Canterbury Shaker Village Preservation Project

An Interactive Project
submitted to the Faculty of
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfillment of the requirements for the
Degree of Bachelor of Science
by

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 Abstract

     Canterbury Shaker Village has a unique collection of digital audio tapes and audio cassette tapes, which are becoming obsolete. The tapes contain Shaker interviews that are of utmost importance to preserve. The project is to convert the tapes to MP3 and write up the process. The finished digitally converted interviews will be given to Canterbury Shaker Village so they may be accessible to scholars and the general public who would like to learn more about the Shakers.

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The Canterbury Shaker Village

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Introduction

WPI aided the Canterbury Shaker Village of Canterbury, New Hampshire, in the preservation of some of their audio tape collection containing interviews with Eldresses from the village. This service was done because the tapes are delicate as well as slowly becoming inaccessible, which will make them fairly useless in future years. The task was to convert the tapes into digital format to be stored on a computer for use in a database at the Canterbury Shaker Village.

The Shakers as a utopian society were significant because they recognized the equality of races and genders decades before slavery ended, and over a century before women were allowed equal rights in the United States. Shakerism was built on the American idea of the time, individualism and collectivism as one, but American society had much to learn from the Shaker way of life. As Thomas Jefferson once said, "If it can be sustained their religion will overcome all others" (Burns).

As a former Shaker community, Canterbury Shaker Village is now a museum that is open to the public so that people may better learn about whom the Shakers were, how they lived, and how their beliefs were important in the formation of today's society. People who visit the village may take tours of the many Shaker buildings and gardens to better understand why the Shaker way of life was the most successful utopian society ever established in America.

During the 1980s and 1990s a few of the remaining Shakers of the Canterbury Village made several DAT and audio cassette tape recordings speaking and singing about what is was like to live as a Shaker. With fewer than five Shakers living in 2006, these

first-hand accounts of the Shaker life are priceless pieces of history that can never be replaced.

An IQP is a project which relates technology and science to society or human needs. This project did exactly that. Using the technology and skills that we have learned at WPI we were able to complete the task of converting the tapes and did a great service to the Canterbury Shaker Village. This project was time consuming because of the method of conversion, and would have cost the village a substantial amount of money. Through the IQP program at WPI we were able to provide this service free of charge for the Shakers.

The Shaker's of Canterbury Village would have loved this project, because like all Shakers they not only embraced the technologies that the world had to offer, but also developed many of their own technologies to use in their daily lives. In their ideal lifestyle everything they did was to perfection, so this is one additional reason for them to want to obtain the state of the art and most current technologies. Updating the technology that their interviews are stored on would be exactly what they would have wanted.

In the ever-changing world of technological advances, the outdated DAT and cassette tapes will someday be rendered useless in the digital world. Converting these tapes to digital copies while cassette tape and DAT players are still available is very important in persevering the legacy of the Shakers. This project is not only of great significance to the Canterbury Shaker Village but to everyone who can learn something from the knowledge that the Shakers have to pass on.

Who Were the Shakers?

How They Began

In Manchester, England, in 1747, James and Jane Wardly left the Society of Quakers to form their own group known as the Wardley Society. The Shakers formed as an offshoot of the Quakers when an illiterate factory worker named Ann Lee sought spiritual protection, and joined the Wardlys in 1758. In 1770 Ann Lee became the leader of the group and from then on was known as "Mother Ann". The radical religious group was known as the Shaking Quakers or Shakers because of their use of dance during worship. They fled England due to persecution related to Ann Lee's assertion that she embodied the Christ spirit and because of Mother Ann's vision telling her to go to America. (Horton)

Under the leadership of Mother Ann the eight followers in United Society of Believers in Christ's Second Appearance arrived in New York City in 1774. The Shakers settled in Watervliet, New York, in 1776, and started a community based on religious devotion, celibacy, and communal labor. (Nicoletta)

During this time period there was a massive religious revival across the New England states. People feared for their souls and worried they would go to hell; they were searching for a place to find God. It was a good time to try and get new converts so they set out on a two-year missionary trip traveling eastward. They hoped to gather many converts, and they did, especially in the rural areas. Shaker worship gave a feeling of immediate satisfaction, which was something converts found missing from other religions. Over a period of eight years, eleven Shaker settlements had sprouted up all across New England, with several hundred members. They were met with hostility,

because more traditional societies felt the Shakers posed a threat by stealing potential converts. Others thought the Shakers practiced witchcraft, and said the Shakers stole wives from their husbands. (Burns)

After her death in 1784, Mother Ann's successor, Joseph Meacham, played a main role in forming Shakerism into an organized religion by assigning set ways of worship, communal property, social behavior, and architecture to paper. This put a new emphasis on discipline, whereas Ann Lee had focused more on religious expression. Meacham also set down that there would be separate but equal roles between men and women.

Members became settled in their own communities on land that was donated by members. Together they built communal dwellings, and appointed Elders, deacons, and trustees.

Meacham made the first truly official Shaker community establishment in 1787 at Mount Lebanon, New York. It was the site where Meacham oversaw and made decisions to form the ministry. It was the head Shaker village until it closed in 1947. All eleven Shaker villages became established as official Shaker villages by 1794. These villages were: Watervliet, New York, 1787; Hancock and Tyringham, Massachusetts, and Enfield, Connecticut, 1790; Harvard and Shirley Massachusetts, 1791; Canterbury and Enfield, New Hampshire, 1792; and Alfred and Sabbathday Lake (then known as New Gloucester), Maine, 1793. By the late 1800s there were a total of 22 establishments spanning from Maine to Florida and as far as westward as Indiana. (Nicoletta)

Spiritual and commercial leadership helped the Shakers continue to grow until they reached a peak of nearly 6,000 in the mid 1800s. Commercial leadership would be

the sustaining income of the Shakers. Their products were known for flawlessness in craftsmanship, and they were in a league of their own in the selling of seeds and herbal medicines. Spiritual leadership was a form of recruitment to keep the religion sustained. People felt that the Shakers offered something spiritually touching that no other religion could provide (Burns). Some Shaker services were open to the public so outsiders could see what Shakerism was like, and possibly convert. People became interested in the simplicity in which they lived their lives, and the Shaker ways of worship.

The Decline

Following the Civil War Americans lost interest in new utopian societies and became more concerned with the increasing urban and industrialized society. The factories of the new industrial age could turn out a large number of products in a shorter amount of time. The Shakers crafts were made to be perfect, not profitable; in time their goods became overpriced and uncompetitive (Burns). In addition to the public's loss of interest, new laws restricted the placement of orphans into religious societies, creating an inability to create a new generation of believers (Harlan). Many of the orphans that were already living with the Shakers chose to leave the Shakers when the time came to see what opportunities the "outside world" had to offer (Burns). Over time this led to the steady decline of the Shakers. In 1961 only Shaker sisters remained, and there are fewer than five left today at the only acting Shaker Village left, in Sabbathday Lake, Maine (Harlan).

What Were Their Beliefs?

Two primary beliefs of the Shakers were to practice celibacy and to maintain simplicity in their daily lives. Celibacy was there way of dedicating themselves fully to God, and was part of the effort to build a more unified community by suppressing all individuality. The Shakers did not look down on people who did not believe this. They felt that there were two types of humanity: one for reproducing, and the other dedicated to doing the Lord's work. They were the latter of the two (Nadeau).

The core of their belief was that God is not the traditional Christian trinity, but instead is both male and female. Mother Ann Lee said she was the female version of the Second Coming of Christ (Harlan). All aspects of Shaker lives are to be Christian, pacifist, non-materialistic, anti-slavery, and respectful of the land and natural resources (Nadeau). They were to remain simple in appearance, food, and living arrangements. Shakers were not allowed to have private ownership, and everything belonged to the community as a whole. Other key beliefs of the Shakers were the equality of all people in gender and race, universal love, separation from the world outside of their village, and confession of sins. Universal love means that everyone should be loved equally, and no one person should be loved anymore than another, like a spouse. Separation from the outside world means that they did not have ties with society outside of the village other than for trade. They did not hold jobs, visit family who were not Shakers, or have anything at all to do with any type of politics. In order to become a Shaker you needed to agree, and conform to the Shaker values. The Shakers also believed that God appeared through people, as well as the breaking of family bloodlines inside and outside of the village. This means that when a whole family joined a Shaker community the family ties

were broken. A husband and wife were no longer; women and men were separated in daily activities and sleeping arrangements. Children no longer had two parents, but instead all of the elders of the community helped in raising the village children. The Shakers were strongly opposed to war, and did not serve, even if they were drafted. When Lincoln was the President he made it impossible for them to be drafted, by granting them the right not to fight (Burns) (Nadeau).

Becoming a Shaker

Since Shaker growth was limited to converts, all peoples were welcomed to join. They wrote pamphlets explaining their religion and gave services that were open to curious public. The converts could be single or as a family, and orphans or children learning the trades were sent to live with the Shakers as well. All children who lived with the Shakers did not become Shakers. When they reached the age of 21 they were then given the decision to leave the village and go to the outside world or stay and take a vow of Shakerism (Burns). Once someone decided to convert to Shakerism he or she would turn over all of his or her properties to the village so that they may be shared as a whole. He or she cut all ties with families from the outside world, and confessed all of his or her sins to an Elder or Eldress (Nadeau).

The Shaker communities had three different family orders. The Shakers who were fully entered into the society were called the Covenanted Shakers. Covenanted means, to promise to a binding agreement; the Covenanted Shakers were dedicated to the Order. These were the Elders and Eldresses; they were longtime Shakers who helped in making important decisions for the village. The Covenanted Shakers were in the Senior

Order and belonged to the Church or Center Family. Next was the Novitiate Order, converts that came married or with family ties were part of this order. A novitiate is a person who has entered a religious order but has not yet taken final vows. The families that converted together did not live together, because men and women lived separately. The Junior Order was for those people who converted singly. The Novitiate and Junior Order Families were named according to where they lived in relation to the Church Family or according to what their job was; so there were North and South Families, as well as Mill and Brickyard Families. In some villages Families were numbered instead, for example First or Second Family (Van Kolkin).

Life in a Shaker Community

Each Shaker Village was divided into Families, and in each Family there were Elders and Eldresses, deacons and deaconesses, and trustees who each had their own job within the family. The Elders and Eldresses governed the Family spiritually; the deacons and deaconesses managed the daily work; and the trustees kept the Family's finances and business transactions in order. The village as a whole was governed by the Church Family Elders and Eldresses (Van Kolkin).

The dwelling houses were like dormitories, with separate ones for men and women. The Meetinghouses were divided so that men and women sat on opposite sides of the room, as well as used different doorways and stairwells. In the large circular dances that would take place in the Meetinghouse there was a strong presence of dancing, singing, and clapping in the worship of God. "The men and women were segregated to prevent them from touching one another during the epileptic-like fits that they fell into

during worship. The elders would watch over them through the windows, to make sure no physical contact happened" (Wikipedia). These crazy dances only took place for about the first hundred years of Shakerism, after that the dances because much more ordered and systematic (Burns).

On an average summer day Shakers woke at 4:30 a.m. and did morning chores like milking and feeding cows for the men, and closing windows and breakfast preparation for the women. After the morning chores were finished they had breakfast and morning prayers and then went back to work. They would then break again for mid-day prayers and have lunch, which was the biggest meal of the day. After lunch they worked until dinner, at six o'clock. After dinner there was meditation for thirty minutes, and then singing, worshiping, socializing, or reading took place before a retirement early in the night (Burns).

Shaker Commercialism

The Shakers were aggressive entrepreneurs, who launched industry after industry, and reinvested the earnings into community enterprises to encourage greater growth and productivity. At the height of movement they were successful in competing with the outside world. They made leather in New York, and at one time were the largest producers of medicinal herbs in the United States. They sold garden seeds, and were also the first to sell seeds in paper packets. The village in Shirley, Massachusetts, sold their apple sauce, and in Alfred, Maine, they sold woven linen and knitted underwear. In Indiana they distilled and sold whiskey, and in Kentucky they raised silkworms and sold silk. Other villages were well known for their wines, sauces, jellies, sausages, opium,

brooms, and oval boxes (Burns) (Nadeau). Mother Ann said, "Labor to make the way of God your own; let it be your inheritance, your treasure, your occupation, your daily calling" (Wikipedia). The Shaker "brand" quickly became known for quality, integrity and reliability. They were especially well known for their furniture in later years because of the plain, durable, and functional style. A Shaker chair would take weeks to make because only one craftsman made it and he made sure that every aspect of the chair was absolutely perfect (Burns). With the Industrial Revolution came mass production so the Shakers could no longer compete. The Shaker population began to decline. With fewer craftsmen, fewer items could be produced. In 1906 the Pure Food and Drug Act restricted the sale of patented medicines (Nadeau).

Shakers and Technology

Neighbors of Shaker communities were envious of the Shakers' success in the utilization of mechanical means, efficient operation of the routines of their daily lives, and in their agricultural productions (Richmond). Though it may seem contrary to what most people may think the Shakers not only accepted technology of the outside world, but truly embraced any technology that could aid in the efficiency of their lives. In some areas the Shakers introduced many technological advancements that we have today. The Shakers looked for the most practical, efficient, and timesaving techniques and devices to help aid them in their everyday lives. Being avid readers they applied their knowledge to manufacturing and agriculture, developing many new inventions. Some of their many inventions included the common flat household broom, tilting chairs, writing pens, a screw propeller, a rotary harrow, an automatic spring, a threshing machine, and apple

parer and corer, a revolving oven, and the circular saw. The Shakers also made large improvements on things that had already been invented like stoves, printing processes, the washing machine, and the lathe (Nadeau).

History of Canterbury

The Canterbury Shaker Village of Canterbury, New Hampshire was the seventh community in the United States formed by the Shakers, and was established in 1792. The land on which it stands was donated by convert Benjamin Whitcher that same year. A religious whirlwind led to many converts and a peak of the village's membership in 1850. The 3,000-acre village of 100 buildings, including houses, shops, stables, a laundry, a school, an infirmary, and the Meetinghouse were the homes and working places of the 300 people who lived there.

The Shakers as a whole were extremely successful in comparison to other utopian and communitarian societies. "By the 1830s the Shakers at Canterbury were rich in buildings, land, cash, wood lots, livestock, produce, industry, community possessions and community skills." (CSV website)   At the Canterbury Shaker Village they prospered in the fields of farming, livestock breeding, water-powered mills, and the production of seeds and herbal medicines. On top of all of this Canterbury became the publishing center for all of the Shaker communities in the North following the opening of a small print shop by Elder Blinn.

After being an active Shaker Village for 200 years, it became solely an outdoor history museum in 1992 after the last Shaker sister there died. It was the second to last Shaker Village still open, and it is now one of the oldest, most typical and most

completely preserved Shaker Villages. It is also the only village to have two original buildings that have never been moved: the Meetinghouse, designed by Moses Johnson and built in 1792, and the three-story Dwelling House, built in 1793.

Canterbury Shaker Village is a great landmark for tourism and education containing 200 years of history. There are buildings, exhibits, and people there to help pass the knowledge of the Shaker life onto its visitors. Canterbury Shaker Village is the most frequented cultural landmark in New Hampshire with 60,000 visitors each year (CSV website). There are also 30,000 objects, 10,000 photographic images, and over 35,000 manuscript items in the Canterbury Shaker archives that act as a great resource on the Shakers. The scope of people that have used these resources ranges from elementary school children wanting to hear the voice of a true Shaker, to scholars researching music, to the Canterbury Shaker Village staff trying to find out how to set up the museum as the actual village once was (Carroll-Plante 4/13/06).

Narrative of the Project Process

The IQP covered four terms, A, B, C, and D. The project consisted of different tasks which needed to be done so a plan was drafted to split the project up over the terms. A term was set aside for researching and planning the best way to do the audio conversions, another two terms for doing the actual conversions and the final term to finalize the conversions, write the final paper and prepare a final presentation.

During the initial planning there were a few aspects of the project that needed to be researched. Information that was needed for the project included background studies of the Shakers', technological details pertinent to the conversion process, such as bit rate and storage, as well as other scheduling and planning details. The research that was done also explored the options for methodology, and equipment to be used during the actual conversion process.

The first major task of the project was to start the audio tape conversions. This included the conversion of about ten DAT tapes, and about sixty-five regular cassette tapes. During this part of the project the importance of the project was reinforced because the obscurity of the DAT player proved to be more severe then anticipated. The obsolescence of the DAT player demonstrated that preserving and converting the collection is important so that the valuable data is not lost.

During the conversion process the audio tape quality came into question due to the poor quality on some tapes. In a couple of cases the less than desirable audio was determined to be caused by the original recording process and poor equipment. Another potential cause of the poor quality of some of the tapes could have been the degradation of the tapes. Once again we were confronted with another reason why the project is so

important. The longer the project was put off, the worse the quality of the tapes would become.

During the course of the project a connection with the Shaker Village was maintained for asking questions as well as progress reports. A trip to the village was made to look at the collection in its entirety as well as to discuss in person the scope and goal of the project. A need for the audio files to be split into useful sections for a virtual museum came up which dictated another section to our project; to split the audio files into shorter more useful clips.

Once the technical parts of the project were done it was time to prepare a presentation for the staff of Canterbury Shaker Village as well as write up the final paper. The paper would cover the project in its entirety from specifics of the conversion process to the historic importance of the Shakers, and why the project is important to the village.

Technology Overview

The technology part of this project consisted of converting the physical media to a more useful digital format. The process involved converting cassette tapes and DAT tapes into a digital audio format on a computer. The purpose of the project was to record the interviews onto a computer so that the audio files could be put into a database and accessed for either research, or used in an exhibit where an audio track could be used to help the audience learn more about the Shakers.

Certain precautions were taken in order to ensure that the media was not ruined during the process of recording onto the computer. Cassette tapes were played in a good player and were handled and stored with care. This minimized any tape damage during the recording which helped to obtain the best audio recording possible.

The process for converting the physical media to a digital audio file was to play the tapes into a computer, generate a file, and store them on a hard drive. The actual procedure for setting up the equipment, and using the software can be found in the *Set Up and Transfer Procedures* section of the paper found on page 21.

One of the first considerations made during the initial research was the type of audio format to use to store the digital audio file. There are many formats available to store digital audio in: WAV, MP3, FLAC, OGG, and many others. (A glossary can be found on page 41.) There are too many to list here because many companies come out with their own proprietary format which is only used for their software and is not widely compatible. What these file names represent are different ways to encode or compress the audio information into a digital file format. These files can also be recorded at different bit-rates which will dictate how good the quality of the audio will be. The bit-

rate is how much information is read in a second; the higher the bit-rate, the higher the quality and vice versa. A WAV file is typically a lossless format which is as close to an exact replica of the original audio that is possible. Due to the quality of this type of file it is usually the largest of the different types, but is also the highest quality. When converting a WAV file to an MP3 the encoding is compressing the file to a smaller size by lowering the bit-rate. By lowering the bit-rate, information is taken out of the file, thus lowering the quality. Since the human ear can only detect a certain amount of distortion or loss in an audio signal, this loss of information in an audio file is usually acceptable.

Converting a WAV file to an MP3 file is an easy process that many programs can accomplish. One major concern when doing the conversion is what bit-rate should be used. The lowest bit-rate that should be considered for speech is about 16 Kbps, but to be safe 32 Kbps would be the lowest bit-rate used for this project. With a 32 Kbps bit-rate approximately 46 hours of audio could be put onto one CD –R worth of space.

A hard copy for storage of the data may be useful to consider. If a hard drive were to crash or get corrupted the data could become irretrievable or even permanently lost. One way to prevent this is to write the data to CDs or DVDs depending on the amount of data to be written. CDs and DVDs are prevalent and aren't likely to be replaced anytime in the immediate future, thus a good choice for media. Eventually, if a new technology comes out, and a new type of media is used prevalently, the CDs or DVDs should then be converted to the newer technology.

The hard copies of this data will need to be stored correctly. A CD case keeps the CD out of direct sunlight and prevents it from being scratched. Backup CDs also must

be put onto a good quality CD or DVD because the quality will dictate its durability. To choose a good quality CD or DVD do not purchase the least expensive version. Use a known brand such as Memorex or Sony. They tend to have a longer life than a store brand or inexpensive brand.

For additional methods of backup, having a separate server or hard drive with the information on it would be beneficial in case of a system failure. A good way to do this is to have the data backed up as often as possible if changes are made constantly; many different computer programs will do that automatically, and save the data to a remote computer to prevent loss of data.

Conversion of Tapes and Its Importance

Why is it important to preserve these tapes? These are invaluable documents because there is an important aspect to a spoken interview that is lost in a written interview. When someone is interviewed there is an additional level of personality added to the information that is impossible to achieve through writing. It is important to take these tapes and convert them to a new technology, because cassette and DAT tapes are someday going to be obsolete and therefore useless. Though the technologies still exist to play these tapes, it is important to try and keep up with technology so that the information can be readily accessed at the current time as well as ready to convert to the next popular type of technology that might come along.

Where is the technology going to be with in the next decade or so? This is an important consideration because we would not want to convert the interviews to a technology that will not be around for a long time. The DAT tapes, for example, were

once an advanced technology, and seemed like a good idea because of their quality at the time, but DAT tapes did not take a lasting piece of the market, making them very hard to find now. This obscurity caused most likely by the boom of the CD and computers made the tapes essentially useless, mainly because of the difficulty in finding a player. The current technology points towards a digital media file that can be used on a computer or an assortment of portable media players such as an iPOD or PSP type devices. As technology progresses it appears that something like the iPOD will be the primary device for audio within the next decade, so a file type that can be stored easily on a computer and transferred to such device will be the most practical and useful to have. Any new technologies that come out may be worth considering as an option but just because it is a new technology definitely does not mean that it will last.

In the future, interviews probably will be done with a laptop or an iPOD type device, because they are easier and more efficient to use in many applications. If this were to be the case, any future interviews with the remaining Shakers or about the Shakers can be easily added to the village's collection, because it will already be in a similar or identical format to what was used in this project.

The first thing that needed to be done to start the conversion was to select a program that enabled audio input to be converted into an MP3 file and saved. After some comparison and research about available programs, a free program called Audacity was chosen to accomplish the conversion. Directions about how to use Audacity can be found in the later section entitled *Set Up and Transfer Procedures* on page 21.

The second step in the process is to start putting the physical media into digital files. This process consists of playing the tapes and recording them into the computer,

which will record the audio in a lossless format; meaning that it is an exact replica of the cassette tape. The file is then converted to the compressed MP3 format and saved. Once the data has been saved to the computer the next part will be to go through the audio file and separate it into different sections or tracks so that it is easier to access the points in the interviews that may be pertinent to what is being sought. The method for splitting the files involves manually going through the file and finding the point when the subject changes during the interview and marking the time. The next step is to split the file at those marked points and saving them individually. It is also important to save the original file along with the split files so that the original file is not lost.

Set Up and Transfer Procedures

Cassette Tape Transferring Procedure

The process for recording the cassette tapes to a digital format is an easy process. There are only a few steps, it is just slightly time consuming because the conversion is a real time conversion. Detailed instructions are provided on how to do this using very basic equipment that will give the results needed.

The first step is to gather the necessary equipment to start the conversion. Here is a list of the equipment required.
- Computer
- Audio Recording Software
- Cassette Tape Player
- Stereo Receiver
- Y Adapter

All of these pieces will be discussed thoroughly in the following section to ensure that compatibility will not be a factor.

Computer

The only true requirement is that it has a microphone or line-in input. This is usually present on most laptops and many desktop computers. It will usually have a picture next to the plug and will also be located near the headphone jack. The line-in input is a $1/8^{th}$ inch jack that looks like the headphone jack, but works the other way, takes the audio signal in.

To make the process easier, be sure that it at least has a good speed processor, greater than 1 GHz is usually enough. This will make the conversion to the digital format smoother and quicker.

Cassette Tape Player & Stereo Receiver Setup

The cassette tape player should just be of good enough quality that it will not destroy the tapes. One suggestion is to make sure that it is clean and is known to work prior to using on a valuable tape. The first step will be to take the "Audio Out" RCA plugs and plug them into the back of the receiver in the "Auxiliary Input" (Refer to Figure 1 and Figure 2). Turn on the receiver and turn on the tape player. Set the receiver to play the auxiliary input; this is done by a button or knob on the front of the player that changes the source. Now take a Y Adapter and plug the double end into the "Tape Out" or "Aux Out" of the stereo receiver and the $1/8^{th}$ inch jack part into the "Mic In" on the computer. This will give you the correct configuration. (As shown in Figure 1)
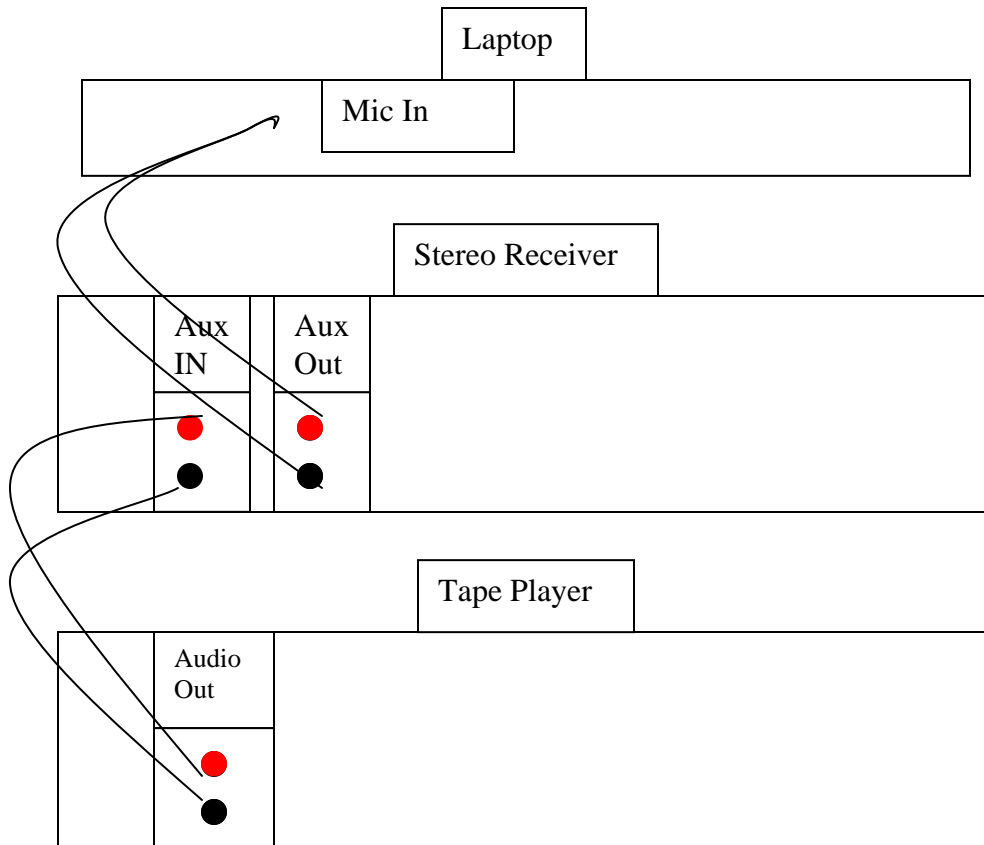
Figure 1 – Tape Player & Stereo Receiver Setup

Figure 2 – Pictures of Possible Equipment

The top picture of Figure 2 shows the back of a standard stereo receiver that does not have a specific auxiliary input but you could use the "CD" input and then use the "Tape Out" as the output to the computer. The middle picture shows the typical tape player output that could be plugged into the Aux in of the receiver. The bottom picture has an example lap top that has the microphone input on the front.

Software

The software that we selected to use in this project is called Audacity. It is a free program that works very easily to record the audio input of the microphone on the computer. Audacity can be found at its own website: http://audacity.sourceforge.net. This program is very intuitive, and was found to be easier to use than "Goldwave" and "Windows Media Player" and also was free making it an easy choice.

Installing Audacity

The first step is to download the file to your computer and open the setup file. Once the file is opened, the following set of screens will come up; follow these simple directions to proceed.

Figure 3 – Welcome Screen

Click the "**Next**" button to proceed.
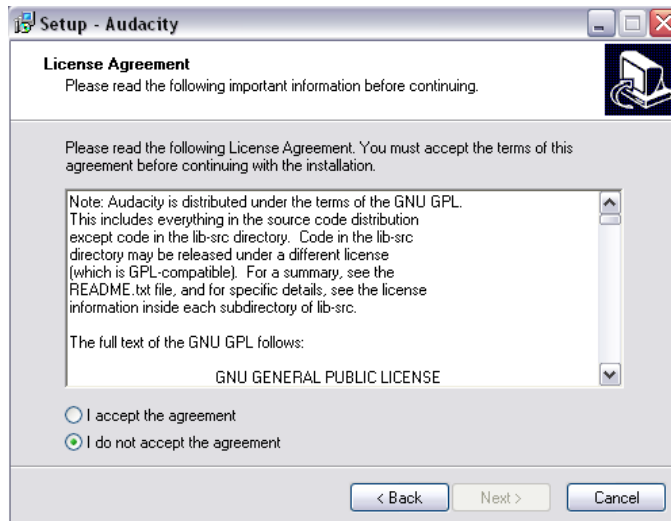
Figure 4 – License Agreement

After reading the License Agreement check the "**I Accept the Agreement**" box and click "**Next**".
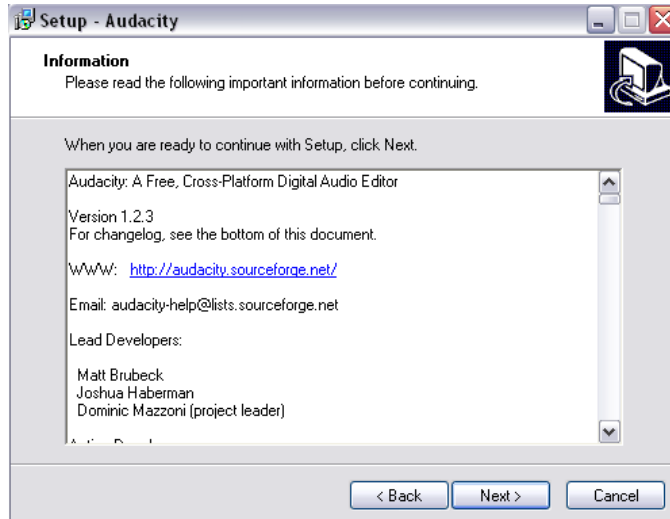
Figure 5 – Important Information about Audacity

Read the important information and then click "**Next**".
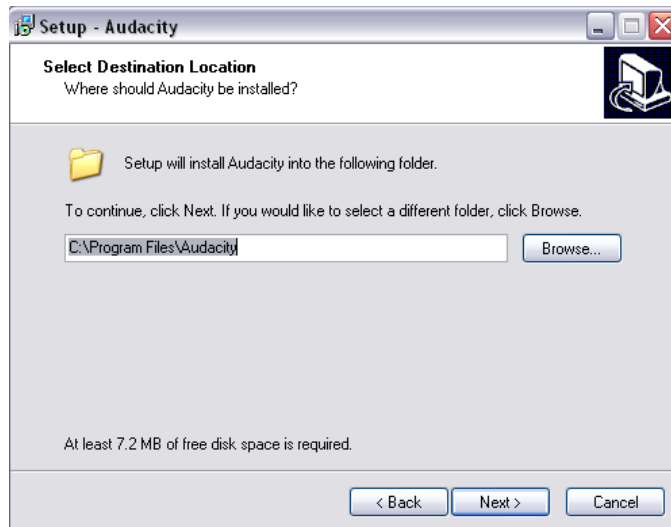
Figure 6 – Installation Directory

Choose the location on the computer to install; the default is in the Program Files, which is a logical place to install the program, and then click "**Next**".
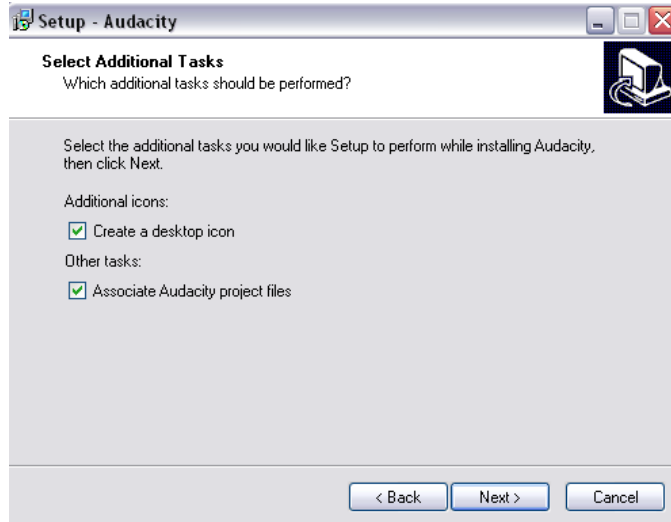
Figure 7 – Addition Tasks

Decide if you want the desktop icon for convenience and check the "**Associate Audaacity Project Files**" box. Then click "**Next**".
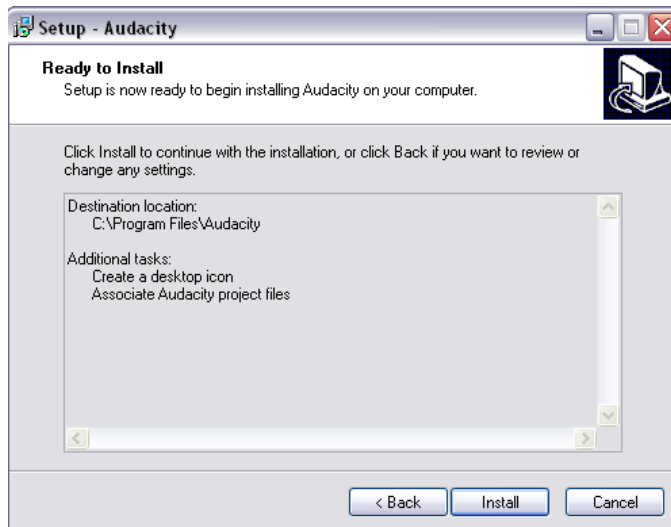
Figure 8 – Ready to Install

Now we are ready to install, click "**Install**".
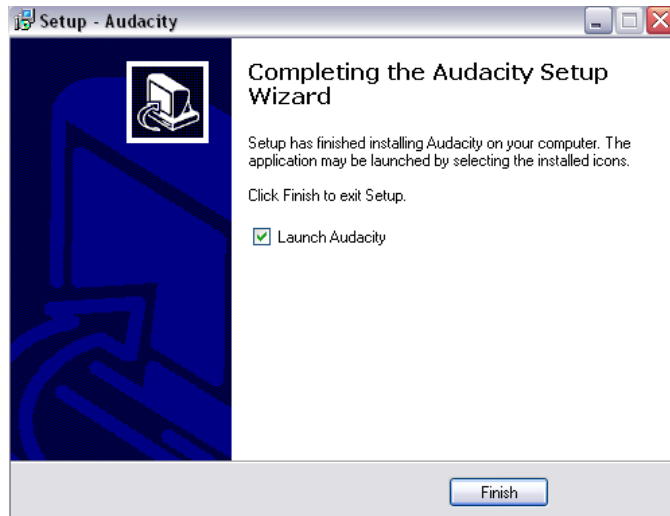
Figure 9 – Completed Installation

Now it is installed and you can start the program. Click "**Finish**".

Using Audacity

After successfully installing the program, you are now ready to being using our program to do our audio transferring. To use the program follow these detailed steps on how to use the program to transfer the audio to digital format.

When the program opens, the screen will look as follows:
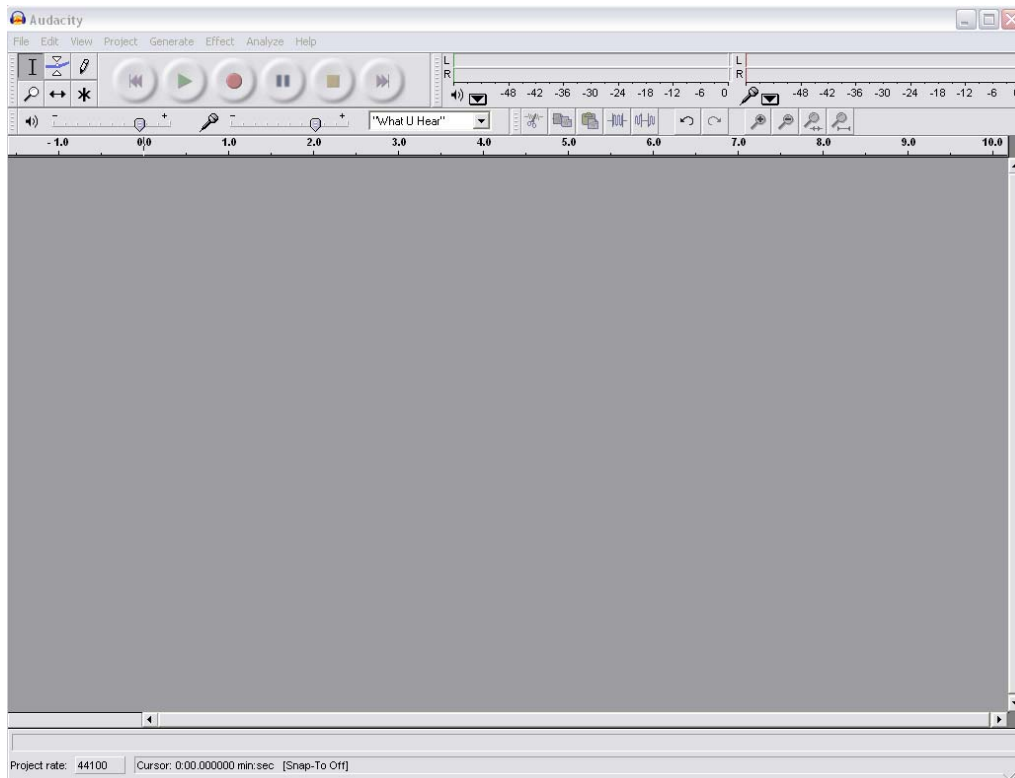
Figure 10 – Audacity Welcome Screen

The next step will be to use the drop-down menu and select the correct input for the recorder to get the correct audio signal. Click the arrow next to the "**What U Hear**" box and select "**Microphone**" to switch the source to the correct input.
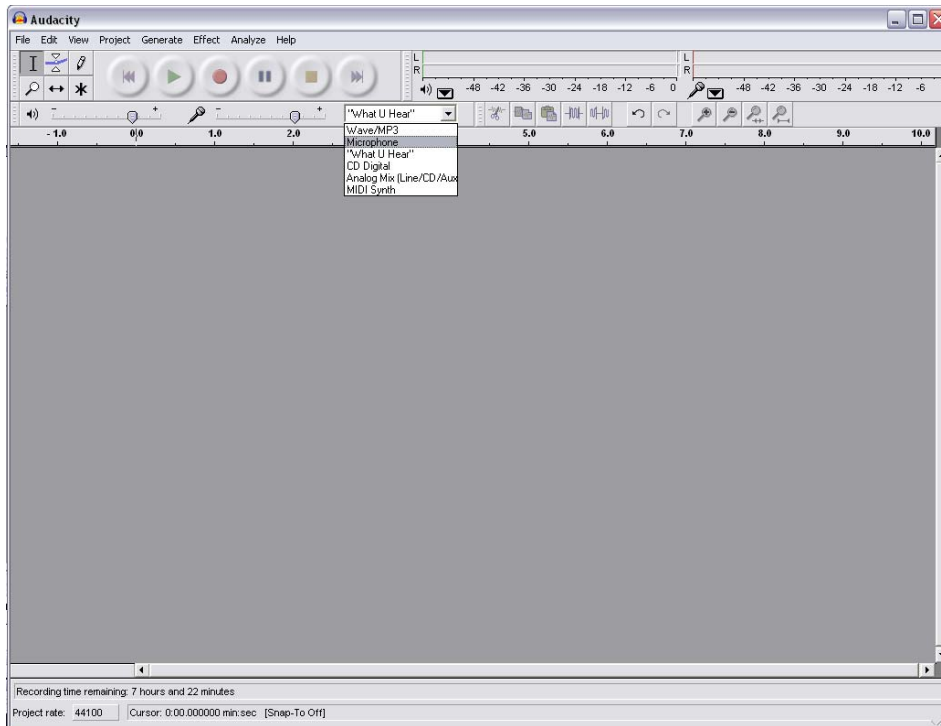
Figure 11 – Source Selection in Audacity

Now we have selected the correct input, which should be from the stereo receiver (Figure 2) and we are ready to begin the recording process. To do so, press "Play" on the tape player and then press the large **Red Button** at the top of the screen.
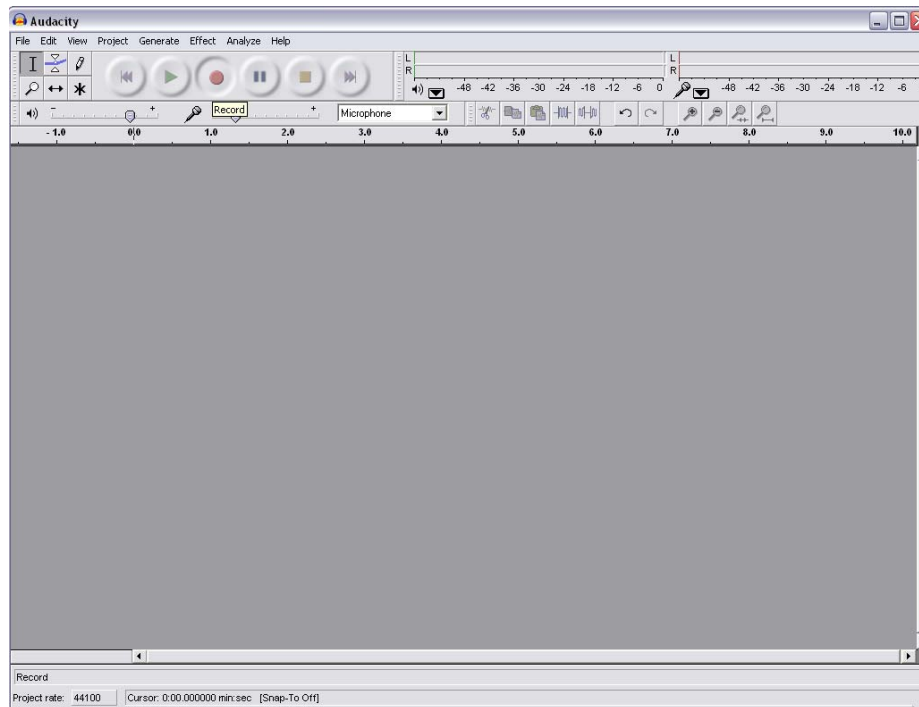
Figure 12 – Starting the Recording Process

Once the audio begins to record a sound wave will begin to form across the screen if there is audio on the tape. If there is no audio, it will appear as a flat line, as shown at the end of the below recording. Once the tape is finished, press the big **Yellow Button** at the top of the screen to stop the recording.
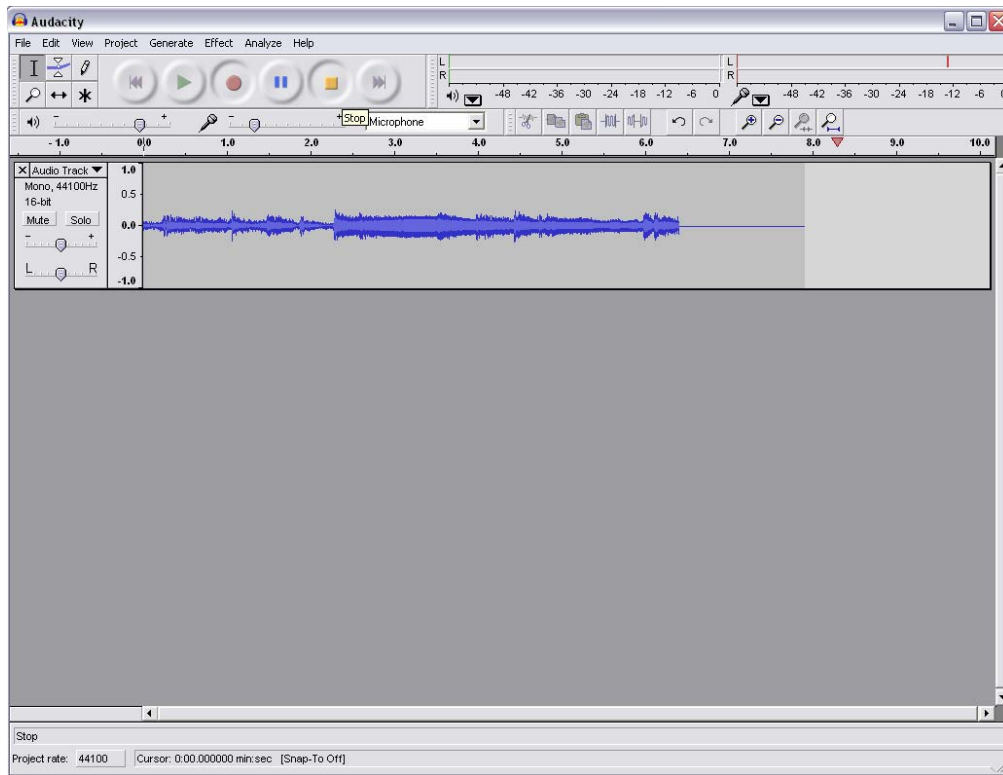
Figure 13 – Example Recording & Sound Wave

Once we have reached this point in the procedure, we have a raw audio file waiting to be dealt with. The most compatible way to compress the audio file will be to store it as an MP3. Before we do that we will get rid of unneeded parts of the audio file by cutting off the end silence and any excess beginning silence. This can be done by first going to the "**View**" drop down menu and clicking "**Fit to Window**" or press the "**Control**" and "**F**" keyboard keys at the same time.
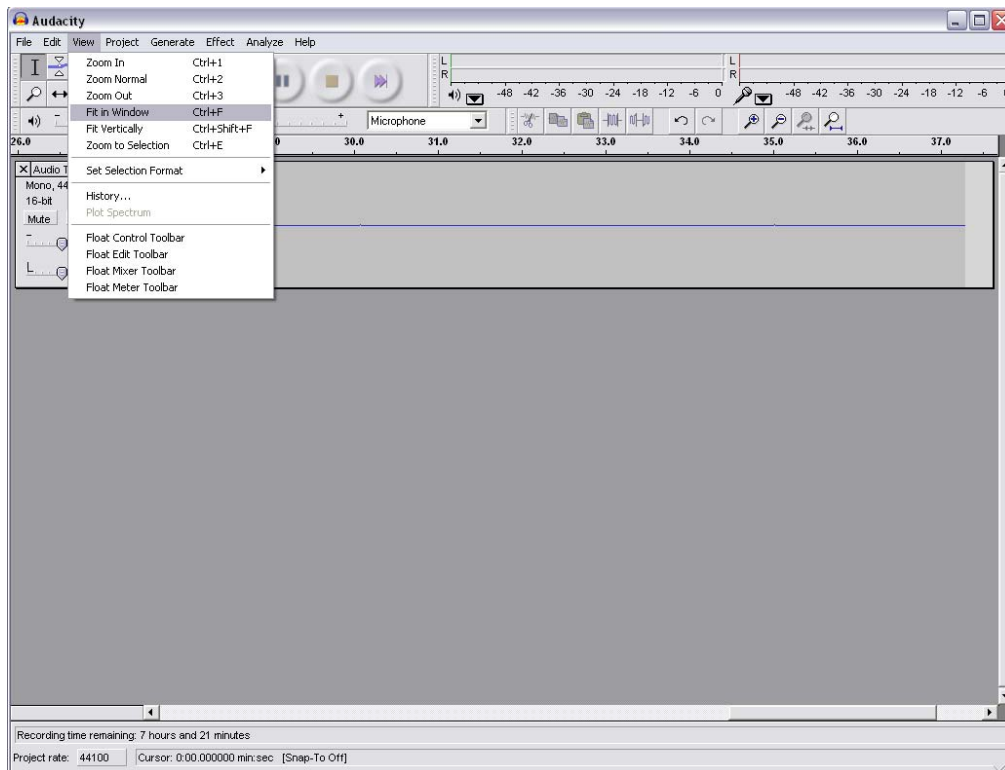
Figure 14 – Fitting Entire Selection to Window

To remove the unwanted silence at the beginning and end of the recorded audio selection, click and drag over the flat line parts and once highlighted press the "Delete" key on your keyboard. This will minimize the amount of unnecessary silence that is kept.

Now we have the audio file and it is shortened to be just the audio and no unwanted silence. This can now be saved or compressed to MP3 format. To do that we will click the "**File**" drop down menu and click "**Export as MP3…**" to compress it.
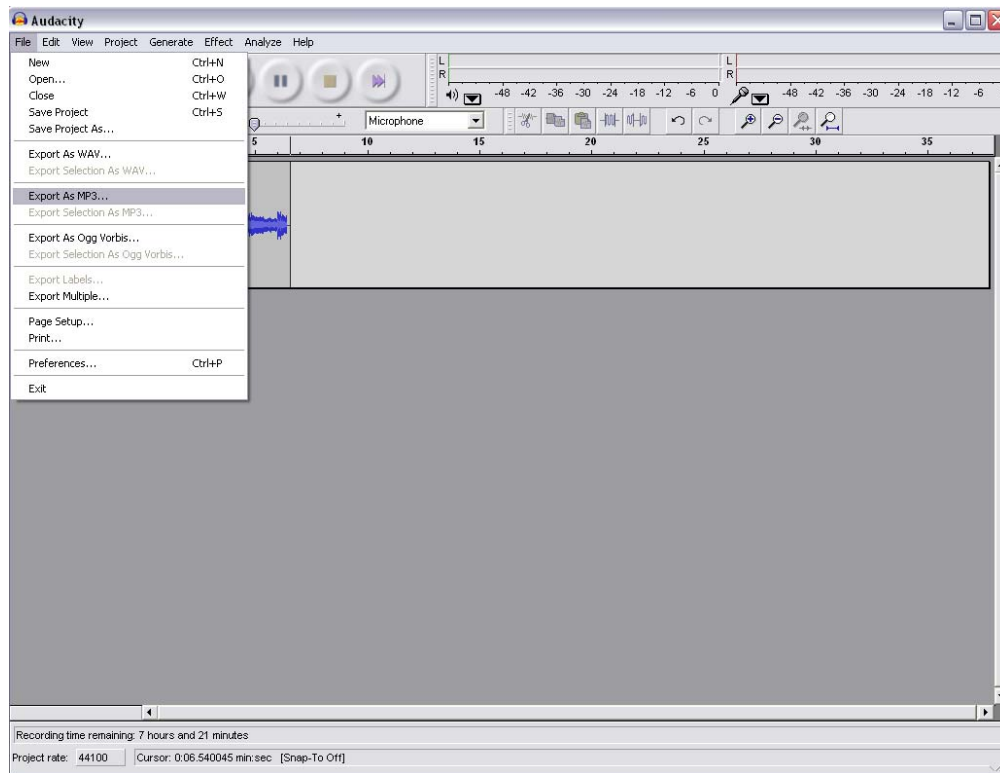
Figure 15 – Compressing to MP3 Format

Audacity will then ask the location to save, we recommend saving to a safe and specific place where you plan to store the preserved audio files. A suggestion would be to create a folder somewhere on the computer dedicated to these files. Once a location has been determined, you can click "**Save**".
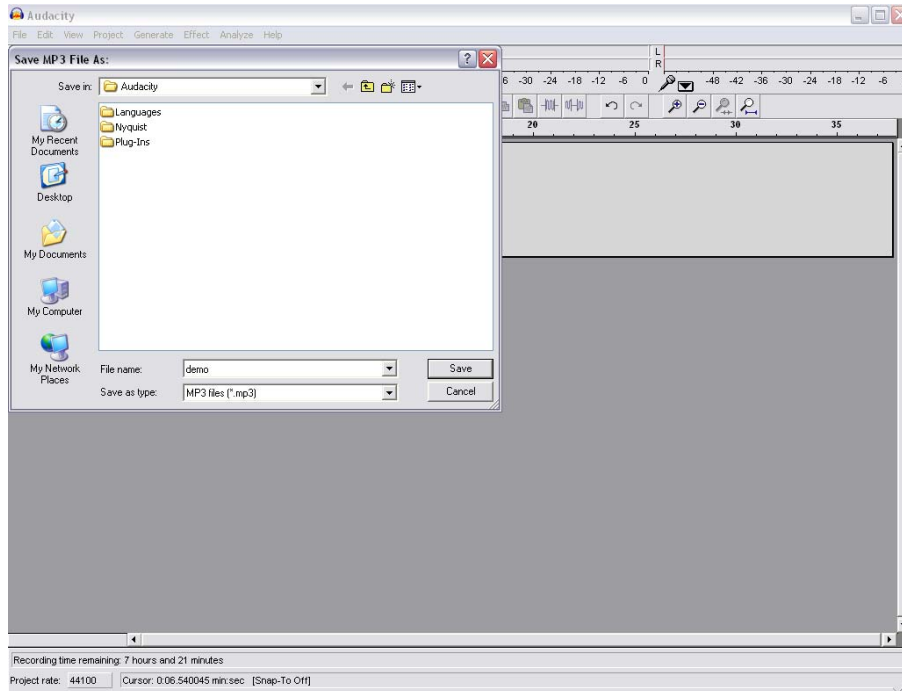
Figure 16 – Saving MP3 Audio Files

At this point you may receive an error message saying that the encoder required is missing. If this happens you need to download the encoder and install it. If there is no error message here, skip to Figure 23.

To install the encoder first we need to download and save the file to your computer. Follow: http://www.mp3-tech.org/software/encoders/lamewin32.exe and save the file but remember where you save it. Now find the file and run the program, and the following window will open.
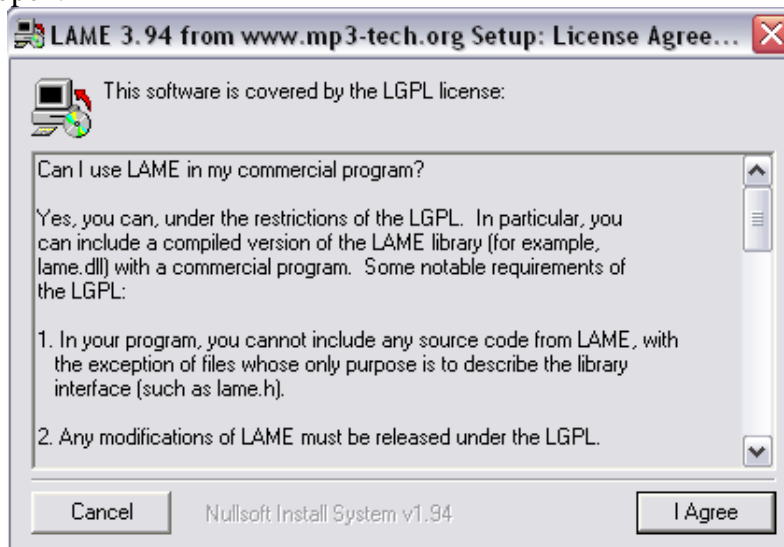
Figure 17 – LAME Encoder GPL

Read the agreement and click the "**I Agree**" button.
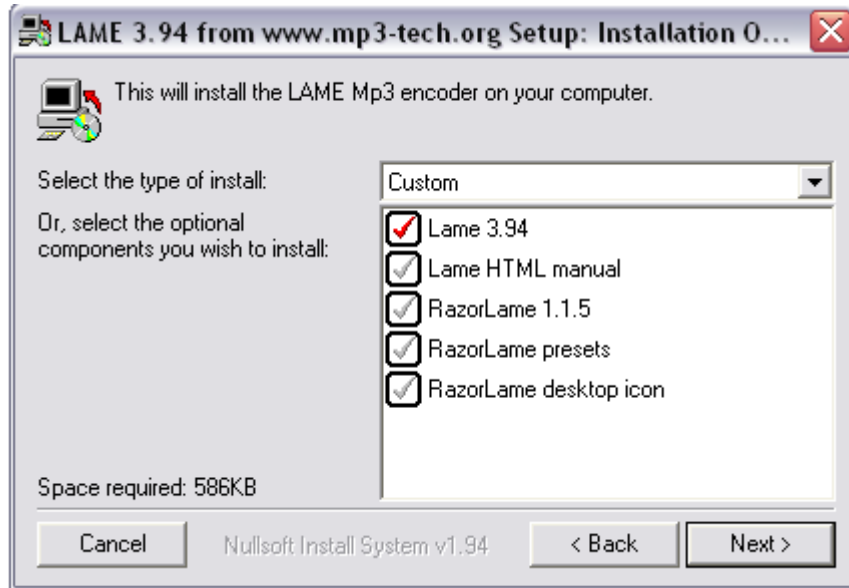
Figure 18 – Installation Options for LAME Encoder

The next window shows the different options and components that you can install. The only component we need is the encoder itself, which is called "Lame 3.94," so click the other check boxes until they are all grey except the top one, which should still be red. Then click **"Next."**
.
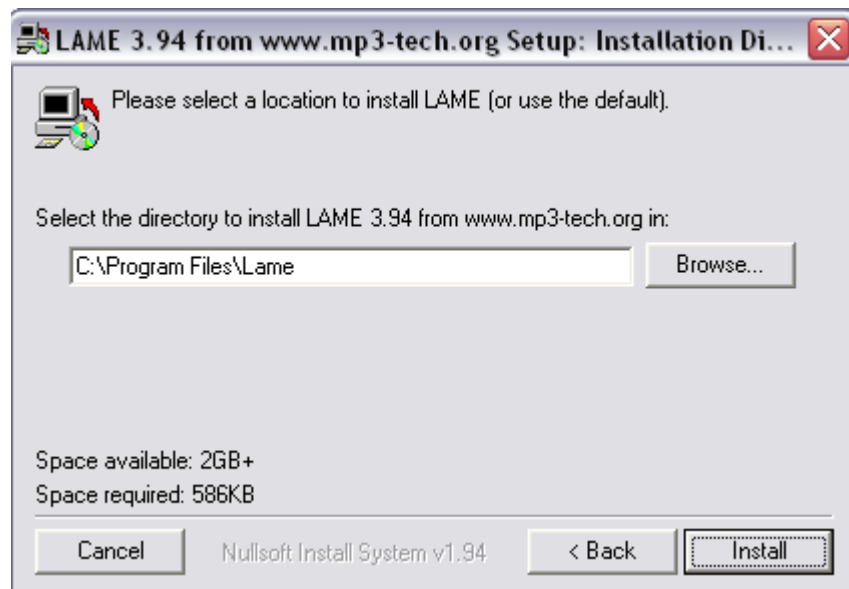
Figure 19 – Installation Location for LAME Encoder

The next part will be to decide where to install the encoder. One suggestion on where to install the encoder is the default location, in Program Files, but this is up to you. Once you have decided, click the "**Install**" button.
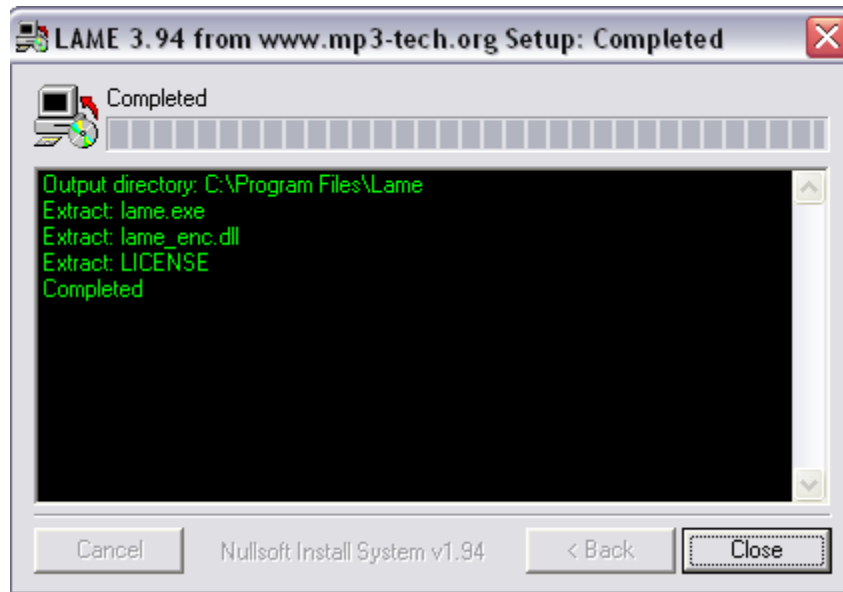
Figure 20 – LAME Encoder Installation Complete

LAME is now installed successfully. Now we return to Audacity to continue with saving and compressing the audio file. Your screen should have the message box asking "Would you like to locate lame_enc.dll now?" and you should click "**Yes**".
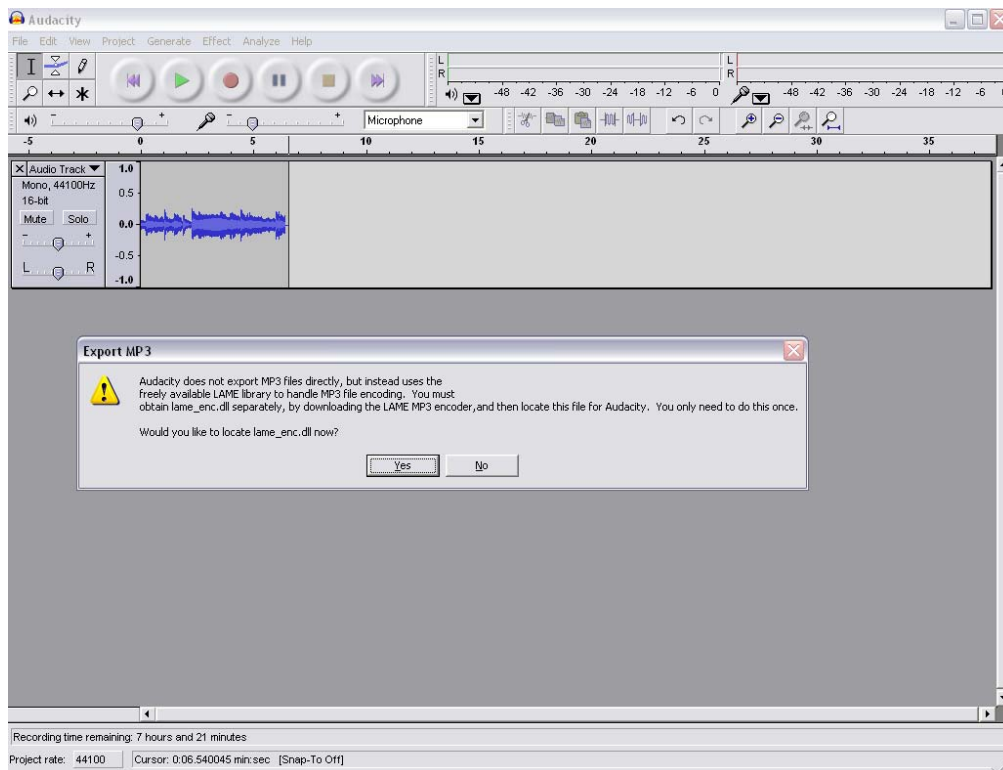
Figure 21 – No Encoder Error Message in Audacity
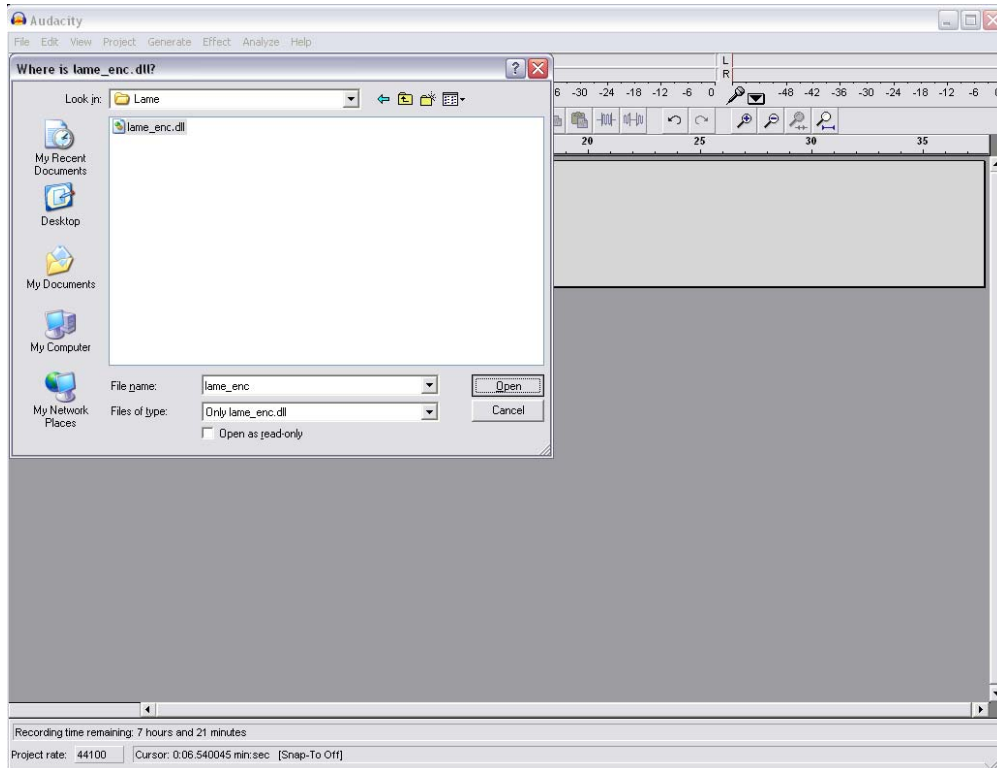
Figure 22 – Locating the LAME Encoder File

We now need to find the Lame_enc.dll file that you installed. You will need to go to the directory where you installed LAME. We used the Program Files location. Once you have the file in the top part of the screen, click it and click "**Open.**"

The next screen that will open will be a pop up box with different fields for ID3 tags. These will attach some information to the audio file if you want. We suggest that you use these to help store information about the files. For example, include the speaker, what they are talking about, the tape that it was originally from, the year it was taped and any other information you feel is pertinent. For example, see Figure 23.
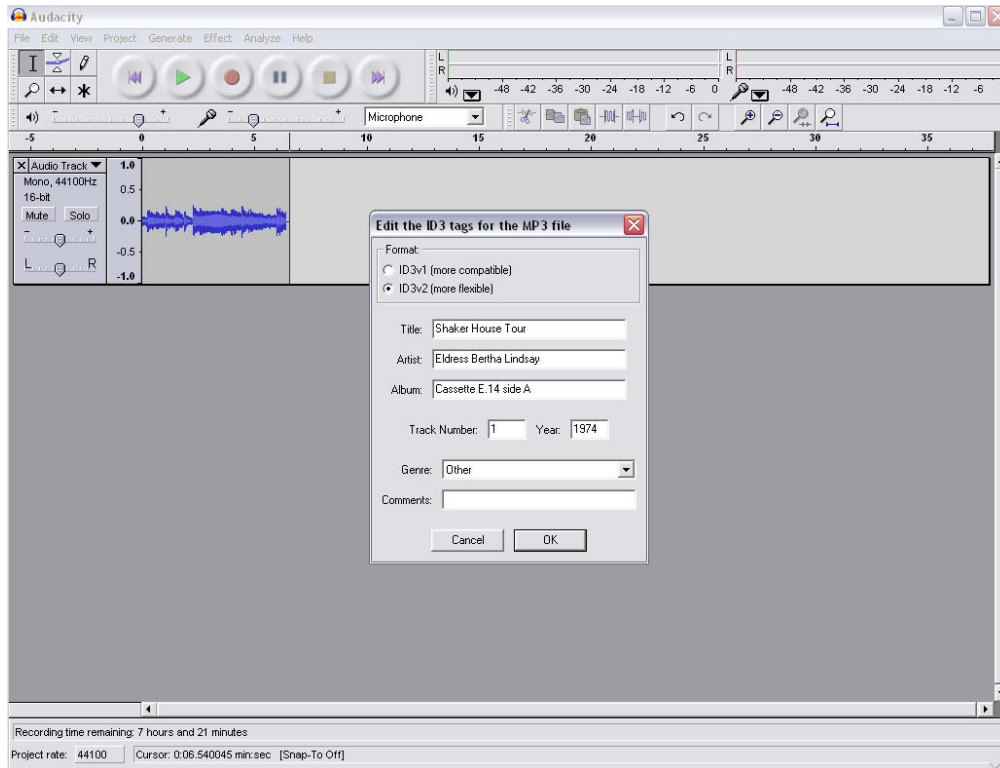
Figure 23 – Editing ID3 Tags in Audacity

Once the ID3 information has been entered click "**OK**". Audacity will display a status bar that shows the progress of saving the MP3 file. Once it is done saving, the status bar will go away. You are now done recording your first cassette. To double check the audio in the new file, locate the audio file on the computer and open it in a program that plays MP3's. Windows Media Player is on most Windows machines and that will work fine. To start the next file, click the X in the top left corner of the audio file box and start over. Or close the whole program and reopen and start over.

Conclusion

The information on the Shaker tapes was extensive, from cooking and music, to rules and regulations, from industries and recreational activities to Shaker bibliographies, and a verbally guided tour of various Shaker buildings. Eldress Bertha Lindsay speaks on 66 of the 74 tapes recorded. Other Shakers include Ethel Hudson, Sister Lillian Phelps, Sister Aida Elam, and Eldress Gertrude. For a complete listing of topics and speakers covered please see Appendix C.

The personalization and specificity given on the tapes make them different from other sources of research. When researching what Shakers did at night before bed, the video by Ken Burns said singing, worshiping, socializing, or reading. Eldress Bertha Lindsay was very specific about what happened during this time giving a weekly schedule. "On Monday evenings were for playing games or doing what you like with your time. Tuesday evenings was young peoples singing group. During this the young people learned more about music and how to sing better. Wednesday evenings were for young peoples conference instruction of regulations and rules learned to be well so that discipline was upheld. Thursday evenings were for Family singing time. The different Families practiced and presented songs that they had learned. Friday evenings were again to be used however we liked. Saturday evenings was prayer service, and Sunday was for worship." Eldress Bertha Lindsay also pointed out that this was before radio and television. After radios came along many of the sisters had them and listened to them at night. When TVs were introduced only some of the houses were allowed to have them

and only educational programs were watched. Even though Ken Burns was correct the latter gives a much more in depth perspective on the ways of Shaker life.

Two the most interesting and possibly useful tapes for the Canterbury Shaker Village staff may be the one with Eldress Bertha Lindsay outlining her suggestions and concerns for the Canterbury Shaker Village in the future. The following is an excerpt taken from one of those tapes.

> I was very fond of the children's house and would love to see the Children's play room fixed up with the games they like to play out. The shelf that is now at the North Shop put back to the south end of the south room because that is where the children used to write. If the children's play room could be fixed up as a play room than the other side of the house could be used for a children's center where the little ones could be taken care of while big folks were on tour. Sometimes it is very inconvenient to have children under six on the tour as they do not understand what is going on and they become restless and noisy. So if someone could be in charge of the children that could be a very nice playground for them. Also we should have a pony for pony rides for them, around the pond going on the saw mill roadway.
>
> Reproductions of some of the furniture made for some of the houses. Fix up rooms with reproductions of beds so tourists could stay over night because there are not enough originals.
>
> I would like the music further looked into and have a musical center, during the week recitals could be held there. We could also have a Canterbury Choral group or a Canterbury Orchestra, or harmonica band, similar to the ones that we once had here. The public could pay to see these different recitals. I would like the music looked into Shaker songs as well as other music that was appreciated by the Shakers from the outside world, like operas, and classical by the masters. There are boxes of music is in attic above the office that came for the music room from the sisters shop. If these could be looked over to be used.
>
> Staff members should not dress in Shaker custom it is not necessary
>
> I would prefer that all the shaker houses not be used as work shops. I think the North shop, laundry room and the carpenter shop should be used as shops. But I like the rest of the houses the way they are and I am particularly found of the use of the manikins, because it shows people in their costume what they were doing. I would especially like to see little girl ironing handkerchiefs because that is what the little girls used to do before graduation to something bigger like dresses and aprons.
>
> I like the display of the carriages in the bottom of the carriage house. But I think the upper rooms should be put to use even if only for storage. The upper south room of the carriage house could be used by some worker perhaps weavers, because the stairs are not too steep.

These suggestions may help in guiding the decisions that the Canterbury Shaker Village staff may need to make or give new ideas for the future.

After completing this IQP, ideas for future IQPs and Canterbury concerning this project have arisen. The scope of our project was to convert the existing tapes into a

more useful format, the digital format. The next step toward actually being useful would be to design a website or something that would allow the village visitors to hear the audio in a useful setting. This new project would involve setting up a server and developing either an interactive museum for the village or possibly using what they already have.

Another project that could be done would be to clean up the audio files that were converted. The audio could be better served if it was put through some conditioning; meaning that the audio is in poor quality and with some filtering and other digital techniques the audio quality could possibly be improved drastically.

Glossary

Bit-rate   Bit-rate is the number of bits that are processed per unit of time. This corresponds to the amount of data that is processed in a given amount of time and is commonly used in audio/video applications.

CD-R   Compact Disc-Recordable is a disc that can contain data or music that can be read by almost all CD players.

DAT   Digital Audio Tape is a signal recording and playback medium developed in the mid 1980s. It is similar to the cassette tape but is about half the size. The digital part of it that makes it a good quality is that it uses a high sampling rate and does not compress the data and therefore is an exact replica of the input.

Encode   An audio encoder is a computer program that compresses data to a specific format such as an MP3.

ID3   ID3 is a tagging format for MP3 files and allows for data to be stored on the MP3 file such as title, artist, album, year and other attributes.

iPOD   Is a popular media player made by Apple Computer. It can also be used a data storage device when used with a computer

Kbps   Kilobit per second is a data transfer rate that is equal to 1000 bits per second.

Lossless   Lossless is used technically to refer to a digital rendition of an analog or real life signal that does not use any compression and is as close to the original as possible.

MP3   MP3 is short for MPEG-1 Audio Layer 3, which is a compression for an audio file that was developed in 1991. Its purpose was to reduce the amount of data required to represent an audio file without losing the sound.

PSP   PlayStation Portable is officially called PSP which is a handheld game console that also supports movies and music and therefore is more than a conventional gaming console.

RCA   An RCA jack is a type of electrical connector that uses an analog signal typically in the audio and video market.

WAV   WAV is short for WAVE, which is an audio format that can be used to hold compressed audio but is more commonly used in a lossless format which keeps the quality at the original state.

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Appendix A – Gantt Chart of Proposed Progress at Beginning

ID	Task Name	October	November	December	January	February	March	April	May
		9/18 9/25 10/2 10/9	0/1 0/2 0/3 11/6 1/1	1/2 1/2 12/4 2/1 2/1	2/2 1/1 1/8 1/15 1/22	1/29 2/5 2/12 2/19	2/26 3/5 3/12 3/19 3/26	4/2 4/9 4/16 4/23	4/30 5/7
1	Project Summary Report								
2	History Aspect	Betsy							
3	Technology Aspect	Joe							
4	Summary Report Complete	10/6							
5									
6	Media Conversion								
7	Program Decision								
8	Cassette Conversion								
9	DAT Conversion								
10	Documentation of Process								
11	Complete Conversion			12/15					
12									
13	Media Transcription								
14	Priority List								
15	Transcription								
16									
17	Topic Division								
18	Division of Files								
19	Keyword Addition								
20									
21	Final Report								
22	Final Write Up								
23	CDR Form								
24	Completion of IQP								5/1

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Appendix B – Gantt Chart of Actual Progress

ID	Task Name		October	November	December	January	February	March	April	May	June
1	Project Summary Report										
2	History Aspect		Betsy								
3	Technology Aspect		Joe								
4	Summary Report Complete		10/6								
5											
6	Media Conversion										
7	Program Decision										
8	Cassette Conversion										
9	DAT Conversion										
10	Documentation of Process										
11	Complete Conversion								4/6		
12											
13	Media Transcription										
14	Priority List										
15	Transcription										
16											
17	Topic Division										
18	Division of Files										
19	Keyword Addition										
20											
21	Final Report										
22	Final Write Up										
23	CDR Form										
24	Completion of IQP									5/1	

Extended because tapes were not readily available and time constraints.

Pushed back due to technical difficulties and lack of DAT player

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Appendix C – Index of Tapes and Their Contents

ID#	Date	Dig.	Dup	Trans	Split	Speaker	Speaker2	Speaker3	Keywords
1	1/29/1978	Yes	No	Yes	No	Eld. Bertha Lindsay			The fields; the woods; the ponds' the orchards. The three families: Upper North, Branch, Church. Brothers and Sisters Living in the different famillies. Ends with Helena Sarle
2a	1/29/1978	Yes	No	Yes	No	Eld. Bertha Lindsay			Continuation of Church Family - buildings and their occupants in the early 1900's.
2b	1/29/1978	Yes	No	Yes	No	Eld. Bertha Lindsay			Money raisers: selling in different areas; brother, sisters and children: articles made by. Upper room of school house; bazaar.
3		Yes	Yes	No	No	Eld. Bertha Lindsay			Recreation: "Maple View"; "Point Comfort" at Winnisquam; beach trips; Blossom Sunday; music; entertainments; dancing; games; candy and popcorn making; holiday foods etc.
4a		Yes	No	No	No	Eld. Bertha Lindsay			Canterbury sisters sent to Ohio and Kentucky to care for ailing sisters there (seven years). Enfield sisters come to canterbury. Enfield sold (1923).
4b		Yes	No	No	No	Eld. Bertha Lindsay			Removal of some buildings at Church Family to save on taxes. Artesian well, 1942.
5a		Yes	Yes	Yes	No	Eld. Bertha Lindsay			Rules and Regulations; evening activites; 1964 Lillian Phelps and Bertha Lindsay move to Office; 1965 ledress Emma King dies; Marguerite Frost appointed; Bertha appointed to Ministry in 1970 and to Eldress in 1971. Guided tours by sisters began in 1859 and continues to 1956. "Bud" Thompson came in 1957; named historical Curator in 1977. Village incorpatated in 1970. Museum collection owned by Bud Thompson sold to SHaker VIlllage, Inc. in 1974.
5b		Yes	Yes	Yes	No	Eld. Bertha Lindsay			Herb Gardens 1957 Ida & Emma, Ministry after only 5, sisters may leave if so desired, choie of burial spot, also cremation, Bertha Lindsay's Autobiography
6		Yes	No	Yes	No	Eld. Bertha Lindsay			Canning, pickling, jelly making; glacing; helping the children; life at Enfield House; Bertha Lindsay appointed to Office, 1964 and to ministry, 1970 and eldress 1972. Eldress Gertrude comes in 1972 from Sabbathday Lake. The Ministry is centered at Canterbury, with 3 members: Marguerite Frost, Gertrude Soule, Bertha LIndsay. Bertha's vocations as aShaker dtailed. Herb garden: 1975, with help of June Sprigg, Phyllis Phillips. Prayers and songs by Eldress Bertha. 3 Prayers and 18 songs taped by Eldress Bertha LIndsay in her 81st year from Memory. Morning Prayer and 2 evening prayers. Songs: Shaker Home; I want to Be; Lily Song - Canterbury Written; Rome on Ye Waves; Oh, We're a Band of Sisters; Roses on My Cross - Mary McCoy; I Will Open the Windows - Eldress Dorothy Durgin; Oh Jarry Not - Dorothea COckron; Let Mine Be - Lillian Phelps; I've a Treasure - Eva Wolcott; Just to Be Holy - Evelyn Polsiy; Oh, The Blessedness - Mt Levanon; Oh, Brighter than the Morning Star; There are notes of Joy & Beauty - Lizzie Horton; God's Love - Dorothy Durgin; Oh, God of Mercy - Elisabeth Cochran; Shun the Thorns - Elizabeth Martin; Oh, I thank God for You - AbrahamPerkins
7		Yes	No	No	No	Eld. Bertha Lindsay			Biographical sketches of Shaker sisters: Rebecca Hathaway, Harriet A. Johns, Jennie H. Fish, Aida Elam, Juila Briggs, Asenath Stickney, Elizabeth Sterling, Lucy Ann Shepard, Susan Hall, Edith P. Clark, Antoinette Chandler, Edna Fitts
8		Yes	Yes	No	No	Eld. Bertha Lindsay			Move biographical sketches: Louise Thruston, Emmeline Hart, Mary Ann Wilson, Josephine Wilson Amanda Matthews, Ellen Meyers, Annice Blake, Lillian Phelps, Daisy Ella Cook, Betsy Wright, Lucy Hunt, Ida Frances Crook, Marguerite Frost, Eva Wolcott, Blanche Lillian Gardner.
9		Yes	No	No	No	Eld. Bertha Lindsay			More Biographical skethces: Alice Miriam Howland, Alice McNear, Evelyn Sofia Polsey, Elder Arthur Bruce, Shaker funeral customs.
10	7/1/1978	Yes	No	No	No	Eld. Bertha Lindsay	Bud Thompson		Tour of Shaker Laundry Building
11	7/3/1978	Yes	No	No	No	Eld. Bertha Lindsay	Bud Thompson		The Sisters Shop; The East House

#	Date								Description
12	9/3/1978	Yes	No	No	No	Mary Alice Hewitt			Reminisces of CSV
13	6/3/1979	Yes	No	Yes	No	Eld. Bertha Lindsay	Bud Thompson		The North Shop; "Maple View"
14a		Yes	No	No	No	Eld. Bertha Lindsay			The Enfield House (House F);
14b	6/10/1979	Yes	No	No	No	Eld. Bertha Lindsay			The School House
15a	1979	Yes	Yes	Yes	No	Eld. Bertha Lindsay	Bud Thompson		Meeting House;
15b	1979	Yes	Yes	Yes	No	Eld. Bertha Lindsay	Bud Thompson		Creamery, Brethren's Shop
16a	Aug	Yes	No	Yes	No	Eld. Bertha Lindsay	Bud Thompson		Infirmary
16b	Aug	Yes	No	Yes	No	Eld. Bertha Lindsay	Bud Thompson		Ministry Shop
17	8/4/1979	Yes	No	No	No	Eld. Bertha Lindsay	Bud Thompson	Jack Auchmoody	Ceremony of re-opening the Laundry
18	1/20/1980	Yes	Yes	No	Yes	Eld. Bertha Lindsay			Carriage House; Horse Barn; Herb House; Garage; Power House; Tin Garage; Bee House; Cart Shed
19	6/7/1981	Yes	No	Yes	No	Eld. Bertha Lindsay			Tour of large Dwelling House CSV
20		Yes	No	Yes	No	Eld. Bertha Lindsay			Syrup Shop
21a	6/30/1981	Yes	Yes	Yes	No	Eld. Bertha Lindsay	Bud Thompson		The Brethren's Shop
21b	6/30/1981	Yes	Yes	Yes	No	Eld. Bertha Lindsay	Bud Thompson		The Creamery
22		Yes	No	Yes	No	Eld. Bertha Lindsay			Suggestions for CSV; "Center for the Study of Shaker Culture and Traditions
23	6/1/1982	Yes	No	Yes	No	Eld. Bertha Lindsay			Office Building (trustees)
24	11/28/1983	Yes	No	Yes	No	Eld. Bertha Lindsay	Mary Boswell		Poplar Industry at CSV
25		Yes	No	Yes	No	Eld. Bertha Lindsay			Cookbook
26		Yes	No	Yes	No	Eld. Bertha Lindsay			Cookbook
27		Yes	No	Yes	No	Eld. Bertha Lindsay			Cookbook
28	Nov-85	Yes	Yes	Yes	No	Eld. Bertha Lindsay			background info for her cookbook: menu planning; puddings; cookies; cakes; etc.
29		Yes	No	No	No	Eld. Bertha Lindsay			Hymns
30	8/3/1984	Yes	No	No	No		Maggie Nevitt	Roy Nevitt	Interview of Eldresses; in connection with play "The World Turned Upside Down
31		Yes	Yes	Yes	No	Eld. Bertha Lindsay			Popular Beverages/Wines, Jams, Jellies, Pickles
32		Yes	Yes	No	No	Sister Lillian Phelps	Sister Aida Elam	Bud Thompson	Music; Lillian Phelps on organ; Aida Elam on Piano, Bud Thompson and his sister sing
33	12/30/1985	Yes	Yes	Yes	No	Eld. Bertha Lindsay	Don Soules	Eldress Gertrude	Interviews eldresses on poplar box making
34	1/17/1986	Yes	No	Yes	No	Eld. Bertha Lindsay	Galen Beale		Poplar Boxes
35	1/28/1986	Yes	No	No	No	Eld. Bertha Lindsay	Galen Beale		Poplar Box Making Instructions
36a	4/13/1986	Yes	No	No	No	Eld. Bertha Lindsay	Galen Beale	Eldress Gertrude	Bertha Lindsay on Poplarwork-buttons
36b	4/13/1986	Yes	No	No	No	Eld. Bertha Lindsay	Galen Beale	Eldress Gertrude	Gertrude about SDL poplar
37a	Apr-86	Yes	No	No	No	Eld. Bertha Lindsay			Narrative about her early life
37b	Apr-86	Yes	No	No	No	Eld. Bertha Lindsay			Letter for Membership Soliciation
38		Yes	No	No	No	Eld. Bertha Lindsay			letter for Shaker Messenger
39	1986	Yes	No	No	No	Eld. Bertha Lindsay			Baked Beans; Clambake
40		No	No	No	No	Eld. Bertha Lindsay			Blancmange Recipe
41	6/29/1986	Yes	No	No	No	Eld. Bertha Lindsay	Galen Beale		Poplar needlecases and pin flats
42	Jun-86	Yes	No	No	No	Eld. Bertha Lindsay			Shaker Messenger (March -June 1986) (Notes)

#	Date								Description
43		Yes	No	No	No	Angela Robinson?			14 Shaker Folk Songs
44	9/1/1986	No	No	No	No	Eld. Bertha Lindsay			Shaker Messenger (Notes)
45		Yes	No	No	No	Eld. Bertha Lindsay			Shaker Messenger (Notes)
46	11/4/1986	Yes	No	Yes	No	Sister Ethel Hudson	Mary Boswell		Interview CSV sweater trade
47	4/1/1985	Yes	No	No	No	Eld. Bertha Lindsay	Mary Boswell		Trustees' Building
48	2/26/1987	Yes	No	No	No	Eld. Bertha Lindsay	Mary Boswell		Learning how to cook
49	2/27/1987	Yes	No	No	No	Sister Ethel Hudson	Mary Boswell		experiences as a cook at CSV
50	3/2/1987	Yes	No	No	No	Leona Merrill Rowell	Mary Boswell		cooking at CSV
51	8/1/1982	Yes	No	No	No	Eld. Bertha Lindsay			Meeting House Building
52a	2/1/1987	Yes	No	No	No	Eld. Bertha Lindsay	Darryl Thompson	Nancy Thompson	Side A; Misc. Readings and Songs
52b	2/1/1987	Yes	No	No	No	Eld. Bertha Lindsay			Side B; Fundraiser Letter
53		Yes	No	No	No	Eld. Bertha Lindsay			Shaker Messenger, Home Notes (Spring 1987)
54		Yes	No	No	No	Eld. Bertha Lindsay			Letter (for membership solicitation)
55		Yes	No	Yes	No	Eld. Bertha Lindsay			Home Notes from Shaker Messenger (april -july 1987)
56		Yes	No	Yes	No	Eld. Bertha Lindsay			Home Notes from Shaker Messenger (aug - oct 1987)
57	9/1/1987	Yes	No	No	No	Eld. Bertha Lindsay			Rosewater Apple Pie Recipe
58	9/1/1987	Yes	No	No	No	Eld. Bertha Lindsay			Easter menu for cooking club
59	2/1/1988	Yes	No	No	No	Eld. Bertha Lindsay			Home Notes from Shaker Messenger (winter 1988)
60	5/1/1988	Yes	No	No	No	Eld. Bertha Lindsay			Home Notes from Shaker Messenger (spring 1988)
61	3/1/1988	Yes	No	No	No	Eld. Bertha Lindsay			Easter Tape
62	3/3/1988	Yes	No	Yes	No	Sister Ethel Hudson			Life at Shaker Village 1907-Present
63	3/1/1988	No	No	No	No	Sister Ethel Hudson			Life at Shaker Village 1907-Present
64	2/1/1988	Yes	No	No	No	Sister Ethel Hudson	Mary Ingham		The sweater industry at Canterbury
65	2/1/1988	Yes	No	No	No	Sister Ethel Hudson			The sweater industry at Canterbury
66		Yes	No	No	No				
67		Yes	No	No	No				
68		Yes	No	No	No				
69		Yes	No	No	No				