them to find their way into Aldridge's email. On top of that, Mantissa goes to the players telling them that the most loyal of members will prove they are such by marking themselves with the crossbones, and posting their proof. Those that do such before April 6 she claims will advance.

She continues to advance as Myotis in various media, and eventually puts herself in a position where she is actually an effective Rebel-side character. She determines that the best way to prove which CB members are up to snuff is to present them with the hardest challenges possible. At the same time, she decides it's time to see if the twins, the leaders of society, are up to snuff. From here, she sets out to prove their inadequacy as leaders.

CLONES?

JECKER

MOTIVE: Curiosity.

After being accepted to WPI, Jecker receives a packet in the mail detailing the IMGD major and a game called "Tokyo the Game". After losing at the first level (he admits he isn't that great at video games) he does not find the rabbit hole, but posts about it. He eventually finds the Admissions Board and posts on there, as a curious new student trying to figure out things about WPI. While there, on April 1, he notes the front page of the website. Meanwhile, he reads the post by Aldridge. After a bit of discussion on the topic, Jecker decides to listen to WWPI radio.

He makes a post about how cool it is in general, and listens on the date and time noted. He posts again the next day saying there was something weird about it. In fact, he recorded it, but did not upload it anywhere, as no one seemed interested in it. From here, Jecker begins to learn about a secret society called the "Crossbones".

As time goes on, Jecker continues to listen to the radio show and post about it on his LiveJournal and the Admissions Board. From here he learns about a man named "TJ". Jecker begins looking through a mysterious Wiki the Rebel leads him to. While he does not figure out all the pieces, he does point out one or two suspicious portions. He then is able to see the paperwork proving the Crossbones' connection to a company called the Denton Neural Association. At some point after this, Jecker (OR whichever players get this far) calls TJ.

Jecker is listening to the Radio Show when Aldridge is kidnapped, and makes (loud) mention of it on his LJ and the Admissions Board.

If the players do not find his LJ, Jecker continues as planned, but without recording the radio shows. He makes a larger presence on the Admissions Board.

If the players do find his LJ, Jacker attempts to organize the efforts to figure out just what is going on.

ALDRIDGE

MOTIVE: To take down the Crossbones

Julian Chris Aldridge aims for but a single goal: to destroy the Crossbones. He knows what they do, he knows what they've done. After a careful analysis of the ranking members of the society, Aldridge was able to watch as the advertisement occurred, and put together a counter consisting of advertising the radio show on the Admissions Boards and the Xbones Forums. After a handful of covert operations involving information handoffs via the Radio Show and numerous appearances inside and outside the Crossbones website, he receives an email from Mantissa, informing him that she intends too to take down Lucius and Ferguson. Aldridge, noticing that she mentioned only the Twins and not the Crossbones, accepted her help knowing she would not remain loyal. Finally, after two weeks solid, during the fourth Radio Show, Aldridge is kidnapped by

Ferguson. His fate, the fate of the Crossbones, and the fate of the game lie in the hands of the players at this point.

LUCIUS & FERGUSON

MOTIVE: Greed, power, ignorance.

Lucius and Fergie are at a bit of a crossroads. They were able to convince Cross Bone to split in two for the sake of a more competetive attitude, and then were successfully able to recombine them back into the Crossbones. However, there was a problem. The Twins are, in fact, twins. There is a rule when people utilize clones in the Crossbones. When you are to graduate, you do not. Your clone does, as he did all the work. While the Twins weren't ENTIRELY untrustworthy of each other, they did fear that the other brother would take opportunity of tradition and do him in, deeming his work less important.

Meanwhile, the crossbones were experiencing a dip in memberships. Cuererra approaches the Twins with this issue and suggests an advertisement of sorts to attract attention. The Twins, desperate for extra members, agree with the plan. The April Fool's Day page is put up, and the Twins are advised by both Cuererra and Mantissa to just sit back and watch. This, of course, makes them more paranoid, and over the course of three weeks they become more and more neurotic about the situation, as graduation nears.

When Aldridge shows up, unexpected to anyone, Lucius snaps. An email from Mantissa was more than enough to convince him to stand up against Aldridge and rally the members together to destroy him by whatever means necessary. He suggests email as a first step, as it is the simplest. Lucius then retreats into seclusion again. They sit quietly and watch for the next week and a half until they realize that the Crossbones are crumbling. Ferguson now steps up to the plate and concocts a (successful) plan to kidnap Aldridge during one of the radio shows. With Aldridge hostage, the only thing to worry about is the splintered rebel movement. However, things take yet another sudden turn for the worse when Sam Williams suddenly shows up. Furious at the public face the Crossbones have, Sam threatens the Twins. If they can't fix this, and if anyone finds out ANYTHING about the past of the Crossbones, he will personally make sure anyone who knows, past or present, are silenced.

TJ & SAM

MOTIVE: Saving clones from pointless life (TJ), saving his own ass, keeping CB secret (SAM)

TJ: TJ has been living in Colorado for the last five years. By now he is physically a 50-year old man, experiencing rapid growth due to the cloning process. From out of almost

nowhere he receives a phone call alerting him to movement by the Crossbones. Unsure of what to do about the situation (on top of the fact that rumors were started that the clones were killed upon exiting the school), TJ calls the only person he knows is on the outside of this situation, Sam Williams. After a brief talk, TJ catches the next flight into Worcester.

SAM: Samuel Williams. He is the founder of the Crossbones. A WPI alum, Sam tends to look back at the school once in a while to see how things are going. A particularly big fan of the April Fools Day pages, he visited the website the day of the "secret society prank". He kept an eagle's eye on things after seeing how poorly they were keeping their secret. About two weeks later, he gets an phone call from TJ, mentioning that the Crossbones appear to be "on the move" again, with a website and a wiki and everything. He didn't mention much, but it was enough to spark Sam's interest. He immediately books a flight into Worcester Int'l Airport for April 16. He joins the forums and begins loudly attacking the members and the Twins for their pitiful handling of recent public image. He warns them that if too much information leaks out, he will resort to violent measures to ensure the confidentiality of critical information (his own involvement in the founding).

If the Crossbones remain under wraps: Sam retreats quietly, reminding them to keep this secret society a secret.

If the Crossbones become public: Sam steals the history files and "disposes" of the Twins.

CUERERRA

MOTIVE: Prefers testing people's intelligence over loyalty or syntax.

Cuererra was a rather unbiased member of the Crossbones. He neither fully supported the Twins' actions, not did he entirely protest it. Instead, he kept to himself under the title of Webmaster, running the new websites put up by the Crossbones. One thing he values over all is the strength of human intellect. The ones with the brains should be running the operation. Thus, during this scholastic year he's been nudging the higher-ups into position such that when he graduates, someone he helped prepare can take his place. This person was Nate, although he was unaware of this.

In mid-March he approaches the Twins, and suggests that the current membership is a touch low. After noting that the internet is a powerful advertising tool, he convinces the Twins to let the Crossbones get involved in the April Fool's Day webpage. However, unbeknownst to the Twins, when Cuererra put up the April Fool's Day page, he "accidentally" left it in such a way that it led directly to the Crossbones website. The Twins saw it as more members, and Mantissa saw it as a bigger pain to deal with, far more members than expected. Cuererra, however, utilized this opportunity to see how everyone fared in a game of wits.

Putting together a series of mental challenges, Cuererra not only puts together a few puzzles for "security's sake" (so far as the Twins knew), but also drops his response time to hacking attempts and break-ins. Thus, when Aldridge comes in to spout out the Radio Show advertisement, it sits stagnant on the forums for a full day first.

One bonus of being an admin on a forum is a sense of omnipotence as every minute detail is brought to the Admin CP. As it turns out, after Aldridge came to the forums, Mantissa was spotted viewing the profile (which contained only but an email to sign up with). Suspicious of this move, Cuererra breaks into her email to see that she has been sending him messages. Instead of alerting the Twins to this blatant treachery, he decides to up the ante for her and start pressing the members to solve more difficult problems than before, rather than focus on the "unimportant details". Throughout all this, Cuererra begins to see the true faces of the people he called ally. There was just enough distrust that by the middle of the third week of April, he had all but given up trying to save the Crossbones. Because a digital copy of the history files is kept on the server, Cuererra sends a final message to both the Crossbones and to Aldridge's base of operations before disappearing into the background to see how it pans out.

The reward of the first step of the final Puzzle is a note from Cuererra that reads "When students graduate from this school, it is not the CLONES that are killed. They, in fact, far outlive their creators. If you wish to seal the fate of this club, no matter what speaks your heart, press on. I trust that you are far less blinded than we who created this foul "game"." This presents the players with a very real sense of danger, as the Twins are meant to believe at this point that clones have been created and are ready to be awakened.

If the players ignore the Rebel Track, Cuererra will push even harder with the puzzles and may even note that Mantissa isn't all she's cracked up to be.

If the players ignore the Crossbones Track, Cuererra will appear to defect, only to show that he is simply testing the intellectual power of those who consider him an enemy.

NATE

MOTIVE: Likes designing games, wants to get his name out there.

Once the game begins, Nate fills a similar role to Jecker, but on the reverse side. Instead of trying to figure out what is goign on and who the Crossbones are, Nate is trying to figure out just what it is Aldridge wants and how to heal the society's wounds.

Appendix D   Event Timeline

D.1 Original Timeline

This is the timeline as we originally planned it before the start of the ARG.

Date	Time	Event
APRIL 3		Mantissa's intro
		Aldridge's post
APRIL 4		Ben posts WWPI = cool
		Lucius entreats players
		Loyalty Test
APRIL 5		Radio show
		Second branch starts
APRIL 6		Puzzle test
		Rank 2 Forum
APRIL 7		Jecker's wiki boards
APRIL 8		Doctor's cache found
APRIL 9		Ben makes recording
		Radio show
APRIL 10		Clones
APRIL 11		Mass confusion
APRIL 13		TechNews deadline
		Radio show
		Rank 3 Forums
		Puzzle Test 2
APRIL 14		TJ found
APRIL 16		Founder (Sam) shows up
		Rank 4 Forum
		Aldridge kidnapped during radio show
APRIL 18		Admission's Open House/Closer Look
APRIL 19		Puzzle Master Climax
APRIL 21		End Game

D.2 Modified Timeline

This is our modified time-line after we found out that the email rabbit hole that we planned to send out the admitted students on Sunday, April 1st would not go out until Friday, April 6th.

Date	Time	Event
MARCH 31		Tokyo the Game is released for public consumption, with rabbit hole
APRIL 06		Mantissa posts to the Admissions Board with a cryptic rabbit hole
		Aldridge posts a message leading to WWPI
		Mantissa shows the Crossbones the Loyalty Test
APRIL 07		Jecker posts to LJ and the Admissions Board about how cool WWPI is
APRIL 08	09:00pm	Mantissa meets with the players on WPIIRC
APRIL 09	12:00am	Level 2 opens up
APRIL 09	08:47pm	Radio Show 1 (Crossbones + Nichi)
APRIL 10		The Rebel notes that the Wiki hides more information than it shows, leading to the Doctor's cache
APRIL 12		Nathan gives the Crossbones a set of puzzles
	06:00pm	Radio Show 2 (TJ and Clones)
APRIL 13		Mantissa has the Crossbones build their own clones
APRIL 14		TJ is contacted after his information is found
APRIL 16	10:00pm	Radio Show 3 (The Echelon and TJ's number)
		Sam Williams arrives in Worcester
APRIL 18		A Closer Look, Players meet with various characters on campus
		Aldridge mugs Sam, arranges with the players for his meetings, spreading the puzzle. Answer is Sam's email. He drops the email in two ways. 1. Mugs Sam. 2. Give puzzle to Dean (solution is the email & password). Ad Squads. Sam beats the shit out of Fergie
APRIL 19	05:00pm	Radio Show 4 (The Key) Fergie beats the shit out of Aldridge.
	(after 5pm)	Cuererra hands over the final puzzle, opening up all the information the players will need
APRIL 21	08:00pm	Endgame

Appendix E   Crossbones Final Chapter

Due to the interactive nature of ARGs, as game designers, you can plan several variations for how the story will turn out, but you never really know the end until the players bring it about. The following is a transcript of the final IRC conversation that took place between the players and all the main characters that lead to the resolution of the game.

Cast

LuciFer – the Morgenstern twins as played by Karin Bryant Nova.
Mantissa – Myra Selby's clone as played by Chris Drouin
Requiem – Myra Selby (the original) also played by Chris Drouin
BandESam – Sam Williams as played by Rick Desilets
Bookkeeper – José Carrera also played by Rick Desilets
HornsOfPan – Julian Aldridge as played by Adam Nakama

Duereg and Spades – two of the players.

[22:00] *** Channel mode is +tnr
[22:01] *** LuciFer has joined #boneinitiates
[22:04] *** JavaUser870 has joined #boneinitiates
[22:04] *** JavaUser870 is now known as Spades
[22:04] «Spades» Greetings, all
[22:04] «Mantissa» Quite a gathering so far tonight.
[22:04] «HornsOfPan» Indeed.
[22:05] «Mantissa» Still, I believe we are missing Jose.
[22:06] *** Bookkeeper has joined #boneinitiates
[22:06] *** BandEsam has joined #boneinitiates
[22:06] «Mantissa» And Sam, too. Your presence honors us.
[22:06] «BandEsam» Well, it looks like we've certainly drawn a crowd.
[22:07] «LuciFer» sam, it is an honor.
[22:07] «Bookkeeper» Haven't seen you in a few years, Mr. Williams.
[22:08] «BandEsam» Don't flatter me, we have business to attend to.
[22:08] *** Duereg has joined #boneinitiates
[22:08] «Mantissa» I believe this is everyone? Spades, do you know of any initiates yet to arrive?
[22:08] «LuciFer» yes, our time is valuable. let's get on with it
[22:09] «BandEsam» Now, if you don't mind, can I please hear the full story here? What exactly is going on?
[22:10] «HornsOfPan» Your society has been destroyed.
[22:10] «BandEsam» Yesterday I get a frantic call from Myra and am told things are falling apart. Yet, it doesn't LOOK like things are falling apart. So what is going on?
[22:10] «BandEsam» I need details here.
[22:10] «Mantissa» As you may have seen, there have been rather a lot of... abuses, both around the forums we set up for the initiates and around the campus.

[22:10] «HornsOfPan» Wrecked from the inside by the ludicrous mandates of the Twins.
[22:10] «LuciFer» nothing of the kind. we merely have a few unloyal members and we know how to deal with them
[22:11] «HornsOfPan» My loyalty is of the highest caliber.
[22:11] «Mantissa» Aldridge has been posting some rather defamatory materials, though he's taken to claiming innocence.
[22:11] «HornsOfPan» But I am loyal to the Crossbones, not two unwitting apes.
[22:11] «BandEsam» Now, I heard some things from you before, Myra, but as for the rest of you, let me see if I have this correct...
[22:12] «LuciFer» you have disclosed our secrets and defamed our society
[22:13] «BandEsam» Morgenstern. I don't know, or particularly care, which of the two you are. I understand you have grown egotistical, and run the society as your own personal plaything. A toy for you and your brother.
[22:13] «Bookkeeper» They toy with it to get back at each other, it's not that complicated.
[22:13] «LuciFer» we ARE the leaders of the society
[22:13] «Bookkeeper» Then why don't you lead?
[22:14] «Mantissa» Lucius, Jose, hold on for a moment.
[22:14] «HornsOfPan» Yes. How much have the initiates seen of you, Morgenstern?
[22:14] «LuciFer» there maybe some members who are unhappy with our decisions, but we have always provided firm leadership
[22:14] «HornsOfPan» Let's ask them?
[22:14] «BandEsam» I wouldn't be so quick to judge, Cuererra. I understand you have been withholding critical information. Some of which I do believe relates to the good Doctor Fritz.
[22:14] «HornsOfPan» Initiates? How much interaction have you had with either Morgenstern?
[22:14] «Duereg» I read that they've done amazing things for the society... you'd still be just one bone if it weren't for them.
[22:15] «Duereg» Nothing sadder than a lonely bone.
[22:15] «Mantissa» I'll say that they've brought some measure of order to it.
[22:15] «Bookkeeper» Information is meant to be kept. Besides, the initiates were smart enough to find it anyway. Why should I lock it away when I can allow the intelligent to find it?
[22:15] «LuciFer» thank you. someone who understands our worth and the hardwork we put into this society
[22:15] «Bookkeeper» Hard work, pah. You use these members to do your dirty work. You have taught them nothing. I have taught them the value of intellect and enlightenment.
[22:16] «Mantissa» Jose, control yourself.
[22:16] «LuciFer» we are teaching them loyalty
[22:16] «BandEsam» Selby, I have a question for you as well.
[22:16] «HornsOfPan» It isn't about who taught them what. It's about who exercises the proper mandate of rule.
[22:16] «BandEsam» I understand there's been an... incident.
[22:17] «LuciFer» something we already know Aldridge lacks and we are beginning to have our doubts about you too Jose

[22:17] «BandEsam» Have you gotten the situation under control, or is assistance required in that matter?
[22:17] «Mantissa» I believe it to be under control.
[22:17] «Bookkeeper» Hmph. I doubt that.
[22:18] «Mantissa» You would. You were involved, from what I can tell. Accounts don't hack themselves.
[22:18] «Bookkeeper» Those smart enough to see the true nature of people should be the ones in charge of those same people.
[22:18] «Duereg» I personally haven't talked with them though. And I gotta admit - someone who's interested in bringing their fellow members up like aldridge is kinda cool ... not having dealt with the leaders much - I don't really no anything about their style. I'm assuming you don't take your lead from them? (and if not... why are you in their society then?)
[22:19] «Bookkeeper» Knowledge is power in this world, my dear Myra. I wonder if you've told anyone about what you're hiding behind that cute little puzzle?
[22:19] «HornsOfPan» I was here before the brothers, and I intend to be here when they are rightfully banished.
[22:19] «LuciFer» those with the will to do what is needed should lead
[22:19] «HornsOfPan» They're only using the society for self-aggrandizement.
[22:19] «BandEsam» Watch your tongue, Aldridge.
[22:19] «HornsOfPan» I have proof.
[22:19] «Spades» Wait. Bookkeeper, was it you who actually took her accounts, then?
[22:20] «Mantissa» It's not *my* cute little puzzle, Jose, as you well know.
[22:20] «HornsOfPan» http://www.sendspace.com/file/0abs9v
[22:20] «Mantissa» Not another one.
[22:20] *** Spades has quit (Quit: Client Quit)
[22:20] «BandEsam» Just what are you two talking about? Selby, Cuererra, speak.
[22:21] *** JavaUser608 has joined #boneinitiates
[22:22] *** JavaUser608 is now known as Spades
[22:22] «Mantissa» Sam, it'd be best to leave that matter to a more private forum. Suffice to say that I believe Cuererra to be involved in the usurping of my name on the forums.
[22:22] *** rcaron has joined #boneinitiates
[22:22] «Spades» Agh, a fine time to be kicked off
[22:22] «Bookkeeper» If anyone is destroying your reputation it is yourself.
[22:22] *** Requiem has joined #boneinitiates
[22:22] «Bookkeeper» I knew you should never have had one of your own.
[22:23] «Bookkeeper» You aren't responsible enough to handle one, you're always complaining about something.
[22:23] «Mantissa» This is not the time.
[22:23] «Spades» Ah, hey Mantissa
[22:23] «Mantissa» Yes?
[22:24] «BandEsam» Things are clearly not okay in this society. Morgenstern. What do you intend to do to rectify this situation?
[22:25] «LuciFer» we will deal with Aldridge
[22:25] «HornsOfPan» Will you?
[22:25] «HornsOfPan» I'd like to see you try.

[22:25] «HornsOfPan» The evidence stands against the both of you.

[22:25] «Mantissa» We certainly will.

[22:25] «LuciFer» as soon as the initiates track you down, we will deal with you

[22:26] «Duereg» I don't think I'm going to track anyone down...

[22:26] «HornsOfPan» I stand here confidently, waiting.

[22:26] «Duereg» I'm not real supportive of people going against the society, but ... "tracking them down to be dealt with" seems pretty ... gestapo...

[22:27] «Bookkeeper» I tried to warn you, Aldridge. But you didn't listen, and now I'm under fire because of you.

[22:27] «LuciFer» to put this society back on the true path we must track down all the disloyal members and deal with them before they can spread their dissension any further

[22:27] «HornsOfPan» Enlightenment is a higher calling than Loyalty. Do you not even understand the tenets of the society you pretend to lead?

[22:27] «Spades» When we finish this conversation, then we will decide who is being tracked down. First, he speaks right. Loyalty to the Crossbones does not imply loyalty to following your directions.

[22:28] «HornsOfPan» And, Duereg, I appreciate your unwillingness to "deal" with problems on the Brothers terms, but something must happen. Something must change. Tonight.

[22:28] «BandEsam» I agree. Something must be done. The question is what.

[22:28] «Duereg» There is no peaceable way to resolve this?

[22:29] «rcaron» there is always a peaceable way

[22:29] «HornsOfPan» The Morgensterns are a terrible blight upon the Crossbones.

[22:29] «Bookkeeper» There would be a peaceable way to resolve this if we weren't dealing with buffoons.

[22:29] «Spades» That is a matter of opinion, horns. We need facts tonight.

[22:29] «Bookkeeper» By which I mean Echelon, not you Initiates

[22:29] «BandEsam» Fine then, let's go over the facts.

[22:29] «Duereg» education cures "buffoonery" better than exclusion or destruction

[22:30] «rcaron» Duereg is correct

[22:30] «LuciFer» what have we done that is so horrible Aldridge? we have merely continued to increase the power of the Crossbones

[22:30] «HornsOfPan» But at what cost? Power that has been exercised for its own sake. You have corrupted our ideals and abused the gifts of the society for terrible purposes.

[22:31] «HornsOfPan» I know what you have done with some of the clones. I've seen them with my own eyes.

[22:31] «Duereg» but I understand the need for resolution - maybe we could lay out what each side wants from this? (other than the destruction of the other side)

[22:31] «Spades» duereg, wait..

[22:31] «Duereg» Sorry, ok.

[22:32] «HornsOfPan» I will not rest until the Morgensterns have been expelled. I will not compromise on that.

[22:32] «Mantissa» Aldridge, the Brothers have brought us stability and prosperity and progress. And I cannot claim to have seen any of this "corruption" that you spout on about.

[22:33] «Bookkeeper» Because you are the corruption, Myra.

[22:33] «HornsOfPan» Yes. They are good at hiding their lies.
[22:33] «Bookkeeper» And they.
[22:33] «LuciFer» Mantissa is one of our most dedicated members as all the initiates surely know from the time she has spent with them
[22:34] «Duereg» She helped get me interested and participating in crossbones
[22:34] «Spades» Are we still under the assumption that this Mantissa is the same Mantissa you have all known for two years?
[22:34] «LuciFer» of course she is
[22:34] «Mantissa» I most certainly am.
[22:35] «Bookkeeper» Mantissa is not the Myra I once knew.
[22:35] «Requiem» Really, "sister"?
[22:36] «Mantissa» I was rather hoping you'd stay out of this.
[22:36] «Bookkeeper» You were once a shining example of enlightenment, Myra. Look what's become of you.
[22:36] «HornsOfPan» Ah, so more of the Truth comes to light.
[22:36] «Requiem» Jose, I'm sorry.
[22:37] «Bookkeeper» You were supposed to be more subtle, you realize.
[22:37] «Bookkeeper» I suppose it's too late to deal with that, though.
[22:37] «LuciFer» what is this? Jose, you admit to conspiring with Requiem?
[22:37] «Requiem» You have no right to lay a hand on him.
[22:38] «Bookkeeper» "Conspiring" is hardly the appropriate word.
[22:38] «LuciFer» we were starting to have our doubts about you, and when Mantissa said she suspected you were involved in hacking her accounts we were more concerned
[22:38] «LuciFer» now, you show yourself to be no better than Aldridge
[22:38] «Mantissa» Ha. "Portraying" would be more like it, I think.
[22:38] «Bookkeeper» You remember that conversation we had two years ago, Morgenstern?
[22:39] «HornsOfPan» I imagine he should take that as a compliment.
[22:39] «Bookkeeper» "We have judged you incapable of handling your own clone, José."
[22:40] «Bookkeeper» And why, why was it? Not because I was too weak, or too selfish, or too stupid, or too fake.
[22:40] «Bookkeeper» No, Morgenstern, it was because you were afraid.
[22:40] «Requiem» I'm suspecting now he was too smart for you.
[22:40] «LuciFer» ha!
[22:40] «Bookkeeper» You were afraid we would be too powerful. You were afraid we would be too smart. That we would overtake you as the leaders of this society.
[22:41] «LuciFer» yes, you are smart Jose, but we did not trust you then and now we see we were right not to - you betray our trust
[22:41] «Bookkeeper» I have betrayed you not.
[22:41] «Mantissa» The facts bely that.
[22:41] «Bookkeeper» You see, only a few months ago I recognized that Myra was changing.
[22:41] «LuciFer» you could never take over from us. you don't have the strength of will
[22:41] «Bookkeeper» Something was different about her, I couldn't quite place it.

[22:42] «LuciFer» that's why you have aligned yourself with characters like Aldridge and Requiem

[22:42] *** rcaron has left #boneinitiates (Leaving)

[22:42] «Bookkeeper» Alignment is such a harsh term.

[22:42] «Bookkeeper» But a correct term.

[22:42] «Bookkeeper» And yet wrong at the same time.

[22:43] «LuciFer» well, this is the time Jose - choose your side now

[22:43] «HornsOfPan» It is your insistence on making sides that is part of the problem, Morgenstern.

[22:43] «HornsOfPan» If you would simply vanish amidst the foulness you have perpetrated, we would all be better off.

[22:44] «Bookkeeper» I hold no unbreakable loyalties to anyone but myself. The one you know as Requiem has been my only close friend in all this. Aldridge has spoken words of an imprisoned sage. I assure you that when I disappear others will take my place.

[22:44] «LuciFer» clearly you are not above choosing sides yourself

[22:44] «Requiem» Once, I would have mourned your passing. Not now. Not after what I saw.

[22:45] «Bookkeeper» Morgenstern. You speak as though you have not had your own problems.

[22:45] «Spades» his discussion is about laying down the facts so that we, and more importantly, you in Echelon, are on the same page about who really is who and what

[22:45] «Bookkeeper» If I remember correctly, you and your brother have been acting... less than well-adjusted. You are not one to pass judgment.

[22:45] «Spades» Eep. Didn't mean to send that yet.

[22:46] «Mantissa» It's alright. This was not meant to become a battleground, though I did expect it.

[22:47] «LuciFer» it is our place and our right to pass judgement. we are the leaders of the Crossbones

[22:48] «LuciFer» but, since we cannot lead without those who are willing to follow us, we will listen to the new members in this

[22:48] «BandEsam» Either way, a decision must be made.

[22:48] «HornsOfPan» This sudden rush of non-stupidity from your mouth surprises me, Morgenstern.

[22:49] «Mantissa» The Brothers are not unjust, Aldridge.

[22:49] «LuciFer» you have forced this confrontation Aldridge, we are not surprised that you are well pleased with the dissent and disruption you have caused

[22:50] «HornsOfPan» I have only reaped what you have sown.

[22:52] «Duereg» Lucifer, from all we've heard and seen, and what the others have said - you've been abusing clones, using them like they don't have free will or choice or a say in thier lives

[22:52] «Duereg» But - again from what we've heard - the clones have memories, can think and act, are - in their eyes at least - every bit as much a person as anyone else

[22:53] «LuciFer» we must squash this disloyalty and rebellion in our ranks. members with me and we will deal with Aldridge and the others he has turned against us and restore this society to its true power

[22:53] «Duereg» I forget who - but someone was saying earlier - we haven't heard much from you, we don't know you

[22:53] «Duereg» I understand that the betrayal from people who were loyal to you is something you feel strongly about

[22:54] «Duereg» but can you address the issue of the clones themselves?

[22:54] «Spades» You must ask yourself whether looking out for the interests of the Crossbones is always in line with loyalty to the LEADERS of the Crossbones.

[22:55] «Mantissa» Do you know what the Brothers have done for us?

[22:55] «Bookkeeper» Do you know what the Brothers have done TO us?

[22:56] «Duereg» I'm more concerned with what they're doing right now.

[22:56] «Duereg» lol - nicely put.

[22:56] «LuciFer» clones are what make the Crossbones special and what give us our edge. they are our source of power and we treat them as such

[22:56] «Bookkeeper» They are not things to be used, Morgenstern.

[22:56] «Bookkeeper» You'd understand that if you had one yourself

[22:56] «Mantissa» They are trying to keep this group from the sort of schism that left it mired in uselessness for years, and that's that.

[22:57] «Bookkeeper» It was a power-play. They set themselves up after the schism that split the society before.

[22:59] «LuciFer» the clones are ourselves. as twins we know what it is like to have another self, how can you accuse us of all people of abusing the clones

[22:59] «Bookkeeper» Because you abuse each other.

[22:59] «Bookkeeper» You don't realize, do you?

[22:59] «Bookkeeper» I hear your conversations, I'm a very perceptive person, you see.

[22:59] «Duereg» (it ends the story of the main guy in the audio files (sam or tj or whoever) - he's the first successful clone and they create the society as a way of covering for the clone and allowing him to live - but in secret - a small society of people who know about him and cooperate to keep him secret - but they also set up the using each otehr for advantage early on too - splitting up classes...

[22:59] «Duereg» ...between them etc)

[23:00] «Bookkeeper» You talk about it in subtle gestures. You want the other gone. You're growing paranoid.

[23:00] «Bookkeeper» Soon everyone around you becomes an enemy.

[23:00] «BandEsam» ...what?

[23:00] «BandEsam» Duereg, what did you say?

[23:00] «LuciFer» our bickering? that is just normal sibling rivalry

[23:00] «BandEsam» Where did you hear about that?

[23:01] «Bookkeeper» Siblings don't plot out ways to remove each other.

[23:01] «LuciFer» Sam, it is Aldridge

[23:01] «BandEsam» Where did you get this information, Aldridge?

[23:01] «BandEsam» Tell me right now.

[23:01] «LuciFer» this is what we have been trying to show you. Aldridge has gone too far and he must be stopped

[23:02] «HornsOfPan» I have only released the Truth that the Morgensterns have manipulated to their own advantage.

[23:02] «BandEsam» Where did you get this audio thing, whatever it is?

[23:02] «Duereg» (TJ / Sam says towards the end that it all goes not so swimmingly... sam goes off, and TJ loses contact - he goes to nevada and drinks himself morose. He says things have gotten worse and worse for the crossbones and there's abuse and using of clones "for every flavor of delight" or something like that now)

[23:02] «Duereg» um - someone posted it at the beginning of the chat... let me look back...

[23:03] «BandEsam» So TJ's tried to drink it away out in Nevada then?

[23:03] «Duereg» <HornsOfPan>http://www.sendspace.com/file/0abs9v

[23:03] «Requiem» Poor soul.

[23:03] «Duereg» it's the fourth one we've had access to

[23:03] «Spades» Aldridge. Where did those audio clips come from? This IS pretty integral to the conversation, actually. Where did that recording come from, and the others?

[23:03] «Bookkeeper» You know, I've been wondering that myself.

[23:03] «HornsOfPan» It took me more work than I expect we'd see from someone like you, Morgenstern, but I managed to get in indirect contact with TJ, and he offered them to me, then cut off contact.

[23:03] «Duereg» it tells TJ's whole story (you're the original Sam? holy crud - I'm sorry Band - I didn't realise at all =/

[23:04] «BandEsam» You've spoken to TJ?

[23:04] «HornsOfPan» He would not tell me where he is beyond that, and I didn't have the chance to tell him what's been going on.

[23:04] «HornsOfPan» Again, only indirectly.

[23:04] «BandEsam» Why would he send you that information?

[23:04] «Duereg» I feel bad bringing your dirty laundry out in front of everyone... lots of us have had access to a recording TJ made

[23:04] «BandEsam» He knows the risks in revealing such stuff.

[23:05] «BandEsam» ...no, that can't be...

[23:05] «HornsOfPan» Perhaps he is sick of hiding the truth? Perhaps he doesn't wish to hide in Nevada drinking his problems away, as he says so eloquently?

[23:05] «Duereg» listen to the recordings sam... he seems to feel pretty strongly about it all

[23:05] «Spades» I suggest you listen to these recordings and judge for yourself

[23:05] «Spades» you know the voice better than any of us, if this is true

[23:05] «Spades» you could tell us whether they are fabricated.

[23:06] «LuciFer» TJ never believed in the Crossbones. Those who are loyal to our purpose and our society must bring and end to this now.

[23:06] «Duereg» That's a good point spades... we've been trying to figure out if they were reliable - I just didn't think we had an actual character witness present for TJ

[23:07] «Duereg» Lucifer - you said you'd let us decide... let us find out what we need to know to make our decision.

[23:07] «BandEsam» That sounds like TJ's voice...

[23:07] «Duereg» does it match up with what you know of things?

[23:07] «BandEsam» How could he do this? How could he betray my trust? After all this time?

[23:07] «Spades» Give him more time

[23:08] «HornsOfPan» He hasn't betrayed you. He's unveiled the Truth.

[23:08] «BandEsam» I never wanted it to be this way, it was supposed to be our secret, and no one else's.

[23:08] «LuciFer» You see Sam? This is what we've been talking about. We must take decisive action and find Aldridge and deal with him

[23:08] «Spades» This is not Aldridge's doing, he is the messenger. Listen to the message

[23:09] «BandEsam» Aldridge. Why did you do this?

[23:10] «Spades» reveal the truth? To show the things that are being done in the name of creating these clones, and to show that this might not be such a good idea despite the benefits. I think

[23:10] «HornsOfPan» Because the Truth needed to be heard. Because the Morgensterns needed to be stopped. Because I believe in the Crossbones, and nobody is more loyal to their ideals.

[23:11] «Duereg» what was created as a deception and a joke inspires someone to truth and matters of the utmost seriousness

[23:11] «Duereg» that doesn't help anyone... I'm just amazed by life sometimes

[23:12] «LuciFer» Aldridge has betrayed the very foundation of the society. The Crossbones was started to bring the knowledge of cloning to a select few who would keep our secrets until the world is ready to accept them.

[23:13] «Spades» It appears that even you are not ready to control this knowledge

[23:13] «BandEsam» That secret, that sacred trust has been broken in ways I would never have imagined.

[23:13] «Requiem» Though it is hard for me to say, I wish now that it had never been used.

[23:14] «HornsOfPan» It's too late for that.

[23:14] «Spades» Indeed. But the future is still open.

[23:14] «BandEsam» Aldridge... while you uphold truth, you still yet attack with disloyalty. You shed light on the only shadow holding this society together. This is unforgivable.

[23:14] «HornsOfPan» But if you're upset, perhaps you should contact TJ yourself, Sam.

[23:14] «HornsOfPan» You of all people should know how to contact him, right?

[23:14] «BandEsam» ...

[23:15] «BandEsam» I... it's been some time, you see

[23:15] «BandEsam» I haven't heard from TJ in... a few years, I've no idea how to contact him anymore

[23:16] «BandEsam» He never used an email but he had a cell phone a while back, but I lost the number somewhere along the line

[23:16] «Bookkeeper» How irresponsible.

[23:16] «BandEsam» Excuse me?

[23:16] «Spades» I don't suppose it ended in 5462?

[23:17] «BandEsam» It's been a long time, I don't really remember.

[23:17] «Duereg» what's that from spades?

[23:17] «HornsOfPan» Do you have his number? How?

[23:17] «Bookkeeper» Hm.

[23:18] «BandEsam» Where are you getting that number from, might I ask?

[23:21] «Spades» back, sorry.   Oh, it was on the wiki's history at one point.

[23:21] «Spades» In that experiments page, but I think it's gone now.
[23:21] «Duereg» TJ editted a page?
[23:21] «Bookkeeper» Amusing. And interesting.
[23:22] «BandEsam» Is there more to that number?
[23:23] «Spades» No
[23:23] «BandEsam» ...
[23:24] «Spades» It was a long shot, I know. But it was in that area, so I thought it might be a lead.
[23:24] «Bookkeeper» You see, you are just running in circles. You're all paranoid.
[23:25] «BandEsam» Aldridge, is this another one of your tricks? Where are you?
[23:25] «HornsOfPan» I'm here. Waiting for judgment.
[23:25] «HornsOfPan» This is most certainly not a trick.
[23:25] «HornsOfPan» This is the first I've heard of a phone number.
[23:26] «BandEsam» Yet you have been in contact with TJ, how is that?
[23:27] «HornsOfPan» I found a way to contact Tiffany Holman through email, and hoped I could get in touch with TJ through her. It was a long shot, but it paid off.
[23:27] «HornsOfPan» Through her, he sent me the audio message which I then split into four parts.
[23:28] «HornsOfPan» Then, all my efforts to contact him or her subsequently was met with silence.
[23:28] «HornsOfPan» I only assume she has not told him of my later messages.
[23:28] «HornsOfPan» If he knew, I'm certain he would come right away to put things to right.
[23:30] «BandEsam» Tiffany? Her too?
[23:31] «HornsOfPan» Yes. Apparently they're living in sin together.
[23:31] «LuciFer» we are still waiting to hear from the other members on this, but we still say the only way to put things to rights would be for you to be out of the society once and for all
[23:31] «HornsOfPan» And I feel the same towards you.
[23:31] «Duereg» "living in sin" ... sorry, that's just ... quaint.
[23:31] «HornsOfPan» That was a bit of irony on my part.
[23:33] «Duereg» Spades and I are trying to figure something out ... I'm sorry to be so quiet, we're taking this very seriously, please be patient with us.
[23:35] «Spades» good thing, too, my phone's just about dead.
[23:36] «BandEsam» Excuse me for a moment, I have to take this call.
[23:39] «Spades» :)
[23:39] «BandEsam» Pardon my disappearance there.
[23:39] «HornsOfPan» What has transpired?
[23:40] «BandEsam» It appears we have found TJ. I just got off the phone with him.
[23:40] «HornsOfPan» And?
[23:40] «HornsOfPan» He corroborates the Truth I have unveiled, yes?
[23:40] «HornsOfPan» He corroborates the Truth I have unveiled, yes?
[23:40] «BandEsam» He's currently driving to the airport to catch a red-eye so he can become a bit more... local.
[23:41] «HornsOfPan» Excellent.
[23:41] «BandEsam» TJ is coming to Worcester, he will set you all straight.

[23:41] «BandEsam» Excuse me, "it".

[23:41] «BandEsam» He will set IT all straight.

[23:41] «Spades» lol

[23:42] «BandEsam» In the meantime, I do suggest you all get some rest. He will be arriving first thing tomorrow morning.

[23:42] «HornsOfPan» And then we will have Justice.

[23:43] «Spades» ^_^

[23:43] «BandEsam» Watch those forums you seem to enjoy so much, I'll let you know when things... occur.

[23:43] «Bookkeeper» Hm.

[23:43] «Bookkeeper» So you found it out, then.

[23:43] «Bookkeeper» We'll see what happens when TJ arrives.

[23:43] «BandEsam» That we will.

[23:43] «LuciFer» We still don't understand why we need TJ to figure anything out. It is obvious what needs to be done. But we will see what happens when he gets here

[23:44] «HornsOfPan» Justice.

[23:44] «HornsOfPan» You, initiates, have more than proven your worth. You are Crossbones, so far as I'm concerned.

[23:44] «Duereg» The origin of the society... his thoughts should matter

[23:44] «BandEsam» Goodnight all. À demain, as it were.

[23:45] *** BandEsam has quit (Quit: Client Quit)

[23:45] «Bookkeeper» I agree that you here tonight have proven your worth, and in my eyes you are Crossbones.

[23:45] «Bookkeeper» However, do not forget what you have seen here tonight.

[23:45] «LuciFer» We will be watching

[23:45] *** LuciFer has quit (Quit: ChatZilla 0.9.78.1 [Firefox 1.5.0.11/2007031202])

[23:46] «Requiem» Good night. I think I can say "you have done well" myself, for once.

[23:46] «Bookkeeper» There is something more powerful than loyalty or intelligence or power. That is truth. Truth is what is most important. And in the end, truth is what will make all the difference.

[23:46] «Bookkeeper» I have nothing more to say.

[23:46] *** Bookkeeper has quit (Quit: Client Quit)

[23:46] *** Requiem has left #boneinitiates

[23:46] «Mantissa» Bitch.

[23:46] *** Mantissa has quit (Quit: ChatZilla 0.9.78.1 [Firefox 2.0.0.3/2007030919])

[23:46] «Duereg» lol

[23:47] «Spades» lol

[23:47] «HornsOfPan» Hah.

[23:47] «HornsOfPan» Well, it remains to me to once again thank you.

[23:48] «HornsOfPan» I think your actions have saved what I thought to be an unsalvageable situation.

[23:48] «HornsOfPan» And were it up to me, you have clearly proven your grasp of all three principles of the Crossbones.

[23:49] «Duereg» I feel good =)

[23:49] «Spades» ^_^ Thank you for sticking to it and working to show everyone what was going on

[23:50] «Duereg» I'm glad to have been here tonight - whatever the final outcome =) And Spades - you rock =)

[23:50] «Spades» ((Hee. I wonder what happened to Rashina, anyways.. she totally missed it.))

[23:50] «Duereg» (sorry - so do you aldridge =))

[23:51] «Duereg» yeah - I'm surprised she didn't make it - she was so into it... well - we can tell her about it in the forums I guess - you want to post up a summary for her?

[23:52] «Spades» She's got both Rainetine and Tigrael up, I think those are hers at least... She should be able to read it. can you copypasta the meeting just in case?

[23:53] «Spades» anyways, I'm out. See you guys tomorrow :)

[23:53] «Duereg» yeah - just checked to make sure it was all still copy-able - I've set up a doc with it now

[23:53] «Duereg» See you spades =)

[23:54] *** Spades has quit (Quit: Client Quit)

[23:54] «HornsOfPan» Good evening, all.

[23:54] «Duereg» goodnight =)

Appendix F   Puzzle Solves

F.1 Three-fold Path

F.1.1 Loyalty

The loyalty puzzle is a black web page with the following phrase "You must, of course, be willing to follow." The words **must**, **course**, and **follow** are each links that take you to one of the following pictures.

Figure 14 - Loyalty: "must"   **Figure 15 - Loyalty: "course"**   **Figure 16 - Loyalty: "follow"**

The solution to the puzzle comes in recognizing what each of these pictures has in common: cocaine to get **high**, a martyr raised on **high**, and climbing a **high** mountain.

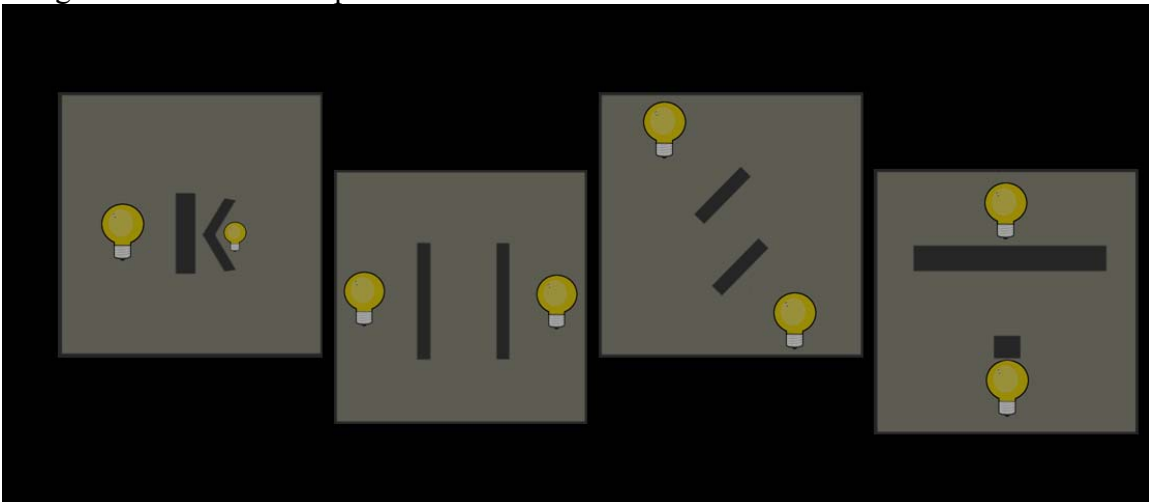### F.1.2 Enlightenment

Enlightenment is a visual puzzle.

Figure 17 - Enlightenment Puzzle

The key to solving it is to trace the shadows that would be cast if the light bulbs were turned on. The shadows form letters, spelling out the word "cost".
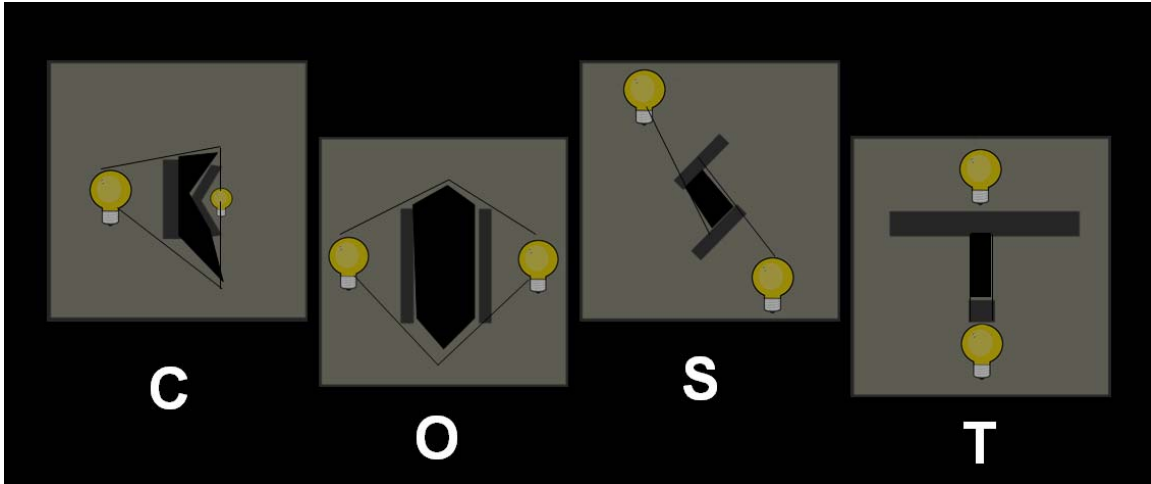

Figure 18 - Enlightenment Solve

Overall Solution

The overall solution to the entire Three-fold Path puzzle is to put together the three words "high", "cost", and "living". Googling these three words returns a hit for *Death: The High Cost of Living* by Neil Gaiman. Putting "death.htm" into the address bar gives the final solution.

Figure 19 - Three-fold Path Solution

F.2 Watchtower Puzzle

On the Crossbones Wiki, a user "Watchtower" made a serious of otherwise-invisible edits to the pages for ten different entries. In order the edit summaries read:

"There must be some way out of here,"
said the joker to the thief.
"There's too much confusion,
I can't get no relief.
Businessmen, they drink my wine,
plowmen dig my earth.
None of them alone the line
know what any of it is worth.
- - - - - - - -
One to eight, then eight to one. The answer lies within.

Clicking into the history pages leads to URLs for eight different webpages under http://xbones.org/Cuervo/.

Page 1: "There must be some way out of here,"
A simple maze. Starting at the green dot and working to the red dot, you pass through nine letters which spell out "SOMETIMES". Going to sometimes.html reveals the first sliver of the Doctor's Cache.

Page 2: said the joker to the thief.
Shown on the page is the phrase "eta omicron lambda" rotated 180 degrees. Using the actual Greek letters shows "ηολ", which when rotated looks like the word "you". Going to you.html reveals the second slived of the Cache.

Page 3: "There's too much confusion,
An interesting mind puzzle, the player is asked to find the fastest route to the white house. A grey White House is place near the bottom as a red herring. There is a single white house on the map, one the same street at which you begin, H Avenue. have.html yields the third Cache piece.

Page 4: I can't get no relief.
A visual puzzle presents itself here. In reading the phrase, the brain tends to "ignore" words if it makes the reading simpler. Thus, on the first pass it may be possible for a reader not to pick up on the doubled "to"s every time the word appears. to.html has the fourth Cache piece.

Page 5: Businessmen, they drink my wine,
Likely the simplest puzzle in the Watchtower set, a pair of words is shown, missing a single letter between them. The letters missing are R, O, L, and L. roll.html leads to the fifth Cache piece.

Page 6: plowmen dig my earth.
A mysterious visual puzzle, the player is presented with what appears to be a blank page. Saving the image and opening it in MSPaint allows the user to play with the image. Using the Paint Bucket tool will reveal the letter A. a.html has the sixth Cache piece.

Page 7: None of them along the line
A quick visual puzzle, the alphabet is written on a line four times. It is missing letters, which in order turn out to be H, A, R, and D. hard.html has the seventh Cache piece.

Page 8: know what any of it is worth.
A tricky visual puzzle, the player is presented with some seemingly erroneous Roman numeral math problems. If the image, named turn.PNG, is rotated 180 degrees, the image now has its equations corrected. The answer to the problem is VI. six.html has the eighth and final piece of the Cache.

F.3 The End is Near
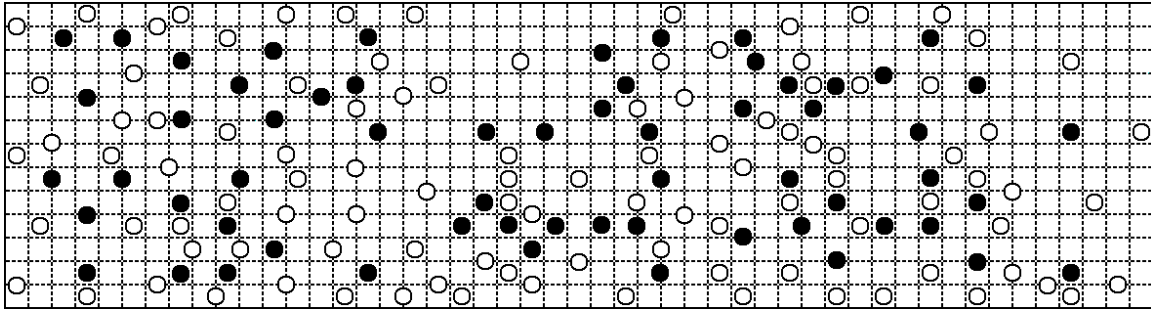
The players were given a link to the following image.

Figure 20 - The End is Near Puzzle

References

Books

Szulborski, Dave. *This is Not a Game – A Guide to Alternate Reality Gaming*, New Fiction Publishing, 2005.

Web Hosting & Other Services

Hosting for the Crossbones site from SiteGround
http://www.siteground.com/

Hosting for Mantissa's blog from Blogger
http://blogger.com

Hosting for Ben Jecker's blog from LiveJournal:
http://livejournal.com

Hosting/distribution for the radio play MP3 files
http://sendspace.com

Hosting/distribution for the end videos from YouTube
http://youtube.com

Web traffic analysis from Google Analytics
http://www.google.com/analytics/

Hosting for the Crossbones profile from MySpace
http://www.myspace.com/

Hosting for the Crossbones profile from Facebook
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PHPBB References

PHPBB Forum Software for the Crossbones –
http://www.phpbb.com/

PHPBB User Guide - http://www.phpbb.com/support/documentation/2.0/

PHPBB Extensions –

xand_1.2 Style: http://www.phpbb.com/community/viewtopic.php?f=22&t=355426
Style Author: spleen
Style Description: Orange theme with dark background.

Edit Post Date Mod: http://phpbbhacks.com/download/883
Author: ErDrRon
MOD Description: This hack allows the Admin(s) of your forum to change the posting date of any post on the forum.

Slick Forum Admin Mod: http://www.phpbb.com/community/viewtopic.php?t=471324
Author: damnian
MOD Description: Better forum management

Slick Group Admin Mod: http://www.phpbb.com/phpBB/viewtopic.php?t=468852
Author: damnian
MOD Description: Better ACP group management

Slick Style Admin Mod: http://www.phpbb.com/phpBB/viewtopic.php?t=492478
Author: damnian
MOD Description: Better style management

Firefox Autocomplete Bypass Mod:
http://www.phpbb.com/community/viewtopic.php?t=446724
Author: Thoul
MOD Description: Prevents Firefox's overwriting of username and password fields in the admin user editor.

Admin Userlist: http://www.phpbb.com/phpBB/viewtopic.php?t=117359
Author: milkboy31
MOD Description: This MOD lets you view all of your members and various information about them in the Admin Control Panel. From the list, you can perform various actions on multiple users. Delete, Ban, Unban, Add to Usergroup, etc...

MediaWiki References

MediaWiki Wiki Software for the Crossbones -
http://www.mediawiki.org/wiki/MediaWiki

PageSecurity Extension for MediaWiki
Author: Fernando Correia
Description: Restricts access to pages according to security definitions.

MediaWiki Help - http://www.mediawiki.org/wiki/Help:Contents
Working with Skins - http://meta.wikimedia.org/wiki/Skins
Configuration Settings - http://www.mediawiki.org/wiki/Manual:Configuration_settings
Navigation Bar - http://www.mediawiki.org/wiki/Manual:Sidebar
Special Pages - http://meta.wikimedia.org/wiki/Help:Special_page
Extensions - http://www.mediawiki.org/wiki/Extensions

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http://www.php.net/docs.php

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http://java.sun.com/j2se/1.5.0/docs/api/index.html

Centering CSS Elements on a Page -
http://www.wpdfd.com/editorial/thebox/deadcentre4.html

CSS Positioning from BrainJar.com
http://www.brainjar.com/css/positioning/

3 Column Fixed Center, Fluid Left/Right Layout -
http://www.csscreator.com/node/16447

Development Tools

Macromedia Dreamweaver MX : http://www.adobe.com/products/dreamweaver/
Microsoft FrontPage: http://office.microsoft.com/en-us/frontpage/default.aspx
TextPad 4.7.3: http://www.textpad.com/products/textpad/index.html
Adobe PhotoShop CS 2: http://www.adobe.com/products/photoshop/family/
FireFox 1.5: http://www.mozilla.com/en-US/firefox/
FireFox IE Tab Extension: https://addons.mozilla.org/en-US/firefox/addon/1419
Eclipse SDK http://www.eclipse.org/

IRC Software

Mozilla ChatZilla: http://www.mozilla.org/projects/rt-messaging/chatzilla/
WPI IRC Java Client: http://www.wpiirc.net/chat/